



Success

Timely tips to improve student achievement

January 2018

Talawanda City students devise aquaponics growing system

Some **Talawanda City** Talawanda High School students are growing produce with an aquaponics system that utilizes nutrients provided by fish. Students assembled the system and troubleshoot problems as they work to grow cauliflower and kale. To read the full story, go to <http://links.ohioschoolboards.org/SU452>.

Whitehall City promotes hands-on learning

Whitehall City is experiencing an enrollment increase after implementing more hands-on, project-based learning across grades. Whitehall Yearling High School offers an entrepreneurship academy in which students operate a business, while Rosemore Middle School offers an engineering and design class where students constructed a toy with chain drives and motors. Learn more at <http://links.ohioschoolboards.org/SU453>.

Northridge Local pilots career development class

Northridge Local (Montgomery) is piloting a program that gives students with disabilities the tools and confidence to be successful after high school. The district's special education services helped develop a job and career readiness class for its high school and middle school students. Visit <http://links.ohioschoolboards.org/SU454> for more.

Study: Gen Z turns to streaming for video content

Seventy-one percent of teenagers — part of Generation Z — rely on streaming for their entertainment consumption, according to a study from Awesomeness and Trendera. Over one-third turn to YouTube for content, while the same percentage access content from a mobile device, the study found. Go to <http://links.ohioschoolboards.org/SU455> for a study summary authored by **Haley Velasco** for The Drum.

Trends in social, emotional learning in 2018

Make social and emotional learning an intentional part of the school day to help build a common language and support character development, educator and creative entrepreneur **Tamara Fyke** suggests. Fyke shares social and emotional trends she expects to influence schools in 2018 at <http://links.ohioschoolboards.org/SU456>.

Student achievement in-depth

Each month, **Success** brings you a research brief or in-depth article to discuss with board members and administrators.

Study: How do emotions affect learning?

Emotions such as feeling sad or happy may affect how students learn, according to a recent study published in the peer-reviewed journal *Discourse Processes*.

Study findings show that watching something aimed at inducing feelings of sadness yielded better reading comprehension than watching something intended to make viewers feel happy.

Caitlin Mills is one of three authors of the study, *Being Sad Is Not Always Bad: The Influence of Affect on Expository Text Comprehension*, which was published in October, 2017.

"We shouldn't take away from this, 'Let's induce sadness!,'" said Mills, a postdoctoral researcher at the University of British Columbia in Canada. Mills pointed out that the sad subjects outperformed those who were feeling happy, but not those who watched a horror film and were scared.

"The main implication is what the student is experiencing is affecting how they learn," Mills said.

Researchers randomly assigned 160 adults to watch one of two short video clips. Half saw a tear-jerker scene from the 1979 remake of "The Champ." Half watched some of the comedy show, "Whose Line Is It Anyway?," which supposedly makes viewers feel happy.

Afterward, everyone read the same passage about how polar bears survive in the Arctic and took a reading comprehension test. The "sad" adults were significantly better at answering sophisticated questions, such as inferring ideas that were not explicitly written on the page than the "happy" adults. The happy and sad groups scored the same when it came to noting the facts and details of the story.

To verify the findings, researchers did the experiment a second time, with almost 600 people, and found again that the sad group outperformed the happy one when it came to analysis and inference.

Mills said a lot more research needs to be done before we know what the optimal emotions are for different learning tasks. She also speculates that sadness might be a terrible emotion when you want students to engage in discussions.

To read a research summary article by contributing editor **Jill Barshay** for The Hechinger Report, which contains a link to the full study results, visit <http://links.ohioschoolboards.org/SU457>.

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Elyria City showcases middle school filmmaking

Elyria City hosted a short film festival that gave middle school students time to shine as filmmakers who fused multimedia art with language arts to tell a story. More than 20 student-produced films graced the big screen at Elyria High School's Performing Arts Center during the event. For more about the festival, go to <http://links.ohioschoolboards.org/SU458>.

Ohio students with manufacturing skills are in demand

Some students enrolled in southern Ohio career and technical education programs are being recruited by area manufacturers. Representatives from over 30 manufacturers attended a student competition that tests manufacturing skills. Read the full story at <http://links.ohioschoolboards.org/SU459>.

Tips to help students manage self-doubt

Self-doubt is a common problem among high school and college students, according to Dr. **Patrick Carroll**, an assistant professor of psychology at Ohio State University. Carroll and others share strategies to help boost students' sense of well-being and address self-doubt at <http://links.ohioschoolboards.org/SU460>.

What teachers can learn from marathon runners

A marathon runner has a support team of coaches to help achieve goals, a model that offers insight into what can be done to help students succeed, writes author **Ben Johnson** for Edutopia. He shares three lessons for the classroom from a team working to complete a marathon in less than two hours at <http://links.ohioschoolboards.org/SU461>.

Report: 10 ways to improve teacher preparation

Teacher preparation programs should put pedagogical training at the center of course work, according to a report by the American Association of Colleges for Teacher Education's Clinical Practice Commission. The report offers strategies to help boost clinical practice in teacher training at <http://links.ohioschoolboards.org/SU463>.

Student achievement in-depth

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Study looks at completion rate among teen moms

About 53% of teenage mothers earn a traditional high school diploma, according to a report from the nonprofit research organization Child Trends. The report highlights racial and ethnic differences in high school completion rates among teen mothers.

