Wilton Public Schools
Spring Technology Report

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Logo Design by Agent Skip Ploss

Mathew W. Hepfer
Director of Technology
Wilton Public Schools

Introduction:

The Wilton Public Schools Spring Technology report highlights the progress that the Wilton Public Schools have made in creating a digital transformation. The elements that lead to a successful digital transformation are: infrastructure and support, access to digital tools and equipment, and curriculum and program integration. Highlighted below are the efforts made across the district to improve infrastructure and support, increase access to digital tools and equipment, and integrate technology into the curriculum. We also show some areas where transformation has already begun.

Infrastructure and Support:

Network and Wifi

Where we are now...

As we have discussed during the budget preparation, we have had an explosion in the bandwidth use across the district as students and staff have connected to our wireless network with both personal and school-owned mobile devices. Our bandwidth had suffered from insufficient infrastructure on the wired side and access points that provided full wifi coverage but not enough density to support 1:1 computing across the district. Over the summer we upgraded the filtering to 10 Gb to ensure that network traffic would not bottleneck in or out. We upgraded the switching equipment at Wilton High School and Middlebrook to 10 Gb capability and connected all of the access switches at each school to the core switch closet with fiber. A fiber backbone allows us to expand our wifi access points to easily meet our future needs.

We made great strides with providing better wifi density this year. Our biggest improvement came at Wilton High School. We leveraged our Erate reimbursement funds to purchase and install 58 new wifi access points. This provides one access point for every academic space in the building and eliminated the connectivity issues that plagued us last year. At Cider Mill and Middlebrook we purchased 16 additional access points to pair with every Chromebook Cart. The added wifi density allowed us to have seamless use of Chromebooks for MAP and SBAC testing using the Chromebooks this spring.

Wifi APs in every WHS classroom.

Where we need to go and how we will get there...

Across the district we need to continue to improve our wifi speeds and bandwidth availability to prepare for 1:1 computing in all academic spaces. We need to support our current needs and the expectation of increased need due to streaming video and expanded mobile device use on the network. Streaming video, particularly on the wireless network, adds a tremendous bandwidth load to our system. In addition, our network will need to support almost 700 VOIP phones across the district starting in the summer of 2016.

We have budgeted for major upgrades to the network switches at Cider Mill this summer. Along with the switch upgrades from the Miller-Driscoll renovation this summer, we will have completed the major network backbone overhaul before the start of the school year. We will also use our current budget to add wifi access points in

every classroom space at Middlebrook and Cider Mill. At Miller-Driscoll, all the renovated and new spaces will also receive at least one wifi access point. If all goes to plan this summer, we should have a solid, stable, and capable wired and wifi network across the district.

Classroom Environment and Phones

Where we are now...

In addition to the filter upgrade, we improved how we filter content in a way that allowed teachers more seamless network access. We removed the need to log in to the filter every time the wifi was accessed or every time it timed out. In addition,we encrypted the SSIDs as recommended by our auditors. Teachers found this change to have a significant positive impact on instruction, particularly when using Chromebooks and iPads.

Ending the proxy login for iPrism.

Teachers want to have a simple and effective means to communicate with parents. Our current phone system is showing its age. While it offers basic function, the phones themselves are beginning to fail and are often fixed with refurbished parts.

Where we need to go and how we will get there...

We need to continue to be more efficient with our filtering so that we effectively block offensive content while not blocking sites that teachers and students need for instruction. We plan to move to the filtering system offered by the State of Connecticut called iBoss. Darien, Weston, and almost all of our DRG use this system and have found it effective for wired and wifi filtering. This summer we will complete a three year project with the town to provide a VOIP upgrade across the district. The new phones will offer more reliable service, more features, and save us money.

