

SPONSOR UPDATE

APRIL 2018

Peggy Young,
Director

Jennifer Schorr,
Associate Director

OUR MISSION

The mission of the Education Division of Buckeye Community Hope Foundation is to establish strong public community schools by adhering to quality authorizing practices, ensuring responsible oversight, and setting high standards for school performance.

OUR VISION

The Education Division's vision is strong communities of healthy, well-educated students, and a future in which all students have access to a high quality public education. Ohio thrives as increasing numbers of schools graduate students equipped to assume a positive role in society.

Draft strategic plan for education released

In discussions regarding Ohio's Every Student Succeeds Act (ESSA) plan, Superintendent of Public Instruction Paolo DeMaria has been quick to point out that another important document – a strategic plan – will also inform public education in the Buckeye State throughout the 2019-2024 school years.

Last month, the Ohio Department of Education and State Board of Education released a draft document outlining the three guiding principles – the whole child, caring adults and a strong system – that serve as the foundation of the five-year plan. The document also identifies 15 strategies that support four equally-valued “domains of learning:” foundational skills and knowledge; well-rounded content; reasoning; and, social-emotional.

The purpose of the plan is to help each child become successful thanks to the guidance and support of caring adults who are empowered by an effective system. The first strategic plan for K-12 education in more than a decade, it's intended to serve as a tool to inform public policy and education practice in Ohio's schools.

More than 150 preK-12 educators, higher education representatives, parents and caregivers, employers, business leaders, and philanthropic organizations worked collaboratively over the last six months to develop the draft strategic plan.

The next step in the process is to gather stakeholder feedback for consideration. Two opportunities to share thoughts and inform the continued development of the plan are available: offer feedback online; or do so at one of 13 regional meetings to be held across the state.

Review the draft plan and learn how to weigh in at:
<http://education.ohio.gov/About/Ohios-Strategic-Plan-for-Education>



NEW REPORT CARD INDICATOR UNVEILED

Under Ohio's Every Student Succeeds Act (ESSA) plan, absenteeism rates will become a graded component of school performance as measured by state report cards.

To meet the new indicator, 86.4 percent of students must not be chronically absent, with the target increasing by about one percent each year until 2025, at which time schools will be expected to show chronic truancy rates of no more than five percent.

According to the Ohio Department of Education, 70 percent of schools would have met the indicator if the new requirement had been in place this year.

Intervention efforts should reduce chronic absenteeism and improve school performance over time.

The State Board of Education's Accountability and Continuous Improvement Committee will likely vote on a formal resolution detailing the new indicator in April, with a vote by the full board expected in May.

School funding discussions already underway

Well in advance of the next state biennial budget bill, two House members – Rep. Bob Cupp (R-Lima) and Rep. John Patterson (D-Jefferson) – are beginning discussions on school funding through a workgroup comprised of lawmakers, school superintendents and school treasurers.

“It’s impossible to make any major changes to the school funding formula during the budget process, particularly in the House because it comes too early in the year,” Cupp, who chairs the House Finance subcommittee responsible for the state’s education budget, explained. “It’s so compressed time-wise and there are so many continuation-types of issues that have to be addressed.”

“Rep. Patterson and I both agreed that after the (last) budget, when we found it just impossible to do anything other than put some patches on it, that we need to spend more time to look at this and find some solutions,” Cupp continued.

The workgroup – comprised of about 35 members -- began meeting at the end of 2017 and has initially focused on determining what components go into providing a quality education before attempting to determine specific dollar amounts linked to the actual cost of educating students. Fairness and predictability are also important considerations.

“We know our current formula has caps and guarantees and it produces some unusual results at times,” Cupp said. “So how do you take all that out of the system and have one that’s much more predictable and stable?”

The workgroup, which meets monthly, plans to complete its work and submit an outline of its findings and recommendations to the General Assembly before the legislature’s summer recess.

Congrats!

Congratulations to Westside Academy, its board, and its treasurer, Barbara Henry, for receiving the Auditor of State Award!

Auditor of State Dave Yost gives the award to entities that file timely financial reports in accordance with GAAP, and receive “clean” audit reports based on financial audits that do not contain findings for recovery, material citations, material weaknesses, significant deficiencies, Single Audit findings or any questioned costs.