In an article summarizing the report's findings, The Hechinger Report columnist **Jill Barshay** writes it is particularly tempting to overlook the educational challenges teen moms face because of the rapid decline in teen pregnancies over the last 25 years. The teen birth rate plunged more than 60% from 1991 to 2014, the most recent year of data. But, Barshay writes, it is hardly a problem solved. Nearly a quarter million teenage girls ages 15 to 19 gave birth to babies in 2014.

"We should maintain a focus on preventing teen births, but we also need to help improve the educational attainment of women once they become teen parents," said **Jennifer Manlove**, a sociologist at Child Trends, who co-authored the report. "Improving outcomes for young mothers can often improve outcomes for their children."

The report also found that 17% of teen moms who did not obtain a traditional high school diploma later passed the GED test. By contrast, 90% of women who did not give birth as teens obtained a traditional high school diploma.

Manlove emphasizes the importance of traditional high school degrees because they're more highly rewarded on the job market than GED diplomas, she said. And, traditional high school degrees are more likely to lead to college, she said.

Manlove and her co-author, **Hannah Lantos**, arrived at these graduation figures by analyzing a survey conducted by the U.S. Department of Health and Human Services. The National Survey of Family Growth is primarily focused on trends in family life, such as marriage and divorce, pregnancy, infertility and contraceptive use.

The National Survey of Family Growth also asks respondents about their educational attainment. So, Manlove and Lantos combed through the 2011-15 surveys for female respondents in their 20s who said they had a baby during their teenage years and looked to see if they completed a high school degree or its equivalent.

Even with declining teen birth rates, the research found that 18% of American women ages 20-29 had a baby in their teen years. That's nearly 1 in 5. Years after giving birth, 30% of them had neither a high school degree nor its equivalent.

To read the summary article, which contains a link to the full study results, visit <http://links.ohioschoolboards.org/SU462>.

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Northeast Ohio students compete in Genius Project

A class of **South Range Local** (Mahoning) South Range Middle School students are using math, financial literacy and science skills to design a plane, build a model and book a complicated trip to an exotic destination. The lesson is part of the nine-week Northeast Ohio Genius Project. Go to <http://links.ohioschoolboards.org/SU469> for more on the project.

Fairport Harbor EV is hooked on learning that uses fishing lures

Fairport Harbor EV educators introduced students who were struggling to succeed in traditional learning settings to the Hooked on Education program. The program connects students to lessons about fishing, such as using a 3-D printer to design fishing lures. Now in its second year, the program has more than doubled the number of students and teachers. Visit <http://links.ohioschoolboards.org/SU466> for more details.

Pickerington Local's mindfulness program incorporates music

Students and staff at **Pickerington Local's** (Fairfield) Pickerington Elementary School implemented a new program centered around calming techniques and music. The program seeks to foster mindsets for classroom learning and quell anxiety and behavior issues. The Mindful Music Moments exercises were created by **Stacy Sims**, who's also a novelist and children's book author. Read the full story at <http://links.ohioschoolboards.org/SU465>.

Youngstown City combines financial literacy and behavior rewards

Youngstown City's positive behavior program is intertwined with financial-literacy lessons. Intervention specialist **Nancy Rocco** teaches her students how to save their "Ybucks" to purchase larger items from an Amazon-type catalog as part of social studies lessons on fiscal responsibility. For more, visit <http://links.ohioschoolboards.org/SU464>.

Five strategies for addressing school tragedies

Emphasizing the steps schools are taking to keep students safe in the wake of a tragedy such as the recent Florida school shooting can help relieve anxiety and fear, asserts **Melissa Reeves**, former president of the National Association of School Psychologists. She shares other anxiety-relieving strategies, including tuning in and letting students guide the conversation at <http://links.ohioschoolboards.org/SU467>.

Student achievement in-depth

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Study: Digital tools may boost science knowledge

Web-based learning tools may help boost science knowledge among diverse student populations, according to a study published in the International Journal of Science Education. In a research summary article, T.H.E. Journal's Dian Schaffhauser reports that data from the study of 13 middle schools show gains among English-language learners and students with learning disabilities.

Middle schoolers did better with science lessons when they could learn online, watching videos, playing educational games, running virtual experiments and collaborating with classmates, according to Schaffhauser. Under-achievers did especially well, with access to pop-up vocabulary definitions, interactive diagrams, digital note-taking, watching videos with captions and access to text-to-speech that allowed them to hear information read aloud to them.

In the study, researchers introduced four interactive web-based science units to 2,303 students and 71 teachers who had access to computers or tablets in three school districts in Oregon and Georgia. The same cohort of sixth-graders was tracked for three years, with schools in each district assigned randomly to either the treatment or control group.

Educators in the treatment group received access to technology, professional development on how to use the interactive online resources, instructional content and materials for lab activities. The science units designed for the project aligned with the Next Generation Science Standards (NGSS) for grades six, seven and eight. The four units covered 10 to 14 weeks of daily instruction and included:

- Knowing My Body (life science);
- Caring for Our Planet (life science);
- Our Place in the Universe (earth and space science); and
- Energy: Going Beyond the Sports Drink (physical science)

Teacher resources offered detailed lesson plans, ideas for how to scaffold the activities onto background knowledge, student assessment reports and tables that showed how each unit aligned with NGSS and state learning standards. The control group teachers were asked to teach as usual using the curriculum, textbooks, technology and other resources they normally used to teach the same concepts.

According to the researchers, students with learning disabilities in the treatment group improved 18% on assessments of science knowledge from pre-test to post-test; and English language learners increased 15%. Learners in the control group who were taught using the traditional methods showed an increase of 5%.