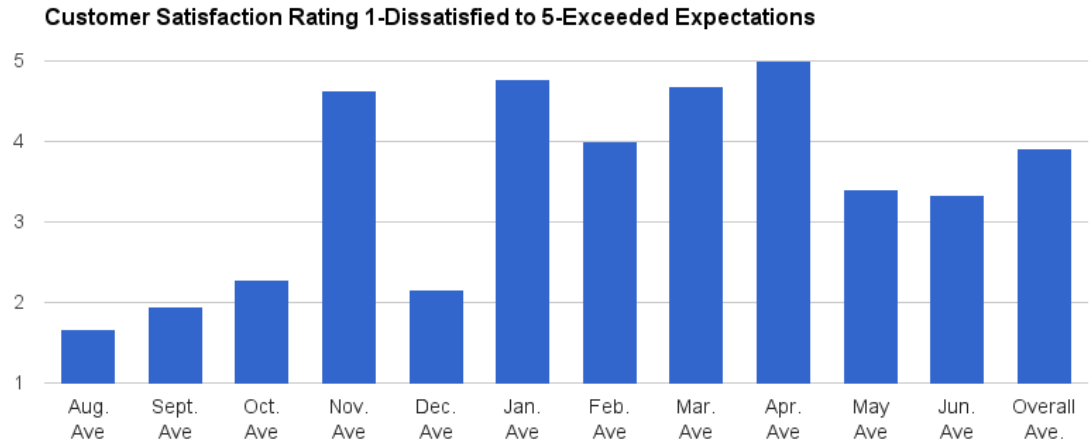
Customer Service and Student Interns

Where we are now…

In response to feedback from the end of last year, we implemented a number of changes with our technical staff designed to provide better service to the teachers and staff members. We modified the schedules of the central office support staff to better respond to network or server issues. We also established building support hours where our central office team could proactively work on issues at each of the buildings. As a result, this year we had no widespread network or server issues.

We held bi-weekly meetings of the technical staff this year. The first meeting each month allowed the staff to share information and best practices for solving common issues. The second meeting of the month provided the team with professional learning based on data we collected about their needs. Samples of training included: Google, SMARTBoard and projector maintenance best practices, imaging, and Windows 10.

We continued to refine and update our Help Desk ticketing system based on feedback from staff. As part of our redesign, we collected customer satisfaction data on our technical support. We had customers rate their satisfaction with our support from 1 (Dissatisfied) to 5 (Exceeded My Expectations). Our average rating from August to November was 2.6 with a low of 1.7 in August. From December to June our ratings improved to 3.9 with a high average of 5.0 for the month of April. This data allowed us to share the progress of our efforts with staff as well as allow them to hear pointed feedback from customers who were not happy with our level of support.



This year we hired five WHS juniors and seniors as interns to help manage our mobile devices and support our wifi installation at Wilton High School. In November we interviewed and hired Dylan Moody, Robert Nappa, Emily Zimmerman, Jessica Wiener, and Andrew Murphy. The intern team worked in pairs in every building, reconfiguring and updating iPads and troubleshooting iPad issues. In March and April we used the interns to help image 400 Chromebooks at Middlebrook and Cider Mill and wire 16 Chromebook Carts to allow them to be used for SBAC testing. We have found the interns to be quick and flexible problem solvers, as well as hard workers and great team players. We are sad to see Dylan, Robert, and Andrew graduate and wish them all well as they transition to college.

In the winter, our Administrative Applications Analyst, with support from our Administrative Assistant, drafted a formal Disaster Recovery Plan document. Blum Shapiro recommended this work to be formalized in their audit of the schools last year. Much of the documentation existed in separate places and with different staff members. We now have a working document that can be easily updated and modified to adapt to our changing infrastructure and needs.

Where we need to go and how we will get there...
As we move ahead with year two of a 1:1 pilot, an expansion of our use of Chromebooks and teacher laptops, and begin preparing for a BYOD/ready access to technology environment next year, we need to expand our use of student tech support. We will need to partner with the building technicians as we imagine and design the Student Help Desk course next year.

After we complete network, wiring, and wifi upgrades as part of our summer work, we will need to update our Disaster Recovery Plan document. More importantly, we will ensure that we have regular, scheduled tests of our backup systems. We drafted a Service Level Agreement this year and look to implement it next year as a way to set customer service expectations with the Wilton staff.