SCHOOL HOSTS IMPORTANT COMMUNITY EVENT

Horizon Science Academy (HSA) Dayton High School recently hosted a community meeting focused on the development of the Forest Park Area - an entertainment destination of the past that has declined in recent decades.

More than 80 public officials, development directors and coordinators, and residents of Harrison Township attended the event hosted by the school in partnership with Harrison Township, Montgomery County and CountyCorp. Participants offered diverse development ideas - from installing sidewalks to make walking easier and safer, to metro park improvements and a community center for children.

During its heyday - from the 1940s to the 1980s - the Forest Park Area featured an amusement park, and later a shopping mall. Breathing new life into the once prosperous area is an important priority HSA Dayton High School, which plans to host additional community meetings, is eager to support.



Legislative update

As previously reported, 2018 began with limited activity related to various education bills, but in recent weeks, a number of legislative proposals have been considered by the Senate Education and House Education and Career Readiness Committees.

The Senate Education Committee has held hearings on **H.B. 21**, previously passed by the full House of Representatives, which would require charter schools (rather than districts) to verify the resident district of its students on an annual basis and upon enrollment of each student; it also calls for monthly reviews. Auditor of State Dave Yost has provided testimony in support of the legislation.

Senate Bill 34 - which would generally require public schools to delay the beginning of each school year until after Labor Day (with an opt-out provision) - is also under consideration by the Senate Education Committee.

Hearings also continued on an education de-regulation bill (**S.B. 216**) before being voted out of the Senate and introduced for consideration in the House. The bill proposes a variety of significant changes related to: state achievement assessments (including permitting schools to administer the third-, fourth- and fifth-grade state assessments in a paper format or a combination of online and paper formats, and reinstating current law regarding the implementation and administration of the Kindergarten Readiness Assessment); reading improvement plans (requiring schools in which less than 80 percent of students earn a passing score on the third-grade English language arts exam to establish a reading improvement plan supported by reading specialists,); report cards (increasing the minimum number of students in a group for which student performance data must be reported from ten to 30); educator licenses (modifying grade bands to pre-K through five, four through nine, and seven through 12; eliminating the requirement that core subject area teachers be “highly qualified;” and, permitting a licensed teacher to teach a subject area or grade level for which the person is not licensed, with specifications); the state teacher evaluation system (requiring the Ohio Department of Education to revise the state framework for teacher evaluations based on the recommendations of the Educator Standards Board); and, College Credit Plus textbooks (requiring secondary schools to pay 100 percent of textbook costs for economically-disadvantaged students).



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REGIONAL SUCCESSBOUND CONFERENCES SCHEDULED

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The Ohio Department of Education and Ohio College Tech Prep are planning six regional SuccessBound conferences for schools, businesses and community leaders who want to begin forming partnerships to develop Ohio's next generation of workers.

These regional events are geared toward helping participants take first steps to engage with partners from different sectors to build career pathways, work-based learning experiences and other career preparation opportunities for students.

The conferences will offer participants opportunities to network with potential partners also interested in ensuring a strong workforce.

Access meeting dates, locations and registration details online at:

<http://education.ohio.gov/Topics/New-Skills-for-Youth/SuccessBound/SuccessBound-Regional-Conferences>



Legislative update — continued

Senate Bill 246, introduced by Senate Education Committee Chair Peggy Lehner (R-Kettering) and committee member Sen. Gayle Manning (R-N. Ridgeville) in December, is being considered by the Senate Finance Committee. The legislation focuses on the need to provide age-appropriate interventions and supports – rather than suspensions – to kindergarten through third-grade students. The bill clarifies that schools must implement a Positive Behavior Intervention and Supports (BPIS) framework and requires schools to report all out-of-school suspensions and expulsions of kindergarten through third-grade students, categorized by type of offense.

A number of hearings have also been held on various education bills by the House Education and Career Readiness Committee, including **H.B. 108** – also known as the “Informed Student Document Act.” The bill would require one-half unit of financial literacy in the high school curriculum, and calls for the chancellor of higher education to prepare an informed student document for each institution of higher education, which must include information on academics, cost of attendance, student success rates and admission data.



House deliberations also continue on **H.B. 318**, which would define the necessary qualifications and responsibilities of school resource officers (SRO). The House Education and Career Readiness Committee has accepted a substitute bill that includes provisions to narrow the definition of school resource officer and require all SRO to receiving training in the first year of being hired.

House Bill 360 – the Ohio Anti-Bullying and Hazing Act – also continues to move through the legislative process. The bill outlines a tiered approach to punishment for bullying, specifying that a public school student must be suspended for: up to ten days for the first offense of harassment, intimidation or bullying; and, up to 30 days for the second offense. It also calls for expulsion of offenders for up to 182 days for the third such offense in the same school year.

Hearings have also been held on **H.B. 428**, dubbed the “Ohio Student Religious Liberties Act of 2018,” with concerns raised by the American Civil Liberties Union (ACLU) of Ohio that the bill – which would allow students to engage in religious expression before, during and after school hours in the same manner and to the same extent as for secular activities – “ultimately gives religious speech more protection than secular speech.”

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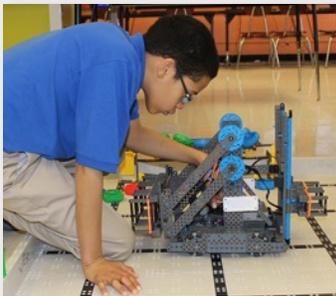
CONGRATULATIONS!

Not just one, but two Ohio charters managed by Concept Schools and sponsored by Buckeye Community Hope Foundation have earned honors for outstanding performances by their robotics teams!

Horizon Science Academy of Youngstown and Horizon Science Academy Lorain both competed against more than 30 teams in the Ohio State Championship event held in Marion, Ohio on Feb. 23. The two schools' teams have earned the right to compete against about 400 other schools in the 2018 VEX Robotics World Championship April 29 to May 1 in Louisville, Kentucky!

Students from Horizon Science Academy Lorain also recently competed in NEOSEF - the largest science fair in Northeast Ohio - earning one first-place gold medal, five second-place silver medals, two third-place bronze medals, and two honorable mentions.

Congratulations to the schools' students, teachers, staff and administrators - well done!



BCHF Sponsor Update – April 2018

Legislative update — continued

The House Education and Career Readiness Committee has also heard testimony on **H.B. 502**, which would require suicide awareness and prevention to be included as part of in-service staff training.

Hearings have also been held on **H.B. 512**, with testimony offered by a number of stakeholders in support of, and opposition to, Gov. John Kasich's proposal to create a new cabinet agency – the Department of Learning and Achievement – and to transfer to it most of the powers and duties of the State Board of Education, superintendent of public instruction, and Department of Education, and all the powers and duties of the chancellor of higher education, Department of Higher Education, and Governor's Office of Workforce Transformation.

House Speaker Cliff Rosenberger (R-Clarksville) said he plans to hold votes by the full House on H.B. 512 before the legislature recesses for the summer.

Statehouse photos courtesy of Capitol Square Review and Advisory Board

School honored by Character.org

Congratulations to Great Western Academy for being named a State School of Character – one of 63 state schools and five districts – by Character.org.

The organization is comprised of passionate people advocating for integrity, honesty, respect, and other core ethical values to be fused into education for the betterment of the nation. Each year, Character.org certifies schools and districts at the state level that demonstrate a dedicated focus on character development which has a true positive impact on academic achievement, student behavior and school climate.



Schools of Character – a three-year designation – serve as models of excellence within their states where they share character education best practices as part of a statewide network.

“It was a very extensive process in which we had to provide five years worth of academic, behavior and attendance data, as well as testimonials from the staff, students and parents,” explained Principal Kathryn Kountz. “We also had to show examples and provide descriptions on how we demonstrated the 11 principles of character.”

Great Western Academy will next be considered for Character.org's highest distinction: National School of Character. Congratulations to Kountz and her team!

MURAL ARTISTS SHARE TALENT

Art teacher Danielle Hoff and a group of twenty students from Mt. Vernon High School spent two days at the Buckeye Preparatory Academy in Columbus painting murals in the hallways as a service-learning project.

Buckeye Preparatory Academy students enjoyed watching the murals evolve during the two-day process and were frequently seen just standing, looking and smiling. The goal of the project was to brighten the hallways and to inspire the students through messages such as: Dream Big; Think Positive; Be Positive; and, Make Smart Choices.

The high school students enjoyed their contact with the younger Buckeye Prep students, even letting some of them help with the painting - and inspiring some to aspire to being artists one day.

The project was a great success -- helping the high schools students understand the needs of others and giving the younger students that warm feeling that comes from realizing that a group of artists cares about them.



Student earns honors in AG contest

Congratulations to Focus Learning Academy of Southeastern Columbus (Focus SE) student Mikelah Davie for earning recognition for her entry in Attorney General (AG) Mike DeWine's 2017 Take Action Video Contest for high school students.

High school students were asked to create a 60-second video about one of three cyber-security topics: smartphone privacy; social networking scams; or, creating strong passwords.

When Focus SE Director Joseph Paulauskas received news of the contest, he shared the information with the school's information technology teacher, Roger Kapes, who rolled it out to students as an internal contest with the best video from the school submitted as an entry into the AG's contest.

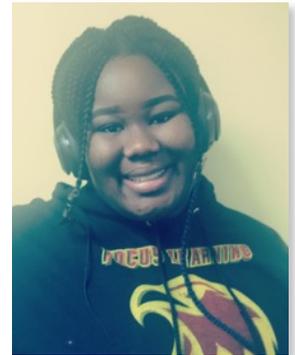
Mikelah's video – *4 tips to creating a strong password* – was among seven finalists recognized by the AG.

With plenty already on her plate, Mikelah, pregnant with her now one-month old son, knew the topic from classroom discussions and decided rather spur of the moment to participate.

The most challenging part of producing the video, which was the voice-over, was also the most enjoyable. "We struggled a bit, but I figured out how to make it work!," she said.

"The project made me anxious – competing with so many students across the state ... I was so surprised to be a finalist!," she continued. "But it was also exciting and boosted my confidence a lot."

"We're very proud of Mikelah," Paulauskas said. "She's a great student and I was happy to see her take the project seriously."



Students, staff celebrate Black History Month

Students and staff at Horizon Science Academy Lorain made the school's month-long "Faces Behind the Fight" Black History Month celebration educational and inspirational.

The celebration began with slide shows playing on TV screens throughout the school depicting historical figures from all racial backgrounds who contributed in some way to the advancement of civil rights of African Americans. Students were encouraged to enter

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OHIO SCHOOL SHOOTINGS: LESSONS LEARNED

In an effort to help peers across the state be better prepared, school administrators share their stories of experiencing a school shooting and the lessons learned from their personal experiences through an online video.

Sharing of key lessons - prepare, take action and recover - will hopefully help school administrators in developing and refining their emergency management plans.

Access the video online at: https://saferschools.ohio.gov/content/spring_2018#shooter-shooter-lessons-learned-from-ohios-school-



Black History Month -- continued

the Black History Month art, writing and spoken word contests, and were invited to watch movies about key historical figures every Wednesday in the school's auditorium. Some students dressed in costume as part of the Statues From the Past lunchtime activity with students correctly guessing which historical figures were represented entered into a raffle for prizes.

The school-wide Black History Program featured Distinguished Gentlemen of Spoken Word, a young male group that uses music and poetry to communicate powerful messages of dignity, strength and hope.

The month-long celebration ended with a Soul Food Celebration dinner for staff, students and their families - sharing a meal together to honor those who have sacrificed so much for the advancement of the nation and in celebration of all the students' accomplishments.

Students rally for increased gun control

About 250 students from Cincinnati, Cleveland and Columbus descended on the Statehouse on National School Walkout Day (March 14) to encourage legislators to enact new laws to reduce gun violence. The group - Lobbying for a Safer Tomorrow - seeks actions to ban the sale of assault rifles and bump stocks, and to keep guns out of the hands of individuals with mental health problems.

In addition to meeting with about two-dozen members of the Ohio Senate and House, the group's plans included a rally outside the Senate chamber as session - which was ultimately cancelled due to the Senate president's illness - was scheduled to begin.

The students voiced support for S.B. 150 (to prohibit individuals charged with domestic violence from having guns), S.B. 219 (to ban bump stocks and assault weapons) and S.B. 260 (to create a firearms database) -- and opposition to S.B. 180 and H.B. 229 (so-called Stand Your Ground legislation) and S.B. 208 and H.B. 201 (to expand concealed carry laws).

Across the country - including here in Ohio - thousands of students and teachers walked out of their classrooms as part of the #Enough! National School Walkout, organized by Women's March Youth Empower.



Focus Learning Academy students respectfully, calmly and peacefully demonstrated their right to protest gun violence during National School Walkout Day.

SAFER SCHOOLS OHIO ADDRESSES CYBER THREATS

Last fall, a cybercriminal group known as The Dark Overlord (TDO) targeted dozens of schools, threatening violence and releasing personal information of student and school personnel unless a ransom was paid. Numerous schools were shut down for one to three days while law enforcement investigated. It was determined that the group operates from overseas and that the threats were not credible. Safer Schools Ohio recommends that schools take these steps to help mitigate further threats by TDO:

- ◆ Conduct audits to ensure patches are issued for any vulnerabilities within school computer systems
- ◆ Install and maintain firewalls and antivirus software to help mitigate malware from access to the network
- ◆ Immediately report to local law enforcement any suspicious activity detected on computer networks
- ◆ Never pay a ransom demand - there is no guarantee the information will be returned to its original state
- ◆ Train school staff, students and parents to recognize phishing emails containing malicious documents or links that could download malware that would steal personally identifiable information
- ◆ Ensure that passwords are complex, contain uppercase and lowercase letters, numbers and symbols unique to each site accessed and implement two-factor authentication when possible.

UPCOMING PROFESSIONAL DEVELOPMENT EVENTS

BCHF ANNOUNCES ITS FIRST ONLINE COURSE – *Participate from any location!*

BCHF's Accountability and School Improvement team is pleased to announce its first online professional development seminar! The popular **Effective Lesson Design** workshop will be offered electronically via Moodle courseware. Please register prior to the start date of April 9.

Effective Lesson Design will focus on a research-based model for lesson development that results in student learning. It emphasizes the importance of an effective hook, chunked modeling and demonstrating, guided practice, and independent practice. Participants will learn about student practice opportunities, in formats more effective than worksheets, and the importance of both formative and summative assessments. The workshop is job-embedded. Participants will choose a standard that they will be teaching in May and develop a lesson plan for that standard over the course of the training. The training includes a variety of activities, as well as interaction with other participants. Dates of the seminar are: April 9 through May 6, 2018 (10 hours, equivalent to 1.0 CEU).

Registration is available at: buckeyehope.moodlecloud.com

Questions? Please email Dr. Mike Grote at:

mgrote@buckeyehope.org

SURVIVAL SPANISH II – April 18, Columbus

Learn some valuable lessons about culture and improve your communication with students! In response to overwhelming success of Survival Spanish I, our facilitator, Jay Poroda will lead us through more Spanish vocabulary and conversational exchanges. This will build upon the vocabulary presented at the March 14 seminar. However, if you did not attend the first session, we can send you a vocabulary list and practice game to get you up to speed (send your request to amccarty@buckeyehope.org).

Join us from 10 a.m. to 3 p.m. (lunch included) for a fun and worthwhile session! Please register through the following link:

<https://register.eventarc.com/40430/survival-spanish-ii>

R & R FOR TEACHERS OF ENGLISH LEARNERS: Review & Renew Professional Development – May 16, Columbus (rescheduled date!)

This workshop is intended for teachers of English learners (TELEs) who are in school leadership roles or roles in which they support the rest of the teaching faculty. The focus of the seminar is effective planning and implementation of quality services for English learners.

Ask yourself these questions: Does your ESL staff need resources? Or perhaps training to support general education/content teachers? Are you in charge of, or collaborating with, teachers who have ELEs in inclusive classes? Are you realizing that your role is evolving into coaching? What are your challenges? What are your successes? Join ESL Consultant Bev Good to respond to these and other questions about effective services.

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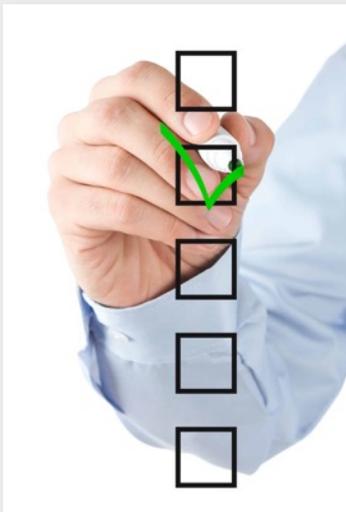
COMPLIANCE UPDATE

Compliance progress reports

Compliance progress reports were generated on March 31 reflecting school progress on compliance items due through February 28. The reports will be reviewed at April board meetings during the sponsor update, or e-mailed to boards that do not meet in April.

Food service licenses

Food service licenses expired statewide on March 1, 2017. Updated licenses for the school and vendor/caterer should be uploaded to SharePoint and posted in your buildings.



UPCOMING PROFESSIONAL DEVELOPMENT EVENTS — *continued*

R & R FOR TEACHERS OF ENGLISH LEARNERS — *continued*

The workshop, from 10 a.m. to 3 p.m., will be facilitated by Dr. Beverly Good and will be “tailor-made” to your needs. Upon registration, she will contact you by email to ask for a brief description of your successes, challenges, and specific knowledge and skills that would support your efforts to help teachers. To register and receive specific location information, please go to the following link: <https://register.eventarc.com/40174/r-and-r-for-teachers-of-english-learners>

ADVOCACY FOR DROPOUT RECOVERY PROGRAMS: SPRING 2018 DROPOUT RECOVERY ROUNDTABLE – April 23, Columbus (*rescheduled date!*)

Learn how to best advocate for your dropout recovery program’s accountability and needs. In consideration of the proposed changes to the dropout recovery program report card by the Ohio Department of Education, this session will discuss communications and other strategies to effectively advocate for your program. The Dropout Recovery Roundtables are a special time devoted to discussion of dropout programs and best practices for supporting the most at-risk youth. This session will be held from 4 to 6 p.m. with a light dinner included. Register online at: <https://register.eventarc.com/38755/drop-out-recovery-roundtable-spring>

SPEAKING OUT WITH STUDENTS – *Offered regionally!*

Effective instruction requires active engagement of learners. Pre-planned opportunities for oral discourse are a very important means of engaging your students. This workshop will help you set up and facilitate active class discussions that get all students participating and learning! Four strategies will be explored and practiced to help you create more dialogue and discourse in instruction: four-corners activity; inner/outer circles/value lines; full-class discussion; and, persistent questions. The seminar will be offered from 10 a.m. to 3 p.m. (light lunch included) on the following dates:

Cleveland – May 10

<https://register.eventarc.com/39703/speaking-out-with-students-cleveland>

Columbus – May 17

<https://register.eventarc.com/39704/speaking-out-with-students-columbus>

LEADERSHIP SUMMIT – *June 14 & 15, Columbus*

Space is already filling up for our annual School Leadership Summit! The Summit brings together leaders from almost 50 charter schools across Ohio for an intensive, productive two-day event focused on improving student performance. Reserve your spot at the Summit using the following link:

<https://register.eventarc.com/38756/leadership-summit>

SCHOOL IMPROVEMENT

Math really is fun (if it is taught like it is)

By Michael Grote, Ph.D., School Improvement Representative

Buckeye Community Hope Foundation recently sponsored a workshop in multiple locations around the state entitled *Math Really Is Fun!* Allow me to share an allegory that I shared in the workshop that was written by Field Award Winner Paul Lockhart (The Field Award is the equivalent of the Nobel Prize, since, sadly, there is no Noble prize in mathematics).

Imagine that you fell asleep one night and had a rather odd nightmare. You dream that the state legislature mandated music instruction at every grade level to help students become more competitive in an increasingly sound-filled world. The “Back-to-Basics” crowd immediately postulated that students must be taught the language of music prior to having any opportunity to actually make any music. Both primary and secondary schools began training students in the basics. Students describe music class as a place where they get out their staff paper and copy notes (music notes!). Then students receive another opportunity to copy notes during independent practice. As students must be prepared to pass the standardized music exams, schools develop courses in scales and modes, meter, harmony, and counterpoint. A parent complains that her son refuses to do his music homework. Instead, he hums to himself and stares out the window. Suddenly you wake up from this nightmare and think: “How could anyone reduce such a beautiful art form to something so mindless and trivial!”

Yet, Lockhart claims, this is essentially what we have done to mathematics curriculum in most schools. In fact, Lockhart says, “If I had to design a system to destroy a child’s natural curiosity and love of pattern making, I could think of nothing better than our current system.”

Indeed, we all understand that the ending of a story is hardly the most significant part of the experience of reading a novel, but we tend to give students “the ending” without the unfolding of the story that produced the ending. The late Ursula Le Guin stated

in a 1960’s novel: “It is good to have an end to journey towards; but it is the journey that matters, in the end.” The rapper, Drake, put it even more directly: “Sometimes it’s the journey that teaches you a lot about your destination.”

What does a math class look like that develops a real joy in learning mathematics along with developing real understanding of the mathematical concepts? The first key feature is an opportunity to visualize the mathematics. A study by Siegler & Ramani (2008) found that four, fifteen-minute sessions with a number line could completely eliminate the difference between low-income and middle-income students entering

school: the power of the visualization of number sense! Our brain stores abstract ideas and visual information in separate areas of the brain, but true understanding requires connections between both of these areas. Sadly, most curricula have very little to help students develop visual understanding of math.

Memorization is a hallmark of poorly performing math students. Students who are competent have strong number sense and view numbers flexibly—a point of view not developed by most textbooks. (Gray, E., & Tall, D. 1994)

The second key feature is play. After visualizing the ideas, students are engaged in structured play with the ideas. This could be a game developed for this purpose, but a key is allowing students to work together. Former Stanford professor Phil Triesman first stumbled upon the importance of students working together productively in a well-known intervention he did that prevented African-American students from failing out of math Ph.D. programs simply by teaching them to work together in study groups (in fact, his group-trained minority students outperformed Asian-Americans, the previously highest scoring group).

“If I had to design a system to destroy a child’s natural curiosity and love of pattern making, I could think of nothing better than our current system.”

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Math really is fun — continued

Finally, students investigate the concept with a low floor/high ceiling task. Such tasks, as the name implies, are accessible to students at any mathematical level, but have implications that can, at the same time, challenge the best students. This is differentiation at its finest!

Does this approach actually work? Jo Boaler of Stanford University held a summer workshop for struggling middle school math students (from high-poverty backgrounds). After only 16, two-hour sessions students improved their math achievement scores by the equivalent of 1.6 years of growth. The sessions focused on the visualize, play, investigate sequence above and improved students' self-assessment of their math abilities, as well as their achievement.

Although it isn't possible in a short article to provide the specific examples for each of the above stages as has been done in the full day workshop, we encourage you to contact BCHF (by sending an email to: mgrote@buckeyehope.org) about a workshop on site where we could share, in a hands-on environment, what this looks like in a classroom. (Hint: it does not look like kids sitting in rows

completing worksheets or book problems.) To share one example probably requires about two hours. We look forward to hearing from you if your math scores need improvement.

Sources

- ♦ Boaler, Jo (2016). *Mathematical Mindsets*. Jossey-Bass, San Francisco.
- ♦ Boaler, Munson & Williams (2017). *Mindset Mathematics: Grade 4*. Jossey-Bass.
- ♦ Gray, E., & Tall, D. (1994) Duality, Ambiguity, and Flexibility: A perceptual view of arithmetic. *Journal for Research in Mathematics Education*, 25(2), 116-140.
- ♦ Kerslake, D. (1986) *Fractions: Children's strategies and errors. A report of the Strategies and Errors in Secondary Mathematics Project*. Windsor, England: NFER-Nelson.
- ♦ Lockhart, Paul. A Mathematician's Lament (2002). a 25-page essay originally circulated on the Internet. (*can still be located by searching on the Internet*)
- ♦ Siegler & Ramani (2008). *Playing linear numerical board games promotes low income children's numerical development*. *Developmental Science*, 11(5), 655-661.

BUCKEYE COMMUNITY HOPE FOUNDATION
3021 East Dublin-Granville Rd; Columbus OH 43231
(614) 942-2002 www.buckeyehope.org

