Taconic Hills Central School District

Technology Plan
May 1, 2015 - June 30, 2019

Technology Plan Outline

I. Executive Summary

Mission Statement

Taconic Hills Central School District students will be supported and graduate with the technology skills necessary to allow them to be competitive in an ever changing world regardless of the career path they choose.

Staff will model to students the benefits of best practices for technology use. Staff development in the use of technology tools will continue to be available to every staff member, and focused increasingly on how to integrate technology into the curriculum. There must be a seamless integration with teaching and learning. Faculty and staff will be challenged to learn how to use all the resources available and look to best practices for incorporating technology into their classes. Classes in the 21st century will be paperless; discussions, assignments and work products will be completed and shared digitally.

Technology will be used to continually evaluate and improve curriculum, instruction and assessment practices.

Technology Mission/Vision Statement

We envision an environment in which the adoption and use of current technologies will serve as tools to fulfill the instructional, administrative, communications and operations functions necessary to achieve the mission of the Taconic Hills School District. Technology will be an essential tool to:

- create a diverse, enriched learning experience for all students
- enable students to flourish in an increasingly complex society
- nurture and enhance the natural talents of students
- enable all students to become lifelong learners
- enable staff to utilize existing and emerging technologies to support their job function in the school setting
- promote parent engagement

Technology will be used to efficiently implement and improve business functions.

II. Information Technology Assessment

A. Current inventory of equipment and services
    1. Computers

       We currently have 887 desktops, 473 laptops and 26 tablets. Major concentration of these devices are in 9 labs, 12 laptop carts and 6th grade 1:1.

    2. Telecommunications

       We are using Mitel 3300 VoIP phone system. That includes a redundant 3300, Fax client server, Tapit (log server), Mitel Communications Director server for programing phones and a Mitel Applications Suite server tying it all together. There are 320 phone numbers with about 250 phones (Mitel models 5330 and 5320).

3. Internet access and services

> We currently use a 100MB connection provided by NERIC and maintained by Fairpoint Communications.

4. Other technologies

- Other technology includes 189 printers, 3 3D printers, 86 interactive whiteboards, 91 projectors, 10 flatbed scanners, and 1 3D scanner.
- Distance Learning Labs managed by a technician who helps maintain connection with NERIC, the provider. We have a permanent installation in Room S139 and a semi-portable unit in S273.
- Network Infrastructure consists of: a Cisco firewall (ASA5150), a Barracuda 410 web filter, and a main core switch (HP A7506). All eleven internal network closets use fiber connections back to the main core switch. There are 25 non-POE and 27 POE switches (all 48 port switches).
- Server closet contains: 10 physical servers (Dell and IBM servers), 3 appliances (Barracuda and Acellus) and 15 virtual servers on an internal cloud network (3 Cisco 220 and 1 Netapp SANS), using VMware to manage our virtual servers.
- Video Surveillance System consists of 146 cameras and 2 servers with 46TB of storage. This allows for two weeks of stored video for each camera.
- Wireless system consists of 133 access points and an access control server (HP WX5004). This provides 90% coverage for the two wireless services (Guest and Secure).
- School transportation has mix of analog and digital radios that have lost range of service (<70%) with new FCC regulations implemented in 2012. The surveillance cameras in buses are three different systems with proprietary programs that do not convert to common file types for easy viewing.

5. Software and Web Based Programs

A. Standard (All computers)

> Microsoft Office Suite 2013 Word, Excel, Publisher, Access, Outlook
> Google - Document, Presentation, Draw, Spreadsheet, Form, Mail, Sites
> Microsoft Windows 7 Professional 64 bit
> Endpoint (virus protection)
> Adobe Acrobat Reader
> Browsers: Internet Explorer and Chrome
> School Tool
> Photoshop Elements
> Destiny
> NWEA
> eDoctrina
> Brain Pop
> Audacity

B. Various Software

> Woodcock Johnson
> Vision (Lab monitoring software)
> Psych Corp (WAIT)
> Lexia
> Skype
> Daisy
> Makerbot

Show Cue System
Fountas & Pinnell
Finance Manager
Info-Tax
Music Lab - Sebelius, Auralia, Finale, Band-n-Box, Smart Music
Depco Lab - Sketchup

C. JR\SR High School

Rosetta Stone
Eduware for Science and Math
Castle Learning
CAD - Auto Desk
Examgen for Math and Social Studies
Pearson Success Net Plus
Acellus
TI - CAS and navigator
Google Classroom/ Edmodo
Expert 21

D. Elementary School

Lakeshore
Percy
KidPix
Type to Learn
Edmark
Lexia
Moby Max
Pearson Success Net Plus

B.   Current program status

1.   Curriculum integration - We currently have Google Apps for Education Accounts for all staff members and all students in grades four through twelve. Some teachers are using platforms such as Google Classroom and Edmodo to operate a virtually paperless classroom. Many classrooms regularly use projectors and interactive boards. Computer labs and mobile laptop carts are regularly in use across all grade levels. Students in grades four through eight have experimented with computer coding through code.org. Many teachers have experimented with creating screencasts for Flipped Learning and Close Reading exercises. Skype is being used to connect with other schools in the US and internationally as well as with professionals such as authors and scientists. We have ELA and Math resource websites designed to give students, parents, and teachers access to resources, links, and audio books. 3D printers have been utilized by students with the creation of projects and to build needed manipulatives for classrooms. Our DL Lab hosts and receives classes for students as well as workshops and trainings for staff.

2.   Staffing and training - We currently offer technology PD including website construction, Google Apps for Education, and 3D printer use at staff development days. A STEM Coach and IT Department are available to follow-up with staff for ongoing technology integration needs on a daily basis.

C. Current budget

DESCRIPTION		2014-2015 Budget	2015-2016 Budget
NON-INSTRUCTIONAL SALARIES		$169,568	$180,741
COMPUTER HARDWARE		$39,000	$15,000
Computer Hardware and Peripherals	$15,000		
CONTRACTUAL		$24,700	$31,300
Barracuda Web Filter Services	$5,300		
Day Automation - Surveillance Camera Service	$3,700		
Connect 5 Call Notification Service	$4,100		
Follet Asset Management Service	$1,200		
Twinstate VOIP/Wireless Services	$2,000		
Twinstate VOIP/Wireless Server Warranty	$11,000		
VMware Virtual back-up Services	$2,000		
iTG Services	$2,000		
MATERIALS & SUPPLIES		$33,000	$43,000
COMPUTER ASSISTED SOFTWARE		$31,800	$45,220
Music Lab upgrades	$17,000		
SuperTeacher	$300		
Acellus	$3,200		
BrainPOP, Jr. Instructional Software	$2,100		
Castle Learning Instructional Software	$3,500		
AutoDesk	$400		
EdHelper Instructional Software	$720		
Instructional Software Upgrades	$5,000		
Microsoft Educational Licensing Program	$13,000		
BOCES SERVICES (Computer Leasing Program)		$120,000	$120,000
TOTAL TECHNOLOGY BUDGET		$418,068	$435,261

The Taconic Hills Central School district spends approximately $30,000 annually through local budget dollars on professional development activities that include Technology-related initiatives.

The school district also contracts with the regional BOCES, Questar III, for Model Schools support and other professional development and technology resources.

D. Needs assessment

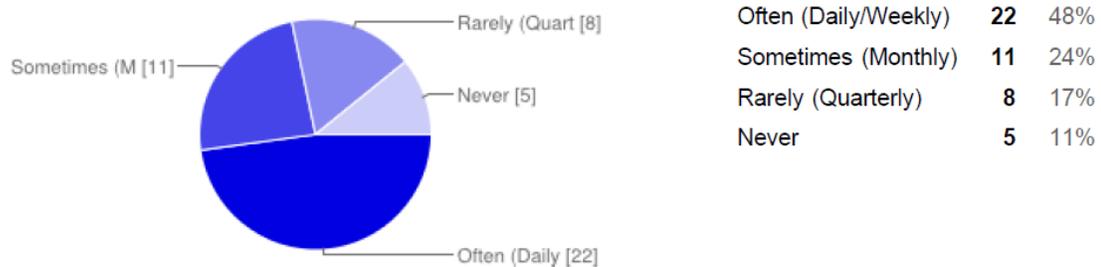1. Recent developments and current status

In 2013, a Technology Survey & Needs Assessment was given to staff members. There were 46 respondents. The assessment was developed within a Professional Development subgroup and addressed the following topics and concerns:

- Software needed for pupil and personnel "housekeeping" (grades, attendance, discipline, web pages)
- Programs used by teachers for instruction
- Programs used by students for work products
- Elementary Technology needs:
    - Computer technology teacher
    - Keyboarding instruction for students
    - Castle Learning
    - Curriculum mapping software instruction
    - K-2 student log ins are overwhelming
- Secondary Technology needs:
    - Google Docs

- ○ Better access to portals for student grades and assignments, students included
- ○ Smart phone access for students?
- ○ Time to develop new technology projects with librarian (e.g. conference days)
- ○ Time to practice programming when instruction is given
- ○ Distance Learning?

Below are some of the survey results:

How often do you assign work that requires the use of technology?