"These significant findings demonstrate that the online curriculum was effective in improving science knowledge for students who struggle with science," said **Fatima Terrazas Arellanes**, principal investigator on the project and a research assistant professor in the College of Education at the University of Oregon, in a prepared statement. To read the summary article, which contains a link to the full study results, visit <http://links.ohioschoolboards.org/SU468>.

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Upper Arlington City rethinks how students with dyslexia learn to read

Upper Arlington City educators have overhauled their approach to reading instruction, replacing a whole language approach with a phonics-based curriculum. Students who demonstrate signs of dyslexia are provided with one-on-one instruction. To read the full story, visit <http://links.ohioschoolboards.org/SU470>.

Tipp City EV's tiny house project grows

Tipp City EV's Tippecanoe High School students are building two tiny houses. In addition to valuable construction and home-repair skills, students are learning the value of giving back to the community. The first house will be sold to generate funds to build the second one. Once complete, the second home will be donated to someone in need of housing. For more, visit <http://links.ohioschoolboards.org/SU471>.

Bicycle desks keep students moving, learning

Health classes at Oak Grove School District 68's Oak Grove School in Illinois have gotten more active thanks to the addition of 10 bike desks. K-eight health teacher **Sara Kurtz** says the desks create a kinesthetic classroom and help students focus and concentrate. Find out more at <http://links.ohioschoolboards.org/SU472>.

California schools roll out big data classes

Students in about 30 California high schools can enroll in data science, with some schools offering it for math credit. Students use computers to analyze large sets of data, a skill increasingly in demand in the workforce. To read more on this popular addition to high school math departments, visit <http://links.ohioschoolboards.org/SU473>.

Survey: Social media can harm girls' confidence

Technology and social media are contributing to self-doubt, isolation and vulnerability among female students, according to The Girls' Index, a survey of 10,000 fifth- to 12th-grade girls conducted by the nonprofit Ruling Our Experiences. The report found 46% of girls entering high school say they don't believe they are smart enough for their dream careers. Go to <http://links.ohioschoolboards.org/SU474> for more.

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Study: Children may benefit from school-based mental health services

Study findings in the Journal of the American Academy of Child & Adolescent Psychiatry demonstrated that school-based mental health services delivered by teachers and other school personnel helped reduce mental health issues in elementary-aged children, according to a study summary article by **Savannah Demko** for Healy Psychiatric Annals.

“Much remains to be learned about the effectiveness of school-based mental health programs, which in turn, can meaningfully inform partnerships and referral practices among child psychiatrists and other mental health professionals,” **Amanda L. Sanchez**, Center for Children and Families at the Florida International University, and colleagues wrote. “A limited understanding of the effectiveness of school-based mental health services when implemented by school professionals could contribute to the limited application of evidence-based mental health practices in schools.”

Using random-effects meta-analytic procedures, researchers examined the overall effectiveness of school-based mental health services delivered by teachers and other school personnel that specifically targeted mental health problems on elementary school-age children. They also examined the effectiveness of multiple school-based intervention models that varied by treatment target, format and intensity. Nearly 50,000 elementary school students in 43 controlled trials were included in the study.

Across all outcomes, school-based services delivered by school personnel showed a small-to-medium effect in decreasing mental health issues among children. Furthermore, school-based services that integrated mental health services into the school curriculum, targeted externalizing issues, incorporated incident management and were implemented multiple times per week significantly improved their effectiveness.

The largest effects were observed for targeted intervention and selective prevention compared with universal prevention. Targeted intervention and selective prevention showed large and high-medium effects, though small. Universal prevention showed significant effects as well. For externalizing problems, school-based services conducted daily or several times each week showed medium effect, but school-based services conducted weekly or less did not show a significant effect.

“Given the limited accessibility of traditional mental health services for children — particularly for children from minority and economically disadvantaged backgrounds — school-based mental health services are a tremendous vehicle for overcoming barriers to mental health care and meaningfully expanding the reach of supports and services for so many children in need,” Sanchez said in a press release. “Treating children in schools can powerfully overcome issues of cost, transportation and stigma that typically restrict broad utilization of mental health services.”

To read Demko’s summary article, which contains a link to the full study results, visit <http://links.ohioschoolboards.org/SU475>.

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Ashland City students build Minecraft worlds to boost reading skills

Ashland City's Ashland High School students in English teacher **Ben Spieldenner's** class are building worlds in Minecraft, based on the novels they are reading. Spieldenner said the project requires students to read deeper to design their worlds and improves their understanding of the material. For more, visit <http://links.ohioschoolboards.org/SU476>.

Akron City principal works with LeBron James to open a new school

As principal of the new I Promise School opening this summer in Akron, **Brandi Davis** envisions a culture that fosters innovation and passion among teachers and students. Davis will help develop the curriculum of the school, which is opening in partnership with the LeBron James Family Foundation and **Akron City Schools**. She will focus on social-emotional learning and STEM. Go to <http://links.ohioschoolboards.org/SU477> to learn more about this unique partnership.

Columbus City develops substance abuse prevention program for special needs students

Columbus City Schools worked with LifeTown Columbus, which provides hands-on life skills lessons, to create a substance abuse prevention program targeting students with special needs. Studies show people with special needs are at higher risk of substance abuse because they may experience higher rates of trauma and depression and often take prescription medications. Find out more about the program at <http://links.ohioschoolboards.org/SU478>.

Study shows benefits of teaching self-regulation

Incorporating self-regulation lessons into classroom activities could help students learn how to adjust their behavior and emotional responses for different situations, according to a study published in JAMA Pediatrics. Lead study author Dr. **Anuja Pandey** of the Great Ormand Street Institute of Child Health at the University College of London notes that self-regulation skills support "positive health, educational, financial and social outcomes." Read more at <http://links.ohioschoolboards.org/SU479>.

How educators can help students embrace and manage stress

Stress can play positive and negative roles in students' academic lives, especially the parts related to exams and testing, said **Marc Smith**, a psychologist and teacher. He suggests teachers help students understand that stress is natural and even helpful in some cases. View his article, visit <http://links.ohioschoolboards.org/SU480>.

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Study: How executive function affects academics

Students with executive function deficits in kindergarten may experience academic difficulties during elementary school, according to a study by researchers at Pennsylvania State University and University of California at Irvine. In The Hechinger Report, columnist **Jill Barshay** writes that researchers considered data for over 11,000 students from kindergarten through third grade.

“Sometimes we can have in the early grades a ‘let’s-wait-and-see’ approach, but when you see a kid who might have some early indicators of difficulties, that wait-and-see approach can be a wait-to-fail orientation,” said Dr. **Paul Morgan**, one of the co-authors of the study and a professor at Pennsylvania State University.

The study by six researchers at Penn State and University of California, Irvine, Executive Function Deficits in Kindergarten Predict Repeated Academic Difficulties Across Elementary School, was presented in April at the annual meeting of the American Educational Research Association, Barshay reports.

The U.S. Department of Education collected information on three common aspects of executive function: working memory, cognitive flexibility and inhibitory control. According to Barshay, working memory is the ability to store and manipulate new information quickly, and cognitive flexibility is the ability to switch tasks. Inhibitory control was not objectively tested, Barshay reports, but relied on teachers’ ratings of how easily each kindergartener was distracted or could resist impulses.

Morgan and his co-authors then looked at whether low kindergarten scores in each of the three aspects of executive function were associated with lower academic performance in reading, math and science in first, second and third grades. By controlling for students’ skills at the beginning of kindergarten, Barshay writes, the researchers sought to isolate the importance of executive functioning and not conflate it with other academic issues.

Regardless of race, income and early childhood academic abilities, the researchers found that kids who had executive function problems were more likely to struggle academically in subsequent years. This study saw stronger causal links between executive function and academic performance than other studies had in the past.

To read the rest of the study summary article, visit <http://links.ohioschoolboards.org/SU481>. To read the full study, go to <http://links.ohioschoolboards.org/SU482>.

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Whitehall City fair builds enthusiasm for skilled trades

Whitehall City students learned about careers in the skilled trades during Whitehall-Yearling High School's first Academic Trades Fair. Whitehall City Councilwoman **Lori Elmore**, who helped create the event, said it was intended to showcase "the skilled trades as a launch pad." To read the full story, go to <http://links.ohioschoolboards.org/SU483>.

Mahoning County CTC students build sensory indoor play equipment

Mahoning County Career and Technical Center students in the engineering, welding and industrial arts programs worked together to construct sensory indoor play equipment with a 3-D printer. The equipment was donated to a program for students with special needs. Go to <http://links.ohioschoolboards.org/SU484> to learn more.

Columbus City teacher training includes science of trauma

Every adult at **Columbus City**'s Ohio Avenue Elementary School receives training on how students respond to trauma to help address students' unique social and emotional needs. Principal **Olympia Della Flora** says finding a new way to respond to negative behaviors starts with the adults in the building. Find out more about the training at <http://links.ohioschoolboards.org/SU485>.

E-sport leagues attract students on the fringe

Some U.S. high schools that have developed e-sport leagues have seen increases in engagement and academic performance from students who are otherwise withdrawn at school. The positive outcomes moved some educators in California to develop a curriculum around esports that, when approved, will satisfy high school English credits. Read the details at <http://links.ohioschoolboards.org/SU486>.

How one math teacher keeps students engaged

Illinois middle school math teacher **Christine Foster** — recently recognized as a Rising Star by Eastern Illinois University — uses various strategies to keep students engaged. In one lesson, she challenged students to create rap videos about what they would do for an A. For more, visit <http://links.ohioschoolboards.org/SU487>.

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Report: Seven ways to improve data use in schools

Education technology and academic leaders in nine states offer suggestions to improve the use of student data in a report released by the State Educational Technology Directors Association (SETDA). The report — State Education Leadership for Interoperability: Leveraging Data for Academic Excellence — outlines seven practices including forming data governance boards.

In a study summary article for EdWeek Market Brief, associate editor **Michele Molnar** writes that figuring out how to fix this problem requires data interoperability of technology, which refers to the ability for apps to exchange data seamlessly in a secure and controlled way. Right now, Molnar writes, that level of data exchange is more the exception than the rule in most educational technology.

A major reason for this is that most states have systems from multiple vendors, and their districts have additional systems and applications that have had limited or no underlying data standards, according to the study. Agreeing on a plan to implement interoperability and the standards that go with it is a step that could help, writes Molnar.

The study is an outgrowth of an initial meeting held in December with representatives of the selected states and invited vendors, **Tracy Weeks**, executive director of SETDA said. The conversation was “around what states are doing, what’s the vision for it and, if we started to build next steps to the best future, what would they be?” Included in the conversation were academic and technology representatives from the states’ departments of education, writes Molnar.