Access:

Teacher Laptops

Where we are now…

This year we provided 337 teachers and certified staff members with Lenovo Yoga touchscreen laptops. We imaged and customized the laptops for each school and each teacher over the summer including upgrading all laptops to the Windows 10 operating system. When teachers returned to work in August the Technology Instructional Leaders with the assistance of the building technicians and some of our more advanced teachers, offered training on the basics of how to use the Yoga. In addition, our college interns created google docs and video clips that teachers could use to orient themselves to the device.

Feedback from the administrators, teachers, and coaches on the laptops was overwhelmingly positive. Coaches loved that teachers came to sessions with the device and could immediately access resources. The laptops, combined with our adoption of Google Apps for Education, had a positive impact on teacher professional learning and instruction. Again, the laptop along with the capability of live sharing and creating of documents was a game changer for teachers, coaches, and our curriculum coordinators.

Where we need to go and how we will get there...

We need to provide laptops to the remaining certified staff members who did not receive them last year. We also plan to rewire the projectors and SMARTBoards so that teachers can plug directly into them at the front of the room. This will allow more seamless and effective use of the laptops for instruction. Our technical staff should also develop a maintenance schedule for checking and updating the teacher laptops during the year.

Gmail and Google Calendar

Where we are now…

During the course of the year we transitioned the entire district from Microsoft Outlook for calendars and email to Gmail and Google Calendar. Because of NEASC and the importance of parent communication, Wilton High School moved quickly in the fall to convert the entire staff. This work was led by Tech IL, Amy Korn, and Associate Principal, Dr. Rich Sanzo. Secretaries from across the district received expert training in Gmail and Google Calendar on November 3rd from EdTechTeam as part of our plan. In the fall Middlebook Tech IL, Scott Sliver-Bonito, documented a formal process for converting calendars and mailboxes via Google Doc and Youtube videos and shared it with the other ILs and technicians.

Through the winter and spring, with the assistance of the technicians, staff members in the remaining schools converted their mailboxes, contacts, and calendars to Google. On May 15, 2016, we ended Outlook as our official email and calendar platform.

Where we need to go and how we will get there...

Because we will have emails from our legacy system that we need to access and retain for legal purposes, we need to have an archive system that can manage both platforms. We have begun the process of archiving all of our emails from both systems on Gaggle. Over the summer we will create an autoresponder for any emails coming to our Outlook domain, effectively ending that platform for communication.

Chromebooks

Where we are now...

As we moved to Google Apps for Education as our learning platform for the district, we made a concerted effort to obtain more Chromebooks this year. Chromebooks provide many of the benefits of a laptop, like a full keyboard and larger screen size, with the portability of a tablet. The advantages of Chromebooks are the low price and ease of deployment and maintenance.

Our original goal was to obtain 512 Chromebooks this year, 200 planned in the budget, and 312 that we had applied to get from a grant from the State Department of Education. Because the price of the devices went down over the course of the year we were able to purchase more for the money that we had allotted. We also sought and received additional grants from the PTAs, Carl D. Perkins and the Wilton Education Foundation. Because of this we far exceeded our goal and ultimately added 735 Chromebooks this year, including 17 charging stations and 16 wifi access points. By adding the Chromebook carts to Middlebrook, Cider Mill, and Miller-Driscoll, we could collapse the testing windows for SBAC and MAP testing. The additional Chromebook carts also freed up technology in the building for instruction during the testing window. This had a tremendously positive impact on the schools in April and May. In fact, in most cases, we found the Chromebooks to perform better than the desktop computers at delivering the SBAC testing.

Chromebooks at Cider Mill

More importantly, the Chromebook carts allowed teachers to adopt Google Apps for Education in an authentic and meaningful way. At Cider Mill, the teachers piloting Google Classroom with the Chromebook carts to teach writing found that students wrote more, wrote better, and made more thoughtful changes when editing and revising their work. At Middlebrook and the high school, where the ELA and Social Studies departments clamor to get time in the computer labs for their students, more and more classes opted to bring the Chrome labs to their classrooms.

