

Washington County Public Schools Digital Learning Plan



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Superintendent
December 1, 2015

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Executive Summary

Washington County Public Schools (WCPS) is continually looking for ways to inspire and transform teaching and learning. In June of 2015, Dr. Clayton Wilcox accepted the [Future Ready District Pledge](#) with a commitment to making WCPS Future Ready. The end goal of Future Ready Schools is aligned with current and past efforts, “To provide students with the education they need to thrive in a globally connected world, we must find ways to design, fund, acquire, and maintain the infrastructure that will make connectivity a reality for every teacher and student in the classroom” (p.9). This Digital Learning Plan is framed in accordance with these end goals and the recommendations set forth by the [Office of Educational Technology](#).

The development of the Digital Learning plan was a collaborative effort with three committees: The Teacher Advisory Committee; The Curricular Advisory Committee; and Digital Steering Committee. The [Teacher Advisory Committee](#) is representative of approximately 45 school-based teachers who were identified by colleagues as exemplars in advancing digital learning. The [Curricular Advisory Committee](#) is comprised of all supervisors in the Division of Instruction. The [Digital Steering Committee](#) is representative of key district-level staff and three principals with one-to-one schools in elementary, middle, and high. The three levels of educators assessed prior efforts and practices to develop a visionary Digital Learning Plan that will serve all of WCPS.

As an organization, our past efforts and experiences have poised us for this strategic advancement of digital learning. Future Ready recommends phased implementations prior to full scale deployment; the privilege of having several schools as one-to-one schools for several years has provided the foundation to adopt higher levels of implementation (p. 10). When these past efforts are coupled with the recommendations of the aforementioned committees, there is no doubt that WCPS can quickly and readily become a leader in advancing digital learning.

A commitment to advancing our digital learning experiences for students and staff is in alignment with the WCPS vision of building a community that inspires curiosity, creativity, and achievement. Foundational to this vision is a focus on improving teacher expertise and efficacy, thus creating a culture that supports learning in the classroom and beyond the school walls. As recommended by Future Ready, “Equally important is the investment in high-quality professional development so teachers enter classrooms ready to use the new tools to support personalized learning for students” (p. 10). This plan will provide a clear path for student and staff learning that is founded on a platform of strategic support and coaching.

Finally, WCPS believes that the success of this initiative will be measured by three distinct outcomes—teaching and learning, equity, and professional development—all of which are further detailed in the plan.

Digital Learning Model

WCPS is committed to creating a systemic culture of personalized teaching and digital learning that spans 2-12, and prepares students through the Maryland College and Career Readiness Standards to graduate ready to contribute in the global economy. In an effort to move beyond traditional one--size--fits-all models of schooling and toward personalized learning environments, student-centered approaches to instruction will be employed to: produce high levels of achievement, empower students in their learning, increase learning equity, increase graduation rates, and decrease achievement gaps.

Technology will be integrated into daily instruction when and where it is appropriate. The use of technology is not intended as a substitute for great teaching—rather it is a tool to enhance great teaching. WCPS will not eliminate great books, *all* textbooks, or *all* print materials, however, it is expected that teachers will increasingly use a digital format for teaching and learning where it is appropriate and efficient.

The instructional practices supported in this Digital Learning Plan are grounded in research. All digital resources were vetted with the recommendations of [Project Red](#) and the [Substitution Augmentation Modification Redefinition Model](#) (SAMR) to ensure they promoted critical thinking and collaborative learning opportunities in alignment with current research.

All WCPS students will have the opportunity to use age- and learning-appropriate technology to engage in learning experiences, assignments, and collaborative research projects. Students will have access to not only the hardware and software needed, but also a vast collection of resources including multimedia tools, web-based applications, and content specific materials. This will provide WCPS teachers with high quality resources to meet individualized learning needs in every classroom.

Through the implementation of this plan, WCPS will strive to prepare its students and teachers with the necessary skills to inspire the highest level of learning and achievement.

Desired Outcomes and Measures

Teaching and Learning

The goals of the Teacher and Curricular Advisory Committees were to provide digital resources that support all students with the skills and understandings necessary to ensure their success in a globally connected and integrated society. These skills and understandings were based on the research of Project Red and the SAMR Model.

Classroom Digital Resources

Based on these documents