POWAY UNIFIED SCHOOL DISTRICT

Final Recommendations to the PUSD Board

From the PUSD Educational Technology Advisory Committee (ETAC)

May 16, 2016

Final Recommendations to the PUSD Board from the PUSD Educational Technology Advisory Committee (ETAC)

May 16, 2016

The PUSD Educational Technology Advisory Committee (ETAC) is a PUSD Board-appointed committee of community volunteers who met from May 2015, where over 60 topics were identified (see Appendix), through April 2016. The committee refined its focus to three key topics (Leadership, Health and Safety, and Technology Planning) to discuss, develop, vote and approve the following ten recommendations.

Leadership:

1. The District should present a clear vision of the appropriate role for technology in education.

All committee members present voted in favor: Joe Long, Sunny Rickard, Gabriela Dow, Jessica Xu and Noah Li.

2. The District should fund Physical Education, Arts and Music at a level that is at least comparable to the funding for technology.

Joe Long abstained. All other committee members present voted in favor: Sunny Rickard, Gabriela Dow, Jessica Xu and Noah Li.

3. The PUSD Board and Superintendent should finalize the District's IT Organizational Structure with clearly defined roles and position descriptions to ensure accountability.

All committee members present voted in favor: Brian Senese, Dena Glynn, Gabriela Dow, Jessica Xu and Noah Li.

Health and Safety:

1. The District should offer students a paper-based curriculum as an alternative option to instruction based on computers and mobile devices.

Joe Long voted no. All other committee members present voted in favor: Sunny Rickard, Gabriela Dow, Jessica Xu and Noah Li.

2. The District should address the health and safety risks associated with digital devices, such as internet addiction, vision health, radiation, cybersecurity and privacy.

All committee members present voted in favor: Joe Long, Sunny Rickard, Gabriela Dow, Jessica Xu and Noah Li.

3. The District should only introduce technologies that have been adequately studied through independent peer-reviewed research that demonstrates the new technology will not pose a health or privacy risk and will measurably improve student achievements.

All committee members present voted in favor: Joe Long, Sunny Rickard, Gabriela Dow, Jessica Xu and Noah Li.

Technology Planning:

1. The District must finalize district-wide TK-12 Technology Standards by the beginning of the 2016-2017 school year, present those standards to the community, and work to finalize an overall PUSD Technology Plan as soon as possible.

All committee members present voted in favor: Brian Senese, Dena Glynn, Gabriela Dow, Jessica Xu and Noah Li.

2. The District should provide job-embedded professional development via expanded TOSAs for teachers to be successful in implementing the TK-12 Technology Standards into the Common Core curriculum. This professional development should address the unique needs of students receiving special education services and/or using assisted technology.

All committee members present voted in favor: Brian Senese, Dena Glynn, Gabriela Dow, Jessica Xu and Noah Li.

3. The District's use of technology should emphasize creation, such as coding, tinkering, design thinking, project-based learning, robotics and experiential model lessons to support TK-12 Technology Standards.

All committee members present voted in favor: Brian Senese, Dena Glynn, Gabriela Dow, Jessica Xu and Noah Li.

4. The District should develop or update a policy that addresses Digital Citizenship so that students are not only competent in technology but also understand, along with parents and teachers, the safe and responsible use of these tools.

All committee members present voted in favor: Brian Senese, Dena Glynn, Gabriela Dow, Jessica Xu and Noah Li.

2015-2016 ETAC Members:

Adalia Lavado, Committee Chair – *member since August 2015, attended 5 meetings*

Adalia Lavado is a K-12 educator and school administrator with 26 years of experience. She has served children and families of Poway Unified, Vista Unified and San Diego Unified school districts as a teacher, assistant principal, principal and GATE program manager. Her daughter attended PUSD schools since kindergarten and is a graduate of RBHS, Class of 2015. Adalia is passionate about working with teachers, students, their families, and school communities to ensure success for all youth in the 21st century through personalized learning experiences and technology integration in teaching and learning. In addition to serving on the Poway Board of Education Educational Technology Advisory Committee, Adalia is a member of the Poway Unified Technology and Learning Steering committee and the Community Alliance for Youth Success.