Where we need to go and how we will get there...

We plan to continue to invest in Chromebooks next year. Our goal is to have sufficient numbers of Chromebooks for our testing and assessment program. We also need to have enough devices to support our transition to a 1:1 ready access computing environment in 2017.

TV Studios

Where we are now...

One year ago we had the grand opening of the re-designed TV studio at Wilton High School. Part of the plan last year was to open TV studios at all of the schools. We used the seed money that WEF provided, along with some repurposed equipment from the Wilton High School studio, to open studios in the Learning Commons

spaces at Cider Mill and Middlebrook as well as the staff nook at Miller-Driscoll. This equipment allowed our clubs to enter the Cablevision Educational Access Awards contest in May. Our team at Middlebrook received first place in the Community/School category, third place in the Documentary category, and second place in the PSA category. Our Miller-Driscoll team,competing against mostly fifth grade competition, won second place in the Community/School category.

Filming a TV segment at Middlebrook

Over the summer we also set up our Discover Video server and encoders. This system allows us to broadcast live events. Even with some well documented growing pains we used this system to livestream events from Cider Mill, Middlebrook, and Wilton High School over the course of the year including celebrations, improv shows, sporting events, and public meetings.

As we began creating clubs and filming content we felt our growing pains. Some of this necessitated that we obtain more equipment. The Area 9 Cable Council awarded us three separate grants that allowed us to upgrade audio equipment, microphones, and cameras in all four spaces. In total, Cablevision's grant program awarded us over $38,000 for our TV studio program.

Where we need to go and how we will get there...
As our program expands, so will our equipment needs. At the elementary schools, for example, the clubs can have over twenty participants. Having only a handful of cameras allows only a few students to film at a time. Middlebook has expressed the need for additional cameras, better microphones, and green screens to continue to grow their program. In the future we need to provide a strong wifi signal at the stadium and sporting fields to allow us to expand our ability to do live broadcasts.

Integration:

Library Learning Commons Program
Where we are now…
Over the summer our K-12 team wrote the K-12 Learning Commons Curriculum Framework and each school mapped out their curriculum frameworks for the year. This left much of the day to day lesson planning to the schools. Because each school started in a different place with the curriculum, led by Cider Mill who had developed and written lessons the previous year, the implementation was uneven. Each school implemented new lessons and units. Cider Mill added to their unit on digital operations and digital citizenship by bringing in lessons on Google Apps for Education. At Wilton High School, the library media specialist co-taught a unit on digital citizenship to the cohort of students in the 1:1 Chromebook Pilot. New lessons and units at Miller-Driscoll incorporated coding, mystery Skype, and digital citizenship.

Over the summer the Learning Commons curriculum writing team met with ILs from the content areas and the Curriculum Coordinators to develop a research and inquiry model. With support from a consultant from CES, we reviewed five popular models that have been adopted by districts across the country. The group debated the merits and ease of use K-12 and decided to adapt and modify the iMatrix model that is used in Ohio.

In addition to the curriculum work, the learning commons in each building opened innovative work spaces. From iPad and computers available for coding, to simple robotics, 3D design and printing, and even good, old-fashioned legos, each learning commons had a welcoming space for kids to explore. In order to prepare for the future of these spaces we created and posted a RFP for redesign of the spaces to support the curriculum.

Where we need to go and how we will get there...
This summer the teams plan to continue to meet both by school and as a K-12 group to write and revise the K-12 Learning Commons Curriculum based on our first year of implementation. An important element this summer will be to find entry points in the K-12 curriculum for ELA, Social Studies, and Science. This past year we focused on our beta test of the curriculum and did not endeavor to educate the staff and parents about the shift in programming to the degree that we should. Because we want parents and staff to understand and support the changes, we will need to update existing presentations and videos, and utilize the media to make our work visible.