Seven practices were identified and recommended by the group. The first was to leverage implementation of the Every Student Succeeds Act (ESSA), which the group agreed is an “opportunity to drive change” because systems need to be interoperable to easily share data. Since each title within ESSA supports personalized learning with technology, the report recommends that states consider pooling their set-aside funds to engage in coordinated interoperability activities.

Other suggested practices include: forming data governance boards or structures; developing an implementation plan that’s flexible; sharing best practices; encouraging stakeholder buy-in; collaborating with districts; and communicating with vendors.

To read the rest of the study summary article, which contains a link to the full study, visit <http://links.ohioschoolboards.org/SU488>.

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Trumbull Career & Technical Center students attend career exploration event

Seventy **Trumbull Career & Technical Center** middle and high school students participated in a weeklong career exploration event in mid-June. The event was intended to introduce students to various career fields, including engineering. To read the full story, please visit <http://links.ohioschoolboards.org/SU489>.

Use visual aids to boost student engagement

Using visual aids and designing a discussion about how images and graphics can both reinforce and challenge their assumptions can help engage students, writes adjunct education professor Dr. **Jennifer Davis Bowman** for Edutopia. She explains how she used a line graph that compared student attendance rates with grades to start a discussion about grades and absenteeism at <http://links.ohioschoolboards.org/SU490>.

Should vocabulary lists be created by students?

Teachers can help students take more responsibility for their learning by asking them to create their own vocabulary lists, writes **Kaitlyn Watson**, a North Carolina seventh-grade English language arts teacher, for Edutopia. Watson shares tips to help teachers adopt this strategy while strengthening students' vocabulary at <http://links.ohioschoolboards.org/SU491>.

NFL player offers tips on financial literacy

Educators can help students understand the importance of good financial habits by sharing their personal experiences with money, especially their challenges, NFL wide receiver **Arrelious Benn** says. Benn, who is working with an online financial literacy program, aims to help young people develop skills and habits that lead to responsible, stable financial futures. Read more at <http://links.ohioschoolboards.org/SU492>.

Survey: One in five teachers works another job

About one in five public school teachers are supplementing their income by working a second job, according to data from the 2015-16 National Teacher and Principal Survey, conducted by the U.S. Department of Education. A separate analysis by the Bureau of Labor Statistics found that teachers were 30% more likely than workers in other fields to have outside employment. Go to <http://links.ohioschoolboards.org/SU493> for more.

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Study: Where is the math gender gap widest?

Girls outperform boys in math in low-income school districts while boys do better than girls in math in wealthier districts, according to a study from researchers at Stanford University and the Learning Policy Institute. The researchers don't know why these gaps exist but hypothesize that students in wealthier districts may be more influenced by gender norms.

The research shows that in the places where “privileged” families cluster — wealthier school districts where men earn more than women, have higher levels of education and are more likely to work in business or science — boys outperform girls in math by a larger margin than in other communities. The findings are based on data from more than 260 million state tests given to students in grades three through eight in 10,000 U.S. school districts.

The study found that in the U.S., on average, there is no gender gap in math scores, writes **Jenny Anderson** in a study summary article for Quartz Media. Anderson writes that in test after test, in the U.S. and around the world, girls tend to do better on reading, but findings of a gap in math have been mixed.

Anderson writes, “Since international, national or state-level data can obscure local differences, Stanford and the Learning Policy Institute created the most comprehensive U.S. district-level education data set ever to see what impact local communities have.”

Dr. **Sean Reardon**, a professor at Stanford University’s Graduate School of Education and the lead author of the study said the goal was “to map the patterns of gender achievement gaps across the entire country in order to develop a better sense of what kinds of communities and school districts most commonly provide equal educational opportunities for girls and boys.”

The results, based on tests from the 2008-09 through 2014-15 school years, suggest that achievement gaps may not be as fueled by subject as they are by parents, schools or communities.

Anderson writes there is no way to know from the study what caused girls to do worse than boys in richer neighborhoods, but the authors posed a few ideas. Perhaps role models matter — maybe boys see their fathers working more and earning more and that fires them up to perform better in math or girls see mothers working less or earning less and internalize a message that they should try less.

Perhaps parents with resources react to small preferences young kids express about activities — shaped no doubt by societal gender norms — and reinforce those through activities, sending Jason to robotics club and Jade to ballet, according to Anderson. Or, it’s possible schools in wealthier neighborhoods treat boys differently, encouraging them more than girls in math. To read the rest of the study summary article, which contains a link to the full study, visit

<http://links.ohioschoolboards.org/SU494>.

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Teachers in 15 southwest Ohio districts adopt new learning app

A new app helped **Cincinnati City's** School for Creative and Performing Arts teacher **Harvey Lewis** keep up with the classroom while he attempted a world-record feat that took him far from home. Through Abre, an education platform now being used by 15 southwest Ohio school districts, students are taken on educational journeys with their teachers. Find out more by visiting <http://links.ohioschoolboards.org/SU495>.

South-Western City works to prevent summer reading loss

South-Western City educators are working with public libraries to engage students in reading during the summer break to prevent summer learning loss. A study by the Center for Summer Learning at Johns Hopkins University found that students who did not read during the summer showed diminished reading skills when they returned to school. To learn more, visit <http://links.ohioschoolboards.org/SU496>.

