

Wayland Public Schools

FY16 System-Wide Goal ACE Progress Report: Technology Gains STEAM

System-Wide Goal: To increasingly employ instructional technology for the purpose of improving student proficiency with core content knowledge and skills, while building technology related competencies – and to do so in conjunction with developing a comprehensive approach to science, technology, engineering, arts, and mathematics education.

High School Strategic Initiatives:

- Develop a draft comprehensive three-year technology plan, focusing on professional development for staff and the articulation of a shared technology vision.
- Expand computer science course offerings.
- Develop WHS standards for digital citizenship and literacy.

A Accomplishments	C Challenges	E Exemplar
<ul style="list-style-type: none"> ● The Computer Science offerings continue to expand with two new courses for the 2016-17 school year, <i>AP Computer Science Principles</i> and <i>Honors Swift Programming for OSX</i>. Staffing allocated to Computer Science will increase from 1.0 to 1.4 FTE in 2016-17. ● A faculty subcommittee on Digital Literacy explored the charge, “Develop a statement of philosophy or recommendation about digital literacy that identifies how and why students would learn these expectations.” Working with the proposed Digital Literacy and Computer Science standards from DESE, this subcommittee developed a recommendation about the attainment of digital literacy skills for all WHS students and how/where they would develop these skills during their four years of high school. We will plan implementation of this recommendation in 2016-17. ● A faculty subcommittee on itsLearning developed a recommendation that by the fall 	<ul style="list-style-type: none"> ● Because the standards for Digital Literacy and Computer Science (DESE) were not released until recently, we were not able to use the year as anticipated to develop a draft of a comprehensive three-year technology plan. ● As has been true in years past, offering professional development for teachers around the area of technology use and integration is difficult because teachers are in different places with their skill sets. Next year’s PD plan—where four Wednesdays will be devoted to the sharing of new practices by “expert” colleagues—will help meet teachers where they are. ● While we are extremely proud of the growth of our Computer Science program, sustaining this growth in staffing in order to meet the needs and growing interests of our students will be a challenge moving forward. ● Providing all students a common experience and set of expectations around Digital Literacy 	<p>There is increased interest in Computer Science, as was indicated by a group of students and teachers who spoke eloquently at a School Committee meeting about the vitality of the Computer Science program at WHS and its place in 21st Century Learning. During our course selection process this spring, strong sign-up numbers merited a 0.4 increase in the Computer Science offerings (24 students requested the new AP course [Principles], 43 requested AP Computer Science, and 49 students requested the Python Programming course).</p>

<p>of 2017, all WHS teachers will have a web presence. Professional development planning is underway for 2016-17 that will equip teachers with more skills to integrate technology into their classroom and to develop a web presence that helps student organization and learning.</p> <ul style="list-style-type: none">● In partnership with WaylandCares, speaker Katie Greer came to WHS in October 2015 to discuss safe technology use with all students and held a parent evening as well. Students discussed her main themes in Advisory following her visit.● Once again, comprehensive surveys were given to all teachers and students about issues related to technology, results of which will be analyzed by the high school Technology Committee and will shape future goals.● The 9th grade compulsory course “Information Literacy” revolved around a common theme of Digital Literacy and Citizenship. Students presented their findings in an exhibition night for the community in January.● Technology integration continues to be a common professional goal for our teachers during the goal-setting process, including use of Google Classroom, increased use of itsLearning, and use of subject-specific software.● As part of the TEC course on Leadership in Blended and Digital Learning, five WPS administrators have developed a draft definition of “blended learning” and are working on a plan that supports the growth of blended learning at each of the building levels.	<p>and Citizenship is a challenge. This year’s 9th graders will have had this experience, but older students have not (and their needs are constantly changing).</p>	
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Middle School Strategic Initiatives:

- Provide ongoing tech PD for teachers to support the learning needs of students in the service of:
 - Personalized learning
 - Use of online tools
 - Digital citizenship
- Building-based tech committee will work with administrators to draft three-year tech plan.
- Explore ways within the schedule to offer more direct instruction for computer programming and other tech skills.