Another challenge ahead will be to rethink our current scheduling practices. An important element in the Learning Commons Program is the concept of having a blend of scheduled and flexible scheduling, and our schools have held to their current models for years. Our current staffing levels do not allow us to deliver the curriculum to every student in the middle and high school levels. We will need to review how we staff the Learning Commons so that we can meet our learning goals. We also will need to use the budgeted funds to plan and design new learning spaces in all of the schools to create optimal learning environments for this program to work. Having the plans and budget estimates in place will allow us to develop a long term capital plan for this work.

Agents of G.O.O.G.L.E.
Where we are now...
This fall we developed a professional learning program called the Agents of G.O.O.G.L.E. (Google Operatives Out Teaching Lesson Expertise). We developed our "train-the-trainer" program based on a similar program in the Newington Public Schools. We launched the program by having a team from EdTech provide intensive training to a team of Pre K-12 teachers and staff members in November. In December our Agents began taking the Google Certification Exams. As of May 24, 2015 we have 41 Teachers, Administrators, and staff members who have attained Google Certified Educator Level 1 Status. In March we had EdTechTeam return to offer training to our most advanced Agents. We now have eight Google Certified Educator Level 2 Agents of G.O.O.G.L.E. across the district.

Agents preparing for Level 2 exams.

Because our Agents never rest, we had two members, Tech ILs Scott Silver-Bonito and Amy Korn, move to the next level to become Google Certified Trainers.

What did our Agents do with this knowledge? Share it. Our Agents created online and in person trainings to teach every level of learner at their school. Agents helped all staff members make the transition from Outlook to Gmail and Google Calendar, including helping them convert their calendars and mailboxes. Agents also worked with staff on professional development days offering formal, leveled training. Most importantly, Agents provided just-in-time training for just about any aspect of Google for their colleagues. The success of our Agents program caught the attention of EdTech Team and they asked Wilton to host Google Certification Bootcamps in June and August. Based on the number of Wilton teachers attending these Bootcamps, you can expect our numbers of Level 1 and Level 2 Agents to grow over the summer.

Where we need to go and how we will get there...
Based on the feedback from our Agents and our 1:1 Pilot teachers we need to continue expanding and extending the expertise of our Pre K-12 staff with Google Apps. We have budgeted money for Google training next year that we can use to expand our Agents of G.O.O.G.L.E. program to offer fun and innovative ways for teachers to transform their teaching with Google Apps.

Transformation:

WHS 1:1 Chromebook Pilot
Where we are now...
At the June 9 Board of Education Meeting, our 1:1 Chromebook Pilot teachers reviewed their experience with the Board of Education. Our team consisted of seven teachers representing the Business, English, Social Studies, World Language, Science, Math, Learning Commons departments. The administration, led by Associate Principal Rich Sanzo, scheduled a cohort of about 40 students who were all slated to take the same core classes in their Freshman year. The team met over the summer to begin planning the roll out of the Chromebooks and determining how the team would work together.

Showing off work in the 1:1 Chromebook Pilot

As was reported at the June 9 meeting, the common planning time and collaboration were critical to the success of the first year. Teachers learned from each other, no matter the subject, and found that the collaboration inspired and pushed them to transform the way they taught. The planning time combined with working in a cohort allowed teachers to share successes with individual students that allowed the team to organically personalize the learning for each student in the cohort.

An important takeaway from year one was understanding when to NOT use the Chromebooks. All of the teachers acknowledged the allure of trying to do everything on the Chromebook. As the year progressed the team became better at understanding when to have students turn down the screens to engage in other learning

activities. The students themselves also recognized that the Chromebook could be a distraction as much as a tool.

Where we need to go and how we will get there…
The administration at the high school recognized the power of the pilot and has decided to expand it next year. The plan is to offer sections of honors classes in Biology, Algebra, and Spanish. This will allow them a larger pool of students and allow them to double in size. Another important change will be to run the pilot as a BYOD. The team conducted a survey and found that 67% of students already bring a laptop or Chromebook to school. The high school has the resources to provide take home Chromebooks for any student who does not bring in their own device.