Dr. Jing "Jessica" Xu, Committee Vice Chair – *member since May 2015, attended 10 meetings*

Jessica Xu is mother of two PUSD students and a long-time resident in San Diego. Among her many community activities, she serves on the board of Rancho Penasquitos Town Council, PUSD Educational Technology Advisory Committee, and Yale Alumni Schools Committee. Dr. Xu co-founded PUSD Parents Group in 2015 and serves as the founding president. She is a member of Parent Teacher Association and volunteers at her children's classes. Professionally Dr. Xu is a management consultant with over 14 years of experience in biotech and pharmaceutical industries. Earlier in her career, she had more than a decade of research and development experience in life science prior to transition to management. Dr. Xu received her doctorate degree in Molecular Biophysics and Biochemistry from Yale University and conducted her postdoctoral research at the Scripps Research Institute.

Gabriela Dow, Committee Secretary – *member since May 2015, attended 10 meetings*

Gabriela Dow is mother to two PUSD students, owner of Mora Dow Consulting, partner with Silicon Valley-based VC tech accelerator Plug and Play, member of the board for the Valley Elementary Educational Foundation and member of the Industry Advisory Board for the San Diego City College School of Business and Accounting. Gabriela's 20+ years of experience include launching tech startups, working as a journalist and managing public agency programs. She worked press advance for a presidential campaign, at the White House Office of Public Liaison and as an Intergovernmental Affairs Officer for a U.S. Governor in Washington D.C. She worked at two CNN bureaus, KCBS News and was elected President and VP during service on the Board of Directors for San Diego Habitat for Humanity from 1999-2005. A native of Guadalajara, Mexico she is a graduate of UCLA.

Dr. Ning "Noah" Li – *member since May 2015, attended 9 meetings*

Noah Li is father of a PUSD student and a long-time resident in San Diego. He is a member of Parent Teacher Association and also teaches children Sunday school for last 10 years. As the Director of Portfolio with HUYA Bioscience, Dr. Li manages the sourcing of therapeutic opportunities and is in charge of day-to-day operations of the HUYA portfolio database. He has over 15 years of biomedical research and development, management and corporate partnering experience. As the principal investigator, he was awarded two SBIR grants of over 3 million dollars from the National Institute of Health. Trained as a neurobiologist, he holds a Ph.D. from Baylor College of Medicine, Houston and completed his postdoctoral research at Moran Eye Center and Eccles Institute of Human Genetics, University of Utah.

Brian Senese – *member since May 2015, attended 8 meetings*

Brian Senese is an Innovative Applications Engineer with OpenSynergy, and previously SAP and Sybase iAnywhere, whose expertise is in effectively articulating complex technology and product positioning. He has led the successful introduction of new products from concept through release to increase revenue streams, charted the direction of existing product lines, and determined strategy for entering new markets and generating forward looking roadmaps to synchronize internal development with market requirements. His Technical Specialties include: Embedded software and protocols, Development in C on embedded Linux and microcontrollers (ARM, 8051, PIC), Hardware development (LCD display drivers, motor control, control and A/D interfacing), and with the full product development cycle.

Dena Glynn – *member since May 2015, attended 8 meetings*

Dena Glynn is a twenty-year veteran of PUSD and one of the top ten teachers in the County of San Diego. She has worked as a 4th/5th grade teacher in a 1:1 environment for five years. She is an Apple Distinguished, Google Certified, Renaissance Distinguished Educator, DEN Certified Teacher, and PBS Digital Learning Innovator. Dena teaches a 4/5 multi-age class where all students have an iPad, which is used as a way to connect within the pages of a book, to share and engage classrooms across the country to discuss the reading, as well as allowing students in math and social studies to show their thinking through screencasting apps, to writing scripts and creating a movie for others to learn from. Dena is also a parent of two children in Poway Unified.

Joe Long – *member since December 2015, attended 4 meetings*

Joe Long currently serves as a commissioner of the San Diego County Property Assessment Appeals Board, a real estate instructor at Kaplan Real Estate School, and an instructor of a property tax class at Poway Adult School.

Chenyang "Sunny" Rickard – *member since February 2016, attended 3 meetings*

Sunny Rickard is an attorney devoted to serving clients in Estate Planning and Immigration. Before becoming an attorney, she worked as a journalist for the largest Chinese Newspaper in North America. She had worked extensively on Immigration issues and has extensive knowledge and experience at all aspects of immigration law. She believes to study in depth every issue is crucial to a successful immigration petition and takes immigration issues personally, committed to helping her clients every step the way to green card and citizenship. Sunny is licensed in the State of California and is fluent in Chinese (mandarin).