<p style="text-align: center; font-size: 2em; color: white;">A</p> <p style="text-align: center; color: white;">Accomplishments</p>	<p style="text-align: center; font-size: 2em; color: white;">C</p> <p style="text-align: center; color: white;">Challenges</p>	<p style="text-align: center; font-size: 2em; color: white;">E</p> <p style="text-align: center; color: white;">Exemplar</p>
<p><u>Summer Work—Building a Digital Ecosystem</u> Many teachers developed blended assignments and planned for the use of supportive tools such as Read&Write. Although only developed two years ago, Google Classroom has seen a huge adoption rate, with over 30 WMS teachers this year alone signing on. Google Classroom allows teachers to share their curriculum efficiently and effectively. Both students and teachers report that Google Classroom helps students keep organized by having all of the resources in one place and displays the due date for each assignment. Students and teachers also report that the quality of work has improved by having quick access to videos and other online resources to delve deeper into topics or to fill in learning gaps.</p> <p><u>Personalized Learning</u> Read&Write and Snapverter: The District purchased two Chrome apps to support all students with their content reading and assignment writing. We demonstrated both programs during a faculty meeting and then, at the next inservice meeting, each teacher installed the app and went through a series of "missions" to learn how to use the programs. The teachers worked by cluster so they could then discuss the</p>	<p><u>3-Year Tech Plan</u></p> <ul style="list-style-type: none"> ● MA technology standards were not released until January and are due to be approved in June. Therefore, the building-based tech committee will work with administrators to draft a three-year tech plan that reflects the new standards in the coming year. ● Chromebook durability has been a major issue. We have had two dangerous malfunctions which led to computers sparking, smoking, and melting, creating a safety issue that led us to recall all machines on June 8th. Additionally, we have had 400+ repairs go out this year - requiring an inordinate amount of time and work. This negatively impacted student learning (and there was the frustration of parents, students, and staff) due to the significant repair time. We are very worried about the lifespan and safety of the machines as we head into year three of our lease. Given all our work on the 1:1 initiative, we can't conceive of a plan for next year that does not include student machines. ● PARCC tech requirements and managing Chromebook insurance claims have significantly impacted the Instructional Technology Specialist/Director's time for work with teachers and students. This workload is unsustainable. 	<p>One 7th grade teacher, who had been a more reticent user of technology, modified a social studies assignment from his traditional print-based photo project into Google slides. Doing so not only saved over 3,000 printed pages but gave students more choice in selecting components of the project, and they could add photos of their own to provide better evidence to their writing. The quality of writing also improved as the teacher was able to provide comments and writing prompts during the writing process rather than after the assignment was submitted. This teacher's success prompted him to "evangelize" the benefits to the rest of his colleagues, causing other teachers to give it a try. This example highlights how the comfort level of the majority of teachers has increased and the benefits of technology integration are no longer happening in just pockets around the school.</p>

students who could benefit most from the Read&Write toolbar, which works in tandem with the usual Google Doc tools.

Use of Online Tools

The second year of “Slice of Pie” summer work led teachers to craft and teach lessons to students around Google Apps for Education tools:

- Slides (Combined Arts)
- Sheets (Math)
- Docs (English)
- Drive (Language)
- Calendar & Keep (Science)
- Gmail (Social Studies)

6th grade teacher taught “Slice of Pie” lessons and 7th and 8th grade teachers taught more advanced “Slice of Pie a la mode” lessons. Teachers shared the lessons they taught with each other at cluster meetings.

Digital Citizenship

In September WaylandCares arranged for a guest presenter, Katie Greer, to share information with the middle and high school students (and parents) about online safety. In November/December we asked Jason Verhoosky of WaylandCares to speak to all 8th graders during Wellness classes to build on and delve deeper into the topic of digital citizenship and social networking safety, in particular. Students benefited from hearing about the topic in a smaller setting, and Jason's relaxed communication style helped to foster rich discussion.