Another important finding in year one was the need for a strong infrastructure and support. Recognizing this, we installed a wifi access point in every academic classroom starting in January. To ensure the success of the program going forward, constant monitoring of the wifi network will be critical. In addition, with more students coming in to learn with Google Apps and Google Classroom, we will rely on our Student Help Desk for student support with Google.

K- 8 Transformation
Where we are now...
This year you could view many examples of learning transformed through technology by following our twitter hashtag- #wiltonwayct. Each school had much to celebrate, so we will simply highlight some high levels of transformation at the K-8 level.

Puppet Pals videos at Miller-Driscoll.

At Miller-Driscoll the Learning Commons program launched as a model of transformed instruction. Tim Ley and Linda Green revised their entire program to meet the learning goals that were developed over the summer. The new program featured creative and collaborative activities. Their Learning Commons also showcased maker stations that allowed our K-2 students to try coding and robotics. Tim Ley also broke down the walls with Google Hangout and Skype by interacting with classes in Middlebrook and presenters from around the country.
On a professional level, the Learning Commons program supported collaboration with classroom teachers in the areas of tech integration and student inquiry, which helped improve instruction with technology and inquiry across the building. Tim Ley and Technology Instructional Leader, Bryan Ennis will present the Learning Commons transformation at the world's largest educational technology conference International Society for Technology in Education Conference in Denver, Colorado next week.

First Grade teacher, Scott Dempsey, used iPads to transform his "Celebration of Learning". This year's project included student created videos that highlighted their learning. Students then shared these videos in a celebration with their parents. Scott also piloted the use of the green screen and iPads to create presentations that supported nonfiction research and student inquiry.

At Cider Mill, the Nod Hill third grade team transformed their writing instruction with the use of Google Apps and the carts of iPads and Chromebooks. The teachers found the students to be more engaged in their writing due

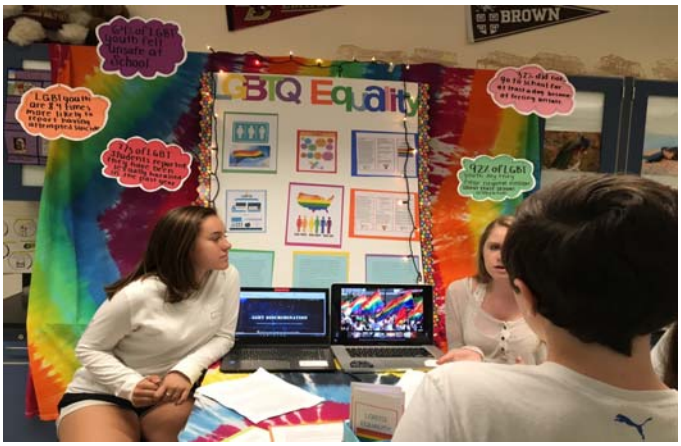
to this digital transformation. They observed that students wrote longer pieces within a typical writing period and with greater attention to the areas of focus from the mini lesson. The Chromebook carts made it possible to provide individual devices for student use during this process. iPads also made it possible to continue the valuable research from writing projects when the Chromebooks or labs were not available. The Nod Hill team utilized Google Classroom to collect student work and give feedback for revising and editing.

Teachers at Cider Mill transformed units that had been done the same way for years. Heather Redin's class took their non-fiction writing unit to the next level by publishing ebooks via the BookPress app on the iPads. Students then had the books printed in hard copy and added to the classroom library. Ms. Redin's class was featured at TechNext 2016 as an example of how blending technology with traditional writing and research can lead to engaged learning. Sherilyn Swords took her final Closing House project to the next level with the use of the Chromebooks and Google Slides. When parents visited, they saw student created multimedia presentations of something important that they learned this year. The student choice, collaboration, and flexibility allowed all learners to express what was important to them. It also showed how this type of teaching can cause students to focus and produce tremendous results right up to the last day of school!