Zoo's hippo stars in books, lessons for classroom

Fiona, a hippopotamus born prematurely at the Cincinnati Zoo, has become the subject of books and classroom lessons. Several Scholastic magazines have featured the hippo, and reading and math exercises have been created based on Fiona's life. In one exercise, students were asked to calculate how many bathtubs the water in Fiona's zoo would fill. Read more at <http://links.ohioschoolboards.org/SU497>.

Creating an affordable, accessible makerspace

Teachers at the International Society for Technology in Education annual conference shared ideas to help install makerspaces in schools that have limited resources. **Robert Pronovost**, a science, technology, engineering and math coordinator in East Palo Alto, Calif., said he worked with students from the beginning to get their input and engage them in activities at <http://links.ohioschoolboards.org/SU501>.

How one teacher makes science lessons engaging

Seth Guñals-Kupperman, a physics teacher at a New York City high school, found science lessons boring as a student and now works to make the subject engaging for his students. He describes how he uses "discovery labs" — in which the outcome is not known — to engage students in science lessons at <http://links.ohioschoolboards.org/SU499>.

Student achievement in-depth

Each month, **Success** brings you a research brief or in-depth article to discuss with board members and administrators.

Study considers effect of summer slide

Summer learning loss takes a greater toll on students' achievement in math and reading over time, according to an ongoing study by the Northwest Evaluation Association (NWEA).

By the end of middle school, the study found that students may lose a third to half of what they learn during the year to summer slide, according to a study summary article by reporter **Sarah D. Sparks** for Education Week.

"As kids grow less and less during the school years, they are still seeing the same summer drop — so they are losing proportionately more," said **Megan Kuhfeld**, a research scientist at NWEA and the study's author.

Kuhfeld tracked the achievement of students in more than 500 schools that participated in the MAP Growth test in reading and math, Sparks writes. The computer-adaptive tests are given at least twice a year, allowing a more detailed look at how summer affects student achievement across elementary and middle grades.

According to Sparks, Kuhfeld analyzed the scores of more than 42,000 students from grades three to six, and nearly 40,000 students from grades five to eight in an unnamed southern state.

The gaps are measured in RIT scores, a vertically aligned scale that allows researchers to compare academic growth across grades. On average, students lost about two points out of a possible 250 each summer in reading and a little more than four points each summer in math.

Kuhfeld found both white and black students and those of different income levels lost academic ground over the summer, but overall summer slide, "doesn't seem to be primarily driven by student race, and it doesn't seem to be primarily driven by (the percentage of students eligible for) free and reduced-price lunch at the school level."

Instead, differences between students at different schools explained the overwhelming majority of the overall summer learning gaps. Sparks writes that Kuhfeld plans to expand the study in up to 40 participating states and, to release deeper analyses of racial and socioeconomic trends in the coming months.

To read the rest of the study summary article, which contains a link to the full study, visit <http://links.ohioschoolboards.org/SU500>.

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How Ohio schools support student health

Some Ohio school districts, including **Northmont City Schools**, are taking steps to improve student health, including employing nurses and training staff to recognize medical conditions, according to a survey by the Dayton Daily News. **Kevin Lorson**, director of Wright State University's physical education license program, said students' health can directly affect academic performance. Go to <http://links.ohioschoolboards.org/SU502> for more.

Study: Federal grants boost academics in Ohio

Student achievement in math and reading improved at Ohio schools that received School Improvement Grants (SIG) from the U.S. Department of Education, according to a study published in the journal Educational Evaluation and Policy Analysis. Ohio received \$130 million in SIG money during the academic years covered by the study. For more on the findings, visit <http://links.ohioschoolboards.org/SU503>.

The new anxiety of going back to school

Social pressures, academic expectations and concerns about personal safety are among the stressors some students wrestle with as they return to school, writes **Theresa Woodard**, WFAA-TV reporter. Clinical psychologist Dr. **Nicholas Westers** told Woodard that anxiety serves useful purposes, but if a child begins losing sleep or refuses to go to school, then parents should consult a physician. Find out more by visiting <http://links.ohioschoolboards.org/SU504>.

Afraid to call parents? Say something positive

Instead of waiting until a student gets a poor grade or misbehaves to call home, why not regularly tell parents about the positive ways students interact at school? Learn how one principal made calling home for good reasons a habit that produced benefits for his relationships with parents and students at <http://links.ohioschoolboards.org/SU505>.

Tips to help districts draft social media policies

Crafting social media policy can help schools support the proper use of social networks and guard against potential privacy violations, writes Common Sense Media's Dr. **Tanner Higgin**. Higgin shares four keys to include when drafting a policy, such as parent opt-out forms and tying use to learning outcomes at <http://links.ohioschoolboards.org/SU506>.

Student achievement in-depth

Each month, **Success** brings you a research brief or in-depth article to discuss with board members and administrators.

Study considers top educational technology priorities

More than 90% of school district leaders across the country say their top priority for education technology is to personalize learning for students, according to a survey from the Center for Digital Education (CDE). About 75% of districts offer blended-learning options, and more educators are expressing concern about student data and privacy issues, according to a study summary article by Senior Contributing Editor **Dian Schaffhauser** in THE Journal.

In the pursuit of encouraging personalized learning in their districts, the overwhelming majority of respondents reported that they:

- provide software or digital curriculum to classrooms (96%);
- provide computing devices to classrooms (94%);
- provide professional development in personalized learning practices (92%).

Two-thirds of districts (65%) also assess teachers on their implementation of personalized learning practices.