Big Picture Tech Integration PD

Through back-to-back faculty PD sessions, teachers participated in a TPAK improv activity designed to have teachers reach outside their comfort zones to collaboratively develop a lesson combining a curricular goal, a pedagogical strategy, and a technology tool. In the next session teachers

- Affording rising costs of applications (ex: iReady) and hardware in level-funded budgets.

learned more about SAMR and gathered in mixed groupings (grade and subject area) to collaborate on specific lessons focusing on ways to effectively integrate technology to achieve the learning objectives. Playful collaboration and innovation were the key skills being fostered. Teachers reported that it was one of the best PD sessions they've had at school.

Increasing STEAM and Coding

An incredibly generous, comprehensive WPSF grant will fund a STEAM consultant for two years, a coding consultant to work with Hip Rivera, summer work, and a 3-day workshop for staff to develop mobile app programming skills. We look to incorporate programming at all three grades through the Applied Science curriculum using MIT App Inventor. Additionally, we want to increase our project-based work in STEAM across disciplines at WMS.

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Elementary Schools Strategic Initiatives:

- In an effort to create digital citizenship, we will provide ongoing training for students and staff around LARK across curricular and social areas related to the use of technology.
- Continue to examine applications for iPad and Chromebook use to support a STEAM curriculum and differentiated instruction, including applications to support technology literacy such as All the Right Type and Code.org.
- Develop additional STEAM projects throughout all grade levels.

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<ul style="list-style-type: none"> ● Educators continued to implement cross-curricular lessons which provide students and staff with a clear understanding of WPS’s Acceptable Use/Internet Safety Policies and LARK (Legal, Appropriate, Responsible, Kind). This applies to curricular areas and social interaction related to the use of technology, including areas such as shared Google documents. ● The technology integration specialists had a team professional practice goal of collectively creating an online technology shared resource to support teacher and student use of technology. A tremendous amount of progress was made on this ongoing project during the school year and will result in two new tips/strategies being provided to teachers each month in building a database of resources. ● The Technology Department hosted a Professional Development Day for WTA staff in offering instruction to support teacher proficiency on Google Classroom, Read&Write for Google, Google documents, Chromebooks, Macbook Yosemite and iPads. ● The technology integration specialists provided personalized professional development to teachers to support their ongoing learning around best pedagogical practices and digital literacy. This has been extremely helpful in 	<ul style="list-style-type: none"> ● We continue to have outdated computers in our main labs across the three schools that need to be replaced. ● Although the Technology Department conducted a meaningful Technology Professional Development Inservice, instructional technology needs more professional development time in order to meet district/school-based goals. ● Maintaining student privacy while utilizing meaningful education applications designed to engage and extend. ● Our contract with Symphony Math ends in December and there will likely be a significant cost for that moving forward as it was originally a Wayland Public Schools Foundation grant. ● The cost of Ten Marks continues to be \$20 per student, which could be challenging to support in our non-personnel school budgets. The Wayland Public Schools Foundation funded this year’s pilot of Ten Marks. ● With new MA curriculum standards not yet released, we do not yet have clearly defined grade level technology expectations for skill development and curriculum content learning. ● There is not consistent, adequate space in the three buildings for a MakerSpace, which would enhance the implementation of STEAM projects. 	<p>In early November, the elementary principals hosted a joint coffee/pizza night for families of fourth and fifth grade students. Jason Verhoosky from WaylandCares held an interactive discussion with parents and students regarding social media and internet safety for adolescents.</p>

<p>providing the appropriate scaffolding to develop teacher skillsets.</p> <ul style="list-style-type: none">● Educators continued to implement a keyboarding program beginning in third grade in an effort to prepare all learners for both academic endeavors and state-mandated testing (PARCC). The “All The Right Type” computer-based program was utilized to support student progression in their keyboarding skills, with a focus on increased typed words per minute and accuracy. Assessments showed growth in students’ typing proficiency.● After summer work that focused on developing grade level STEAM projects, each K-5 classroom taught three STEAM lessons this year.		
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