Technology also transformed other operations at Cider Mill where Google Forms made it more efficient to collect student work and sign parents up for various activities. Teachers also use Google to collect student open ended responses in reading and give feedback on how to improve in their response. Grade level teams utilize Google Calendar to prioritize IET times to help stay on track and be productive.

As you would expect, Middlebrook had a groundswell of technological transformation this year. From music teachers teaching students how to promote and analyze vocal selections using YouTube, to Social Studies teachers using Google Classroom for back channel discussions during presidential debates, to World Language classes using online venues to post restaurant reviews in the target language (and so much more), teachers have embraced innovative uses of technology. With enthusiasm and a genuine devotion to learning more about technology to improve student learning experiences, Middlebrook has strongly embraced the district's technology initiative of providing students the opportunity to learn and create in a digital world.

Walking through the classrooms while the 8th grade teams presented their capstone performance assessments,



PADI 8th grade capstone presentations

the organic and seamless transformation of the work to a digital platform could be seen everywhere. Students collaborated to create and share documents that they published for their displays. Other teams collaborated to

create teaser videos that they published or used Google to sort the data and create graphs to make their data and their thinking visible.

The Wilton Public Schools are not alone in recognizing when our teachers have truly transformed instruction. The American Council on the Teaching of Foreign Languages or ACTFL asked Middlebrook teacher Carolina Quagliero to present at its convention in San Francisco this year.

Mrs. Quagliero shared how she transformed Spanish instruction in the middle school with the use of Google Apps.

Mrs. Quagliero speaking to a packed audience at ACTFL in San Francisco

Where we need to go and how we will get there...

We need to continue to leverage Agents of Google to move all teacher to the next level with this platform. As we move to a ready access 1:1 computing environment, the Google platform will allow us to use almost any device. The feedback from students also suggests that the features of Google, collaboration, sharing, instant feedback, and the way it integrates across platforms, make it the logical choice to support student engagement. Based on our feedback after our second year of implementing PADI, we need to continue to support building the capacity of teachers to create and administer quality performance assessments. Most importantly we need to find ways to celebrate teachers who take the risk of transforming their teaching with the use of technology. We can celebrate them in a variety of ways, on social media, in newsletters, and in faculty meetings in front of their peers.

Continuing the Journey:

TechNext 2016

We held our second TechNext event on March 22 in the Little Theater at Wilton High School. Our theme this year was "It's not just fun and games: Using technology for a better world." This year's show featured 23 students, one club, and two classes. Presentations ranged from cloud computing and bitcoins to how students hope to use current and future technologies to better offer live translation of languages. In addition to the stage presentations, visitors were treated to booth presentations in the lobby and hallway. We had students who taught themselves coding, students who built their own computers, and students who created virtual museums.

Logo design by Tucker Bendix, Class of 2016

Live Streaming

This summer we installed a Discover Video server on our network, allowing us a platform to offer live streaming broadcasts of events in all of the schools. We began streaming in September of 2015, starting with Board of Education meetings. After some well documented growing pains, we hit our stride this winter. Since January we have live streamed sporting events, improv theater, and public meetings. On Saturday, June 18th, we will stream our graduation ceremony for the first time. Our Wilton High School TV club led the way with this work, with students learning the platform, troubleshooting, and figuring out how we can stream events on the internet and also broadcast them live on channel 78. Based on the enthusiasm of the students in all four schools, you can expect that this work will only grow and grow.

Digital Leadership Institute

In December Wilton hosted a seminar faciltated by Dr. Bill Brennan entiled "Leading, Learning, and Innovating in the Digital Age." Wilton's team of Administrators and Technology Instructional Leaders worked together with a cohort of technology directors and technology integrators from the region to investigate strategies and structures for designig and facilitating personal and organizational change. The schools that assembled took away strategies for working individually and collaboratively to innovate and accelerate the capacity of our staff members to change.