Scott Himelstein – *member since May 2015, attended 2 meetings*

Scott Himelstein is the Director of the University of San Diego's Center for Education Policy and Law (CEPAL) and Mobile Technology Learning Center (MTLC). He is a former Deputy Secretary of Education and later Acting Secretary of Education for the State of California, serving as chief policy advisor to Governor Schwarzenegger on K-12 and higher education. In 2008, Himelstein was appointed by the Governor to the California Community College Board of Governors where he served as its President from 2011 to 2013. Prior to his appointments, he served as Chairman and CEO of the National Even Start Association, President of the William D. Lynch Foundation for Children, and Chairman and CEO of San Diego Reads. He is also a former instructor of Law and Politics of Education Policy Development in the USD School of Leadership and Education Sciences.

References:

Leadership

1. PUSD Educational Technology Plan 2011-2016

2. Consultant Bob Moore's 2015 analysis of PUSD Technology and Superintendent's redlined edits

3. July15, 2015 memo from the Superintendent to PUSD Board regarding IT and management

4. Three draft plans dated Oct 16, 2015 from PUSD IT department:
   a. IT Leadership Strategy
   b. Proposed Tech and Learning Process
   c. PUSD K-12 Technology Scope and Sequence

5. Feb 2016 SDUT reports on high-level PUSD turnover:
http://www.sandiegouniontribune.com/news/2016/feb/16/poway-departures-shakeup-schools-racism/

6. PUSD 2014-2015 annual audits:
http://www2.powayusd.com/depts/bss/finance/PDF_files/2014-15/2014-15AuditReport-PUSD.pdf

7. Educational technology plans from following six school districts:
   a. Anchorage School District Educational Technology Plan 2014-2017
   b. Fullerton School District Technology Plan 2014-2017
   c. Oakland Unified School District Technology Plan 2013-2018
   d. Palo Alto Unified School District E-Rate Technology Plan July 1, 2014 – June 30, 2017
   e. The School District of Palm Beach County Technology Plan 2014-2016
   f. San Ramon Valley Unified School District Technology Plan 2014-2017

Health and Safety

I. Global experiments in digital initiatives

1. The LA School iPad Scandal
http://www.wired.com/2015/05/los-angeles-edtech/

2. Computers 'do not improve' pupil results, says OECD (Organization for Economic Cooperation and Development)
http://www.bbc.com/news/business-34174796

3. From OECD (Organization for Economic Cooperation and Development) website:
http://www.oecd.org/education/new-approach-needed-to-deliver-on-technologys-potential-in-schools.htm

Overall, students who use computers moderately at school tend to have somewhat better learning outcomes than students who use computers rarely. But students who use computers very frequently at school do much worse, even after accounting for social background and student demographics.

4. South Korea's digital textbook revolution took a break in 2012
https://www.washingtonpost.com/world/asia_pacific/in-south-korean-classrooms-digital-textbook-revolution-meets-some-resistance/2012/03/21/gIQAxiNGYS_story.html

II. Global Myopia Epidemic among Children and Teens

5. The myopia boom
http://www.nature.com/news/the-myopia-boom-1.17120

Other parts of the world have also seen a dramatic increase in the condition, which now affects **around half of young adults in the United States and Europe — double the prevalence of half a century ago**. By some estimates, one-third of the world's population — 2.5 billion people — could be affected by short-sightedness by the end of this decade. "We are going down the path of having a myopia epidemic," says Padmaja Sankaridurg, head of the myopia programme at the Brien Holden Vision Institute in Sydney, Australia.

6. The simple, free solution to Asia's myopia epidemics
http://www.cnn.com/2015/04/05/asia/myopia-east-asia/

"The problem is teachers and parents are probably not going to let kids get more sunlight," said Dr. Nathan Congdon, professor at the Zhongshan Ophthalmic Center at the Sun Yat Sen University in China. "There's a limit to how many hours kids can go outside."

7. The Atlantic: In 2050, Half the World Will Be Nearsighted
http://www.theatlantic.com/health/archive/2016/02/in-2050-half-the-world-will-be-nearsighted/468606/

Researchers expect eyesight to worsen across the globe thanks to more screens and less time outdoors.

8. Nearsightedness and the 20-20-20 rule
https://www.yahoo.com/health/is-nearsightedness-an-epidemic-104166409157.html

9. New eye clinic to target youth amid epidemic of nearsightedness
http://news.berkeley.edu/2013/08/28/myopia-control-clinic/

10. Computer Vision Syndrome (American Optometric Association)
http://www.aoa.org/patients-and-public/caring-for-your-vision/protecting-your-vision/computer-vision-syndrome?sso=y

11. Myopia (American Optometric Association)
http://www.aoa.org/patients-and-public/eye-and-vision-problems/glossary-of-eye-and-vision-conditions/myopia?sso=y

12. Myopia - Epidemiology in the US
https://en.wikipedia.org/wiki/Myopia#North_America_.28United_States.29 /

13. Myopia prevalence in 19-year-old in South Korea over 95% in a 2010 survey
http://www.ncbi.nlm.nih.gov/pubmed/22836765

14. Eyestrain Report
https://www.thevisioncouncil.org/sites/default/files/VC_DigitalEyeStrain_Report2015.pdf

The number with vision loss from high myopia is expected to increase seven-fold from 2000 to 2050, with myopia to become a leading cause of permanent blindness worldwide.

15. Blue light has a dark side
http://www.health.harvard.edu/staying-healthy/blue-light-has-a-dark-side

III. Internet Addiction among Children and Teens

16. Screen Addiction Is Taking a Toll on Children
http://well.blogs.nytimes.com/2015/07/06/screen-addiction-is-taking-a-toll-on-children/?action=click&contentCollection=Tennis&module=MostEmailed&version=Full&region=Marginalia&src=me&pgtype=article

17. Web Junkie (PBS series)
http://www.pbs.org/pov/webjunkie/

18. Internet Addiction in the US
http://www.washingtonpost.com/blogs/answer-sheet/post/south-koreas-surprising-stand-down-on-digital-textbooks/2012/03/25/gIQA6djvbS_blog.html

South Korean officials have suddenly become concerned that young people are too dependent on technological gadgets, pointing to a government survey that showed that one in 12 students between ages 5 and 9 are addicted to the Internet. **The American Academy of Pediatrics has reported a similar problem in the United States**.

19. Digital Dementia
http://www.seattletimes.com/seattle-news/health/lsquodigital-dementiarsquo-for-our-screen-addicted-kids/

Seattle Times report on Manfred Spitzer's 2012 book "Digital Dementia: What We and Our Children Are Doing to our Minds".

20. Digital Dementia
http://www.amazon.com/Digitale-Demenz-Manfred-Spitzer/dp/3426276038

Dr. Manfred Spitzer is Medical Director of the Psychiatric University Hospital in Ulm, Germany. Above is his book on Amazon.

IV. Hearing Loss from Earbuds

21. How ear buds damage hearing
http://m.kidshealth.org/teen/safety/safebasics/earbuds.html

Technology Planning

1. Educational technology plans from following school districts:
    a. Anchorage School District Educational Technology Plan 2014-2017
    b. Fullerton School District Technology Plan 2014-2017
    c. Oakland Unified School District Technology Plan   2013-2018
    d. Palo Alto Unified School District E-Rate Technology Plan July 1, 2014 – June 30, 2017
    e. The School District of Palm Beach County Technology Plan 2014-2016
    f. San Ramon Valley Unified School District Technology Plan 2014-2017

2. Future Ready Learning: Reimagining the Role of Technology in Education --2016

National Educational Technology Plan, January 2016, U.S. Dept. of Education

http://tech.ed.gov/netp/

"...schools need to support teachers in accessing needed technology and in learning how to use it effectively. Although research indicates that teachers have the biggest impact on learning out of all other school-level factors we cannot expect individual educators to assume full responsibility for bringing technology-based learning experiences into schools. **They need continuous, just-in-time support that includes professional development, mentoring and informal collaborations."** National Educational Technology Plan, pg.2

3. Future Ready - U.S. Dept. of Education, Office of Educational Technology website
http://tech.ed.gov/futureready/

Equity of access:

"If the technology revolution only happens for families that already have money and education, then it's not really a revolution." Arne Duncan, U.S. Secretary of Education

"...all involved in American education <must> ensure equity of access to transformational learning experiences enabled by technology." National Educational Technology Plan, pg.2

4. ISTE-International Society for Technology in Education Global Standards for Learning, Teaching and Leading in the Digital Age
http://www.iste.org/standards/iste-standards

Standards for Teachers
1) Facilitate and inspire learning and creativity
   a. Promote, support and model creative thinking and inventiveness
2) Design and develop digital age learning experiences and assessments
3) Model digital age work and learning
4) Promote and model digital citizenship and responsibility
5) Engage in professional growth and leadership

Standards for Administrators
1) Visionary Leadership
2) Digital Age Learning Culture
3) Excellence in Professional Practice
4) Systemic Improvement
5) Digital Citizenship
   a. **Ensure equitable access to appropriate digital tools and resources to meet the needs of all learners.**

Appendix:

PUSD ETAC May 11, 2015

Brainstorming Topics to Consider

A. Global Best Practices

1. Personalization
2. Check results of iPad / tech experiments in South Korea
3. What has been working in existing program? What is not working?
4. What are the advantages we get from the technology? What grades of students are most benefited?

B. Learning Standards

1. Creativity
2. Standards for tech to drive 21st century learning
3. The technology limit and coaching problems we have encountered so far.
4. Set technology standards.
5. Student academic profile.
6. Curriculum CTE
7. Define basic competencies for students and for teachers (like keyboarding and specific things each must know at a basic level)
8. Standards for technology at each grade level.
9. Pre K-12 program of technology experiences (i.e. 1st grader across the district same regardless of school site)
10. Real-world prep for future workforce by modernizing field trips and exposure to local tech companies and startups so that students understand real career options

C. Leadership

1. Relationship between Board/Staff/Unions
2. The kids need love and communication, in addition to tech

D. Support and funding for teachers and equipment

1. Tech support for the devices and infrastructure (wifi, security) at each school to keep the teachers focused on teaching vs trying to trouble-shoot or get the tech device to work.
2. Target funding streams
3. The financial affordability of the new technologies

E. Digital Citizenship

1. Policy and teaching of digital safety
2. Curriculum for digital citizenship
3. Technology and character
4. Dangerous and disturbing content online (violence, war, porn)

F. Health and Safety

1. Safe learning environment for kids first and foremost
2. Does research support the claims of health concerns?
3. Age-appropriate implementation given health of the kids (top priority)
4. Strictly voluntary-based enrollment, let parents decide whether the tech is applicable to their kids
5. Eye health and technology use
6. Address that tech is changing kids' minds (the book "The Shallows")
7. Potential health concerns due to radiation from wifi and devices—what are the cancer risks to students and teachers?
8. The connection between new technology implementation and near-sighted kids and other health concerns.

G. District Vision and Communication (Technology Plan)

1. Has there been an external review of the District's overall technology plan?
2. Unify a vision for our district to move away from site-based decisions
3. Create a communications plan for parents – explain the why?
4. How to utilize learning with technology using SAMR integration effectively
5. Clear role and plan to roll out tech at a new site
6. Use of online learning tools (Kahn Academy)
7. Class projects to build something. Design work, CAD.
8. Internship programs for high school students in tech companies
9. Demonstrate theory of math and physics with practical use
10. After school clubs to design things and robotics
11. Some element of guidance, standards and coordination (idea and experience sharing) among school foundations or individual tech committees or champions at each school
12. How the new technologies will help on kids' innovation and do harm to kids' creativeness
13. Bring in embedded computers and have students "do things"
14. Need mentoring for teachers
15. Policies and equality for all students
16. Laws to implement the new technology across the district
17. The policy before implementing a specific application at the district (how we determine and review applications)
18. Policy to monitor implementation of educational technology

H. Teacher Training

1. Ongoing meaningful training for staff in implementing technology
2. "Tech Native" teachers partnering and truly helping "Tech Immigrant" teachers. It is not an option to not continually learn if you are a teacher.
3. Basic competencies for teachers and students.
4. Support for teachers to leverage tech for student learning.
5. Support for teachers to collaborate best practices for tech innovation across the district
6. Do teachers have sufficient support (professional development) to deliver content digitally?

I. Student Access

1. Must keep the low-income students in mind
2. Availability of resources (tech devices across 39 sites)
3. Availability of devices
4. Access equality.