

Spencer County Technology Impact Review Final Report

October 9, 2014

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Spencer County Public Schools Technology Impact Review

Overview

A team consisting of Michele Crowley, Pendleton County CIO; Bryan Sweasy, Erlanger-Elsmere CIO; Christie Turbeville, Bullitt County TIS; Susan Vincentz, Bullitt County TIS; Zachary Dean, Carroll County Network Administrator; and Ryan Allan, Shelby County Public Relations Coordinator conducted a Technology Impact Review for Spencer County Public Schools on September 30 and October 1, 2014. Team members observed classrooms and interviewed students, teachers, and school administrators at each school, as well as interviewing the Technology Department and district administrators. This report is a compilation of the information gathered by the team during the review process.

It is obvious that the district has made a significant investment in technology. There are Interactive Classrooms and multiple labs in each school. The review team observed teachers and students using available technologies for instruction. However, the team also observed a high level of frustration with technology at both the school and district levels. Common themes emerged from the observations and interviews. These themes are shared below and are followed by the review team's recommendations. These recommendations are classified as Immediate, Short Term and Long Term.

It is hoped that these recommendations may be used to resolve current issues and alleviate frustration. However, more importantly, it is hoped that these recommendations will improve the learning environment so as to increase student achievement.

Connectivity

Access to the network is unreliable. This includes LAN and wireless, but Wi-Fi access appeared to be most unreliable. Often teachers and administrators have been advised that limited bandwidth is the issue. However, Spencer County is provided a 250 Mb/s Internet connection by the Kentucky Department of Education, and is currently averaging 50 Mb/s during schools hours, with usage topping out at 80 Mb/s. This suggests that Internet and network latency (slowness) are being caused by a network misconfiguration issue, either on the part of KDE and its providers, or on the part of Spencer County Schools' IT Department. The review team pulled reports on bandwidth usage from KETSView (ketsview.kyschools.us) to document actual bandwidth usage. The reports are attached.

Access

iBoss is not configured so as to allow for ease of use. It is blocking too many sites and requires a separate logon for access to the Internet. Teachers are not administrators of their classroom computers, which keeps them from accessing many resources. Many students do not have individual credentials to logon to the network and newly enrolled students are not given credentials in a timely manner. Students who do have credentials have extremely complex passwords. Teachers are limited in the number of logins, which restricts BYOD access. Some teachers indicated that the computer labs were not accessible due to testing.

Hardware

The district has invested in equipment for Interactive Classrooms. Schools have multiple labs and computers in classrooms. Teachers and students are very appreciative of the equipment and use it routinely. However, while this equipment is being used, it is not always used to the extent possible. Additionally, some of the equipment is aging and needs to be replaced.

Instruction

Connectivity and access issues often result in lost instructional time. However, in spite of these issues, teachers are using technology in their instruction. The team saw evidence of Edmodo, Study Island, Accelerated Reader, and flipped classrooms being used. Teachers also encouraged BYOD. However, most students using BYOD were also using their own data plan, which raises CIPA compliance concerns. Some students were not familiar with the Microsoft Office Suite of applications. Neither teachers nor students were familiar with Digital Citizenship.

Professional Development

Teachers indicated few technology professional development opportunities. Many miss the TIS, but were unaware as to why he was not around. There was a lack of knowledge about many instructional resources underscoring the need for technology professional development.

Network Resources

Teachers and students do not have file storage options on the district network and have to save files onto USB drives. Many do not know about cloud storage options, and those that do may not be able to access them due to connectivity and access issues. The computer sometimes fails to connect to the network (again, a Wi-Fi issue) in enough time for the user to log on and for the logon script to execute, thus not connecting the user to their drives. Printing also appeared to be a problem in many schools.

HelpDesk

There did not appear to be a consistent work order system. Many indicated that there was only one person per building that could submit work orders and that many times issues were not resolved due to a lack of accuracy in reporting. Additionally, work order tickets were seen as having a very slow response time.