Often (Daily/Weekly)	22	48%
Sometimes (Monthly)	11	24%
Rarely (Quarterly)	8	17%
Never	5	11%

How often do you have access to computers that you can use with your students?

|		
Often (Daily/Weekly)	29	64%
Sometimes (Monthly)	11	24%
Rarely (Quarterly)	4	9%
Never	1	2%

To what extent do you use technology applications such as word processors and spreadsheets to produce materials for use with your students?
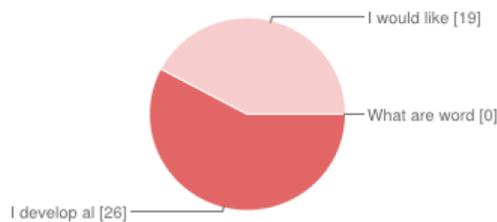
What are word processors and spreadsheets?	0	0%
I develop all my student resources using technology applications.	26	58%
I would like to use more technology resources but need training in these applications.	19	42%

I use presentation software and hardware (i.e., projector, document camera, SMART Board) within my classroom.
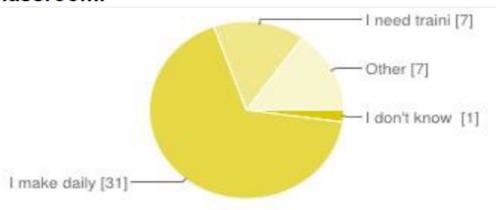

I don't know how to use presentation software and rarely use presentation hardware in my classroom.	1	2%
I make daily use of presentation software and hardware in my classroom.	31	67%
I need training to use these tools more effectively.	7	15%
Other	7	15%

I use online resources to find materials relevant to my curriculum.


I don't have time to sift through online resources.	0	0%
I rely on internet resources to supplement my curriculum daily.	36	78%
I would like to use more online resources but need training to learn how to find reliable material.	10	22%

I use e-mail to contact colleagues, parents, and students, and to stay current with information coming from my building or the district.
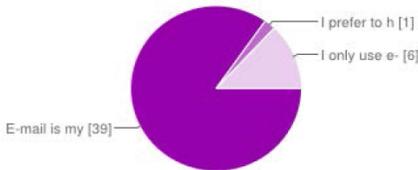

E-mail is my primary method of communication and I check my account often, even remotely.	39	85%
I prefer to have personal discussions with individuals.	1	2%
I only use e-mail during school hours, and do not use the remote application to check my account after hours or from home.	6	13%

I have used technology to monitor student performance (i.e., electronic portfolios).
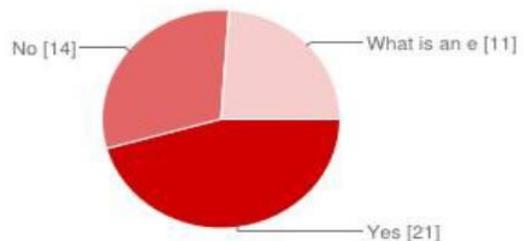
Yes	21	46%
No	14	30%
What is an electronic portfolio? I want to learn more.	11	24%

To what extent do you model ethical use of technology during lessons and recognize students' ethical use of technology in their work?

I need more [19]
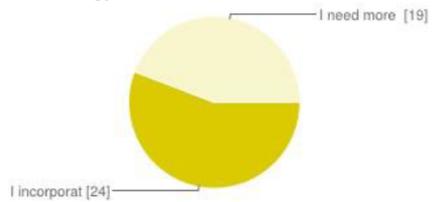
I incorporat [24]

I incorporate ethical use of technology in my lessons and require students to demonstrate it as part of a graded assignment.	24	56%
I need more training in this area in order to evaluate what my students are doing.	19	44%

III. Technology Objectives and Plans

A. Overview

1. Overall objectives

We envision an environment in which the adoption and use of current technologies will serve as tools to fulfill the instructional, administrative, communications, security and operations functions necessary to achieve the mission of the Taconic Hills School District.

2. Current technologies we would like to expand upon include but not limited to
- Grade-appropriate curriculum integration
- 3D Printing and scanning
- 3D Projection / holograms
- Google Classroom
- Video Conferencing
- Smarttable
- Touch screens in ES
- digital video cameras for live/recorded events

3. Basic technology architecture and infrastructure plan

We would like to work towards a 1:1 environment for students and faculty. At current enrollment we would need around 850 devices for the Jr/Sr High School. This expansion will create a need for more access points, network switches and additional fiber modules for the main core switch.

Network infrastructure redundancy: Our firewall is 7 years old and will need replacing in next 4 years. There are 4 main pieces to our network that all traffic must pass through: Fairpoint connection, firewall, web filter and main core switch. If any one of them fails we will lose connection to outside internet for a minimum of 24 hours. Due to our rural geographic location, network providers are limited. We would like to acquire a secondary source for network provider, as well as update main core and firewall.

We are finding "holes" in our video surveillance and need to add more cameras, because the current system is near capacity. Adding more cameras requires additional network switches, another server, more storage and updating software on current system.

We are currently solely a Windows environment. We would like to expand to Apple based products. This will mean developing an infrastructure to support end user devices, and servers to monitor and deploy services.

Provide reliable radio communications between school buses and administration throughout the school building and the buses regardless of where they are for student safety.

B.   Equipment and service components

    1.   Hardware/software
        a. Computers

            Increase number of devices for student use.

        b. Telecommunications

            Create redundancy. Find a vendor for when services are down.

            Look to create a wireless solution to supplement our wired telecommunications system.

        c. Transportation
            Provide reliable radio communications between school buses and administration for student safety. By install Crosslink System which interfaces between the analog portable radios and the digital bus radios allowing direct hey are traveling in the district.

            Benefits:
- Drivers can be in constant communication with administration at all times to report safety issues especially important when dispatch is otherwise occupied.
- Response time in an emergency is decreased since more than one office can contact buses.
- Other options such as installing an additional digital repeater are considerably more expensive (approximately $30-40,000).
- Local sheriff's department representative can use the Crosslink to allow communication from his department to be transmitted to his portable radio in the school building.

    2.   Services

      a.   Computer and Internet access
          More end user devices accessing the internet will need to raise the current 100MB connection to 500MB.

      b.   Telecommunications
          Would like to broadcast multi events on internet (board meetings, sporting events, PAC events). Getting HD cameras and supporting equipment to send out anywhere on campus. Find vendor that will stream live and store events for viewing.

c. Other (e.g., distance learning)

We are completing our first year of providing Distant Learning. We have two locations for DL, S139 is booked all nine periods of day and S273 has after school bookings. Would like to expand to more classes during school day, taking virtual field trips and opening it up to community use during after school hours.

3. Infrastructure

a. Facility construction and/or renovation
1. Expand wireless system to accommodate more devices for 1:1 goal. That entails adding access points, CAT5 wiring to closets, switches and secondary Wireless access controller.
2. Adding a 12 closet out at Turf field tower will need fiber run back to MDF closet. This will allow tower to have Wi-Fi, surveillance cameras and CAT5 connection for broadcasting games.
3. Adding blades to main core switch to receive new closet and redundancy to existing closets.

4. Related programs
a. Upgrades and maintenance are performed during school vacations and off hours.
b. Security and privacy are maintained by firewall, web filter, spam filter, AD policies.
c. Inter-school initiatives

5. Deployment schedule will hinge on when NYS Smart Schools Bond Act money becomes available for infrastructure expansion. School budget will provide funds for 1:1 devices.

C. Staffing and training

1. Technology Coordination
Tech Plan Committee prioritizes technology requirements of teachers and administrators. IT Department makes sure it will work in current environment and implements.

2. Support and Maintenance
Expanding IT Department by using interns, student volunteers. Adding Network Admin position and/or a Resource Educator.

3. Curriculum and Staff training
Implemented by Office of Instruction and Staff Development. Reviewed by Professional Development Committee, Writing Curriculum Committee, Instructional Curriculum Committee, Assessment Committee and Mentor Coordinators.

IV. Professional Development Planning and Curriculum Integration

Professional development is an important portion of the technology plan. It ensures that staff is able to employ technology when it enhances the education experience. Key components of the professional development strategy will include:

- An assessment of current staff computer and networking skills and usage. The technology committee will conduct a self-assessment annually.
- In-service training - IT and administration will be responsible for providing mentoring opportunities for those who need it.
- Mentoring- IT and administration will be responsible for providing mentoring opportunities for those who need it.
- Off-site workshops- Administration will provide training opportunities to support the technology growth and needs to remain current.
- Support for professional courses- Administration will provide opportunities to support technology growth and needs to remain current.
- Recognition and encouragement of professional technology certifications

V. Plan Administration

   A. Current plan approval status
   The district Technology Plan will be reviewed annually by the Technology Committee. Recommendations for changes will be made to the Board of Education as needed and re-approved by the full board.

   B. Budgeting
   Budgeting for equipment purchases and services is done by the Coordinator of Computer Technology in consultation with the Business Manager and Superintendent of Schools. Requests for new equipment or updates to software programs will be reviewed by the Technology Committee and forwarded to the Business Manager for consultation with the Superintendent of Schools.

   C. Ongoing planning and review
   The Technology Plan will be reviewed on an annual basis. As a means of monitoring and evaluation, the Coordinator of Computer Technology will present a current status report every February to the Technology Committee.