CDE conducts this study every year, inviting public school districts nationwide to participate. This year's survey drew responses from 120 school districts in 24 states, and results were fielded between November 2017 and January 2018.

The top priorities haven't shifted from the previous year, according to Schaffhauser. While personalized learning topped the list, that was followed in rank order by:

- digital content and curriculum;
- professional development and skills training;
- mobility.

Concern over student data and privacy is inching up, moving from eighth place in the previous survey to sixth place this year. What has dropped is upgrading of the network (moving from fifth place to seventh); online testing (from sixth place to ninth); and Common Core and state standards (from seventh place to eighth).

Training and professional development on technology tackles multiple goals, Schaffhauser writes. The most prevalent are the integration of technology into curriculum and instructional practices (mentioned by 98% of respondents); how to use hardware and software (96%); how to perform administrative functions, such as measuring attendance (93%); and how to get online and on-demand access (90%).

Also, more than 77% districts reported they allow students to take fully online classes for credit. A similar number (76%) offer blended classes in core content areas, and half of respondents said their districts have plans to deliver content online. To read the rest of the study summary article, which contains a link to the full study, visit <http://links.ohioschoolboards.org/SU507>.

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How Chagrin Falls EV engaged parents in technology rollout

Communication with parents is a key component of any school technology rollout, according to **Mike Daugherty**, director of technology and information systems, at **Chagrin Falls EV**, one of the 12 original Google Reference districts. Daugherty shares several strategies his district used to engage and educate parents about the shift, including a newsletter, emails and events at <http://links.ohioschoolboards.org/SU508>.

Chillicothe City adopts college planning tool

Chillicothe City's board of education recently approved participation in the MyCollegeOptions program, designed to help pair students with colleges that match their career interests and abilities. The free college planning service offers assistance to students, parents, high schools, counselors and teachers nationwide and is designed to assist high school students in exploring a wide range of postsecondary opportunities. For more on the program, visit <http://links.ohioschoolboards.org/SU509>.

Lakewood City students interact with summer reading authors

Students at two **Lakewood City** middle schools talked to three graphic novel authors as part of the culmination of their summer reading assignment. Students were allowed to pick among graphic novels for the assignment, which included analyzing the book and either creating their own graphic novel or artwork related to the selection. Find out more by visiting <http://links.ohioschoolboards.org/SU510>.

Stow-Munroe Falls City introduces STEM into elementary curriculum

Stow-Munroe Falls City educators are gradually introducing science, technology, engineering and math concepts, including coding, to elementary students, writes academic technology specialist **Kristen Fudale**. She shares two learning stages the schools adopted: problem-solving and integrating STEM and coding lessons across the curriculum at <http://links.ohioschoolboards.org/SU511>.

Massachusetts district enlists addiction counselors to help deal with opioid crisis

Some schools on Cape Cod, Mass., are hiring addiction counselors to support students who have family members with addiction problems. The counselors also help teachers offer appropriate support for these students and are employed by Gosnald, the largest provider of addiction services on the Cape. Go to <http://links.ohioschoolboards.org/SU512> for more.

Student achievement in-depth

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Survey: School-issued devices affect learning

High school students with school-issued devices are more likely to email their teachers with questions, take notes in class and collaborate with their classmates, among other tasks, according to results of a survey by the Speak Up Research Project for Digital Learning.

The study found more than twice as many principals in 2017 said students in their schools were assigned some type of mobile device, like a laptop or tablet, than in 2015, according to an article written by **Tara Garcia Mathewson** for The Hechinger Report. Sixty percent of principals who responded to the survey said they assign these devices, compared with 27% two years earlier.

The Speak Up survey is a national initiative of Project Tomorrow, an education-focused nonprofit. The survey reached almost 341,000 students in 2017, and it found some distinct differences in what students with and without mobile devices said they did in school.

High schoolers assigned a laptop or a Chromebook also were more likely to do internet research, create documents to share, check their grades and get reminders about tests or homework due dates. Among high school students assigned these devices, 60% said they had emailed their teachers with questions. That's compared to 42% among students without an assigned device.

In focus groups, students explained that emailing their teachers was somewhat of an anxiety release, Speak Up CEO Dr. **Julie A. Evans** said. Evans also is the author of a brief about the findings.

"It isn't as if they need the teacher to respond to them in that moment," Evans said. "It's more that they want to share the problem with someone." And when they go to class the next day, they can arrive knowing their teacher already is aware of the problem.

Most high schoolers have a way to send an email from home, whether it's from a smartphone or a family computer. But students with assigned devices from their schools are more likely to actually draft those emails and hit send.

To read the rest of the article, which contains a link to a brief about the findings, visit <http://links.ohioschoolboards.org/SU513>.

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Dayton City adds career-tech programs at all high schools

Dayton City is offering three career-technical education courses at all high schools, according to Superintendent Dr. **Elizabeth Lolli**. The effort, which began about one year ago, is aimed at ensuring students have more pathways to success in college and career. To read more, go to <http://links.ohioschoolboards.org/SU514>.

Springfield City students offer policy research and ideas to local leaders

A group of **Springfield City** high school students recently presented its policy ideas to local elected officials and judges. Government teacher **Scott Hambrick** said students were taking part in Project Citizen to learn about public policy issues even before they can vote. For more on the program, visit <http://links.ohioschoolboards.org/SU515>.

Strongsville City students get lessons on medical careers

Some **Strongsville City** middle school students are learning about potential careers in health care through an online program from the Cleveland Clinic. Benefits of the program include hands-on activities that let students solve medical case studies and virtual classroom visits from health care professionals. Visit <http://links.ohioschoolboards.org/SU516> to read the full story.

Lorain County JVS pilot program offers credit in four career pathways

Lorain County JVS will offer students the opportunity to earn college credits in four career-technical pathways through a partnership with an area community college. The pilot program will allow high school students to earn credits toward an associate degree in computerized design and drafting, culinary arts, network communication technology and engineering. More details can be found at <http://links.ohioschoolboards.org/SU517>.

Career-technical education programs add focus on robotics, drones and mechatronics

Career-technical education programs at some high schools are integrating courses in robotics, unmanned aviation technology and mechatronics to help prepare students for in-demand jobs in these fields. A Maryland high school offers a four-year Aerospace Engineering and Aviation Technology program and is constructing an indoor space for students to practice operating drones. Visit <http://links.ohioschoolboards.org/SU518> for more.

Student achievement in-depth

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Report: Students need help developing social and emotional learning (SEL) skills

Educators should take steps to foster a school culture that supports teen development, according to a consensus report from the Alliance for Excellent Education that was released in early October at the International Mind, Brain and Education Society research conference. The report suggests that educators teach students to develop healthy relationships and help them recognize the benefits of taking “positive risks,” such as tackling difficult projects.

“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 Dr. **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 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, Watamura 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.

Throughout their lives, students get steadily better at inhibitory control — the ability to avoid distractions and stay focused amid changing situations, writes **Sarah D. Sparks**, in an Education Week article. According to Sparks, the prefrontal cortex, an area of the brain associated with attention, decision-making 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, Sparks writes that Dr. **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.

To read the rest of the summary article, which contains links to the cited research above, visit <http://links.ohioschoolboards.org/SU519>.

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Anthony Wayne Local teacher overhauls agriculture lessons to project-based focus

Whitney Short, an **Anthony Wayne Local (Lucas)** teacher and a National Agriscience Teacher of the Year, overhauled her high school agriculture courses to focus on project-based lessons, including the Chicken Challenge, where students look for ways to “produce the best chickens for market in the least amount of time.” To read the full story, go to <http://links.ohioschoolboards.org/SU520>.

Lorain City journal project tackles literacy, emotional skills

Some **Lorain City**'s Frank Jacinto Elementary School students are improving their literacy skills by writing in daily journals about gratitude as part of the New York-based nonprofit Grateful Peoples Project. The school started the initiative with an assembly that included a FaceTime call with musical actor **Lexi Garcia**, who spoke to students about how to show more gratitude in their lives. For more on the project visit <http://links.ohioschoolboards.org/SU521>.

Columbus City special needs students show off science skills

Columbus City special needs students recently presented projects they worked on for the district's annual Exceptional Science Fair. Aligned with high school science standards, students worked on the projects throughout the school year, and some worked with peers in science, technology, engineering and math courses. For more, go to <http://links.ohioschoolboards.org/SU522>.

Port Clinton students record literature podcasts

Port Clinton City's Port Clinton High School creative writing students are developing podcasts to chronicle the process of writing their first novels. Episodes may include having students speak as their protagonist on the program or debate writing topics, such as point of view, teacher **Joe Miller** said. Visit <http://links.ohioschoolboards.org/SU523> for more on the podcasts.

Should schools teach parents to ask questions?

According to New Hampshire teacher **Deirdre Brotherson**, the strategies used to help students learn to ask questions could be used to improve parental engagement. She uses the Question Formulation Technique developed by Dr. **Dan Rothstein**, whose process can help parents feel less defensive and focus more on collaboration. Go to <http://links.ohioschoolboards.org/SU524> to read the full story.

Student achievement in-depth

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Report: Technology more prevalent but isn't superseding traditional and blended learning

Almost half of all students globally use a desktop computer during lessons at school, but new technologies have not superseded traditional tools and blended learning, according to a new report from Cambridge International.

The report features the results of an international online survey of almost 20,000 teachers and students from 10 countries collected between March and May in 2018. The survey explores how students learn inside and outside the classroom and the roles that teachers and students play in measuring success.

While new technologies, such as smartphones, smartboards and tablets, are starting to be used in classrooms, 9 in 10 students are still using a pen and paper during lessons, and 73% are using a whiteboard with marker pens, according to an article by reporter **Sara Friedman** for THE Journal.

The report finds three-quarters of students in the United States are using desktops and smartphones for learning experiences, but China leads the world when it comes to tablet use in classrooms at 50%.

"As a leader in an international education, we feel like we have a unique understanding of how students learn and teachers educate," said **Mark Cavone**, the U.S. regional director of Cambridge International. "In the task of preparing students for their future, it is becoming more difficult. We want to understand not only what students are learning but how and in what context to share the insights to the wider education community."

The report also highlights other areas of student and teacher engagement:

- Mathematics is the most commonly studied subject around the world in 88% of schools, followed by the English language at 84%, chemistry at 65% and physics at 63%.
- Private tutoring is most common in China, followed by India at 55%. In the U.S., only one in 10 students has additional lessons outside of school hours. The majority of U.S. students (66%) are getting tutoring in math, followed by 43% in physics.
- Most teachers (71%) believe that teaching is a rewarding career, and 8 in 10 teachers in the U.S. chose the profession because they like working with young people.

To read the article, which contains links to the full Cambridge International report, visit <http://links.ohioschoolboards.org/SU525>.

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