Leadership

Many teachers are concerned about the lack of technology planning and a district vision for technology. Those that were aware of a district technology plan indicated that their school was not part of the planning process. Many teachers expressed distrust of the DTC and stated that upper level technology leadership had a negative attitude. There was also a concern about funding levels for technology.

Review Team's Immediate Recommendations

- **Customer Service**

The Technology Department must adopt a customer service mentality. Change the culture of the Technology Department to one which is more service oriented.

 - Have them develop a department mission statement and statement of principles/beliefs.
 - Have the CIO read THE TECHNOLOGY DIRECTOR'S GUIDE TO LEADERSHIP by Don Hall, or maybe even read it in a study group with the TRT and network admin.
- **Communication**

The Technology Department needs to communicate with all users in an understandable manner. This should not be done through multiple message blasts each day using Impero.
- **Roles and Responsibilities**

There need to be clearly defined roles and responsibilities within the Technology Department to ensure swift response to end user needs.
- **Systemic Work Order System**

Each user should submit his/her own work orders. This will eliminate many communication issues. The system should communicate receipt, assignment, edits and closure to the user. Response to work orders should be within 24 hours with a resolution timeline.
- **Equipment Receipt**

Implement an equipment receipt system for any device removed from a location.
- **Inclusion**

The CIO should be included in Leadership meetings, as well as department meetings.
- **Student Access**

All students with signed AUPs should have access to the Internet and network resources.
- **Impero**

Document Impero installations and console access so that console access is restricted.
- **Website**

Request a redirect for the website from KETS. <http://www.spencer,kyschools.us> should be redirected to <http://publicschools.spencercounty.ky.gov>. Make sure that all information on the website is up to date and correct.
- **Resources**

Inform teachers and staff about the Home Use Program Inform students about the Student Advantage Program.

Review Team's Short Term Recommendations (By December 31, 2014)

- **Network Analysis and Configuration**
Contract with Extreme Networks to provide an in-depth network analysis and configuration/repair work to include:
 - Evaluation of packet loss
 - WAN analysis
 - Wireless network
 - NAC
 - N-Computing
- **Internet Filter**
Contract with iBoss to properly configure the filtering software. Among other things, iBoss needs to be configured so users are authenticated through computer login and all Microsoft online traffic should be allowed without authentication.
- **Virtual Server Cluster**
The virtual server cluster hosts need to be analyzed to ensure that resources are available for the servers to provide fast and reliable access to network users.
- **Training**
New technology employees need to be trained for their role and responsibilities (in house, contracted, and conferences such as KySTE).
- **Professional Learning**
 - The TIS should have one day a month in each school to meet with PLC groups to provide professional development to teachers (and principals) on:
 - the Work Order process
 - how iBoss works and how to log into it
 - the purpose and use of the Audio Enhancement system
 - Digital Citizenship
 - Impero
 - BYOD
 - OneDriveand model the use of technology.
 - The TIS should have monthly meetings with curriculum coaches to help with technology integration and follow up.
- **Student Access**
Simplify student passwords and access to resources.
- **Technology Webpage**
Provide an appropriate technology webpage with "How To" documents and videos to support end users.
- **BYOD**
Verify that the Board Policy and school SBDM policy on BYOD has been changed to allow students to bring and use their devices for instructional purposes.
- **Surplus**
Develop and implement a surplus plan to have surplus technology equipment removed from schools.

- **Imaging**
Implement Windows Deployment Server (WDS) or System Center Configuration Manager (SCCM) to create specific computer images to facilitate device deployment. Implement a utility to manage PC software updates such as SCCM or PDQ Deploy.
- **Access**
Make teachers administrators of their classroom computers.
- **Device Management**
Deploy Meraki Device Management software.

Review Team's Long Term Recommendations (By May 31, 2015)

- **Digital Citizenship**
Develop and implement a plan to intentionally teach and document lessons on Digital Citizenship at each school and at each grade level.
- **Inventory and Device Management**
Implement an inventory and device management system for all devices.
- **Restructure Technology Department**
There are several restructuring scenarios. However, positions should not be split i.e. TIS should not teach part time.
- **Online Classrooms**
Purchase a hosted website which would provide online classroom capabilities for teachers and provide ease of access to users.
- **Technology Funding and Planning**
Develop a plan to refresh Interactive Classroom equipment and computing devices. Restructure technology allocations so as to address district-wide vision and plan, as well as provide uniformity. Planning should include stakeholder representation.

Spencer County Elementary

The Technology Impact Review team was on site at Spencer County Elementary on September 30, 2014. Team members observed in classrooms and interviewed students, teachers, and school administrators. Generally, the team found the school to be well equipped with technology including document cameras, Smart Boards, mounted projectors, and polling devices (clickers). It was noted that some of this technology is aging and needs to be refreshed, i.e. some projector bulbs are dim. The teachers were vocal in their desire to use technology for instruction and student learning. However, the unreliability of network connectivity and difficulties with access to and use of network resources hinder their use of technology. Additionally, it was noted that there is a lack of professional learning opportunities in the area of technology. There is also a lack of communication with the technology department including helpdesk tickets which are sent to the principal. This may be due to a deteriorating relationship with the Technology Department. Several teachers verbalized a lack of trust of the Technology Department. Similarly, teachers are frustrated that there is no school technology plan or district vision for technology planning. Categories and bulleted responses are below:

Hardware

- Most classrooms have a plethora of technology devices (projector, Smart Board, document camera, audio system)
- Some Audio Enhancement systems were utilized appropriately
- Some projectors were dim (bulbs only replaced when blown)
- Some wiring exposed and hanging from ceiling
- 2 computer labs and 6 computers in classrooms

Instruction

- Edmodo is being used in 5th grade.
- Flipped Math classroom
- Bearly News
- Accelerated Reader is being used
- Study Island is being used (but not for RTI)
- Teachers use white board instead of Smart Board
- Students don't use Smart Boards
- Technology is not integrated into instruction
- Most intermediate classrooms encourage BYOD
- Loss of instructional time dealing with technical issues
- Little or no student exposure to applications (Office Suite, One Drive, Google Tools)
- Not meeting Common Core due to lack of working technology
- Technology is used for enrichment or games not creation
- Technology is included in sub plans
- Students cannot reach the Smart boards

Attitude

- Teachers want to learn how to use technology
- Teachers appreciate the impact technology can have
- Teachers want to use technology/integrate into lessons; desire

Communication

- Teachers are using class websites

- Students sign AUPs
- No communication to or from Technology Department

Connectivity

- Unreliable access to network; Wi-Fi; computers; etc.
- Sporadic Internet outages
- “Shy away from technology activities for students” due to unreliability
- “Technology can feel like a downer” due to unreliability
- N-computing devices down a lot
- Having the projector on counts as using technology on evaluation due to lack of reliability

Access

- LOTS of blocked sites
- Teachers can’t override blocked sites
- No individual logins.
- iBoss requires too much logging in
- Unnecessary complexity in network infrastructure; “If I have to log in 5 different ways and then still can’t access the website, I’ll quit trying.”
- Teachers are not admins on classroom workstations
- No downloading allowed
- No access to needed resources
- Student passwords are too complex
- Limited logon allowance restricts teacher BYOD (3)
- Labs are only used for testing. Teachers can’t access labs for instruction.

Network

- No saving on computers allowed
- No printing (teacher or student)
- Saving work on student computers is “impossible”
- No printing from student devices

Help Desk

- Slow reply to work order requests
- Poor response to complaints/issues; move on or quit using it if not fixed
- No real system in place—email the principal

Professional Learning

- Training is VERY limited (no need if the technology doesn’t work)
- Lack of knowledge of resources (One Drive)
- Little District training available

Leadership

- No guidance from the Technology Department
- “Do not trust DTC”
- No technology plan
- No district vision for technology planning
- No money provided for what is needed
- Negative attitude of upper level technology department

Taylorsville Elementary

The Technology Impact Review team was on site at Taylorsville Elementary on October 1, 2014. Team members observed in classrooms and interviewed students, teachers, and school administrators. Generally, the team found the school to be well equipped with technology including document cameras, Smart Boards, and mounted projectors. It was noted that some of this technology is aging and needs to be refreshed, i.e. some projector bulbs are dim. The teachers were vocal in their desire to use technology for instruction and student learning. However, the unreliability of network connectivity and difficulties with access to and use of network resources hinder their use of technology. Additionally, it was noted that there is a lack of professional learning opportunities in the area of technology. There is also a lack of communication with the technology department including helpdesk tickets which are completed by the secretary. Hardware is removed with no explanation or communication. Several teachers verbalized frustration with the Technology Department. Similarly, teachers are frustrated that there appears to be no purchasing plan and that purchase orders get “bottlenecked” in the technology office.

Categories and bulleted responses are below:

Hardware

- Most classrooms have a plethora of technology devices (projector, Smart Board, document camera, audio system)
- Some teachers have iPads, others don't. They don't know why.
- There are iPads, but no Volume Purchasing Program set up to purchase apps
- Some projectors were dim (bulbs only replaced when blown)
- Computers are removed without teacher or administrator notification

Instruction

- They are encouraging multimedia projects
- There is great school administrative support
- Social media is blocked for some teachers
- School has a wonderful vision for technology
- Work order response time negatively impacts instruction
- Students need to use technology for learning—not just testing
- The Smart board software (Notebook) too slowly for student interaction with the board

Attitude

- The students perceive technology as being “all good.”
- Some teachers stopped using technology due to unreliability
- Teachers want to use technology/integrate into lessons; desire
- “Squelched plans because of an old building or Technology Department not liking the idea.”
- Technology is “hideous/unreliable”; it never works.
- Willing to learn; want technology

Communication

- Little or slow communication from Technology Department
- Purchase orders are “bottlenecked” in the Technology Department
- Random purchasing and assigning with no tracking
- Not following the Technology Plan

Connectivity

- Unreliable access to network
- "The network is down more than up;" affects MAP scores

Access

- LOTS of blocked sites
- A month or more turnaround time to unblock sites
- Teachers can't override blocked sites
- Lost a computer lab which is now an enrichment class; students only test
- Devices are not available for students.

Help Desk

- "Work orders are non-existent"
- Equipment disappears; no one tells us and often it does not return
- Negative comments/treatment Technology office; excuses are given
- Helpdesk tickets are totally inefficient; "It never gets done."

Professional Learning

- Training is VERY limited; need to learn about resources
- "Had a teacher 7 years ago who taught about the Smart boards"

Spencer County Middle School

The Technology Impact Review team was on site at Spencer County Middle School on October 1, 2014. Team members observed in classrooms and interviewed students, teachers, and school administrators. Generally, the team found the school to be well equipped with technology including document cameras, Smart Boards, mounted projectors, and polling devices (clickers). However, the unreliability of network connectivity and difficulties with access to and use of network resources hinder their use of technology. Additionally, it was noted that there is a lack of professional learning opportunities in the area of technology. Categories and bulleted responses are below:

Hardware

- Most classrooms have a plethora of technology devices (projector, Smart Board, document camera, polling devices (clickers), audio system)
- No student computers; taken away and not replaced

Instruction

- Students taking quizzes using clickers
- Tech class is great, but not all students can take the class
- Students learn Office Suite one semester in 6th grade
- Digital Citizenship and 21st Century Skills are not being taught
- Students can email work to teachers, but have to use personal email to send it
- Some teachers use Edmodo or other site to post classroom information
- Use Study Island, Accelerated Reader, and MAP
- Students don't have access to Office Suite

Attitude

- "Technology is a nightmare"
- We are going backwards—everything has to be handwritten
- Students feel they are prepared
- Have clubs—Minecraft, Legobotics, and Stop Motion
- "Superintendent is not techy so he doesn't support technology"

Communication

- Items are removed from classrooms without warning

Connectivity

- Unreliable access to network; Wi-Fi is spotty
- Lab crashes often
- "There is no consistency—works one minute, doesn't the next"
- Students use their own data plans because they can't connect to Wi-Fi (Told to do this by the Technology department)
- "Technology can feel like a downer" due to unreliability
- N-computing devices down a lot

Access

- LOTS of blocked sites
- Teachers are told that bandwidth is keeping them from video streaming and other sites
- N-computing lab does not work well/login is for MAP only
- No student devices that work
- Lots of technology for teachers, but it is unreliable—"you never know when it will work"
- Teachers do not have administrative rights on their computers
- No replacement equipment
- Cannot access needed resources
- Students use MAP login—not individual login
- No email for students; "If there is, then students are not aware of it or how to access it"
- Technology is only used for testing—MAP and Accelerated Reader
- No access to Office Suite on N-computing devices

Network

- "Too many black screen messages from Technology"
- Software updates don't take place and can't download
- There is no saving; no training on OneDrive

Help Desk

- New Technician "has been wonderful"
- Hesitant to speak to the Technology Department because of their attitude

Professional Learning

- Teachers don't know about collaborative tools or other resources
- No training on BYOD—"but not needed because things don't work" (Wi-Fi/iBoss)
- No professional learning for equipment and tools
- Lack of Professional Learning support from the district.

Leadership

- Funding dried up
- Personal and classroom money being used to purchase technology
- Promises were not kept
- No replacement plan

Spencer County High School

The Technology Impact Review team was on site at Spencer County High School on September 30, 2014. Team members observed in classrooms and interviewed students, teachers, and school administrators. Generally, the team found the school to be well equipped with technology including document cameras, Smart Boards, and mounted projectors. It was noted that some of this technology is aging and needs to be refreshed, i.e. some projector bulbs are dim. The unreliability of network connectivity and difficulties with access to and use of network resources hinder their use of technology. Additionally, it was noted that there is a lack of professional learning opportunities in the area of technology. Similarly, teachers are frustrated that there is no school technology plan or district vision for technology planning.

Categories and bulleted responses are below:

Hardware

- Most classrooms have a plethora of technology devices (projector, Smart Board, document camera, audio system)
- No sound system or mics in the Music Department
- "We have outdated projectors and small screens"
- "There is a lack of equipment and we are awaiting installs"
- Getting rid of classroom printers and going solely to copiers, but they don't always work
- Equipment is outdated—Smart TVs are coming so not replacing projectors
- TV studio not being utilized
- 2 computer labs and 6 computers in classrooms

Instruction

- Using CIITS for lesson plans, sharing of information
- Teachers use Edmodo and Schoology for class discussion boards and homework
- Edgenity works well; it has its own server
- Administrators are very supportive, but evaluate easy on technology use and integration because of issues
- Network issues interfere with instruction
- Lack of student understanding of 21st Century Skills
- Students do not have knowledge of Digital Citizenship

Attitude

- "I don't feel like the technology is improving from year to year"
- "Board Policy does not allow for BYOD"
- Students and teachers like Edgenity resources
- Students and teachers do not like using school computers because they are too locked down
- Students and teachers do not feel that students are College and Career Ready in technology; they don't know Office Suite unless they learned on their own

Communication

- Various communication tools being used (One Call, Remind, Twitter, digital newsletters)
- Students sign AUPs
- No communication to or from Technology Department
- There are no teacher websites; teachers only use the school website to access the Infinite Campus portal

Connectivity

- Unreliability of network for student use
- Sporadic Wi-Fi; issues with access points
- “Wi-Fi is terrible”

Access

- LOTS of blocked sites
- Students love using their phones by only one teacher per day allows it on average
- Students feel they have adequate access to technology—library open before and after school
- Students like BYOD
- “Better technology access than in the past”
- Limited or restricted access to Internet
- There are too many logins to access the Internet
- Students use their personal data plans to access the Internet
- “There is equal access for all students because we don’t give them anything”
- There is a lack of computer lab time; taken over by MAP testing

Network

- No saving on computers allowed
- No knowledge of OneDrive; saving is not always happening
- No printing (teacher or student)
- Saving work on student computers is “impossible”
- No printing from student devices

Help Desk

- “It takes an Act of God to get things hooked up and/or working”
- Work orders are given to the secretary who gives them to the technology department

Professional Learning

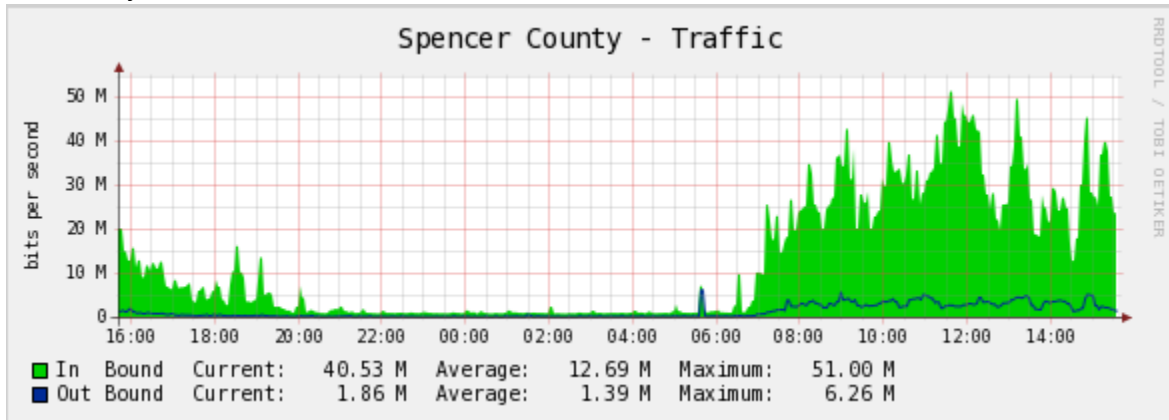
- Lack of Professional Development support at the district level, when offered it is for the upper level
- No training has been offered for Grade Cam, but it is being piloted
- There is no training or modeling for technology

Leadership

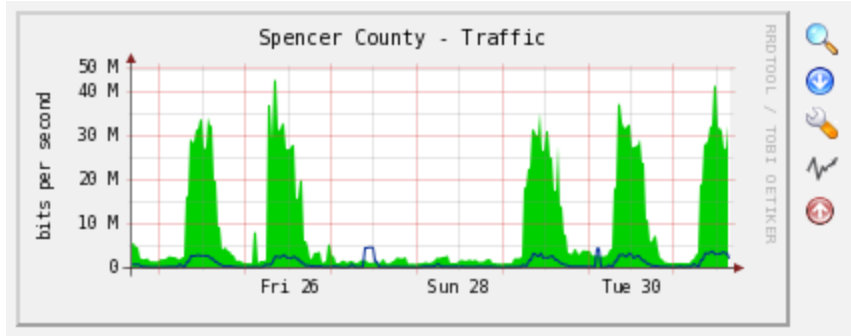
- “Leadership gets it”
- IT is understaffed
- The Technology Department is very territorial
- Need more technology funding from the district; schools are required to upgrade their own equipment
- The schools have no input on technology purchases, planning, vision, wants/needs
- “We are not part of the decision making process for technology”

Appendix A: KETSView Report

Wednesday, October 1, 2014:



The past week:



The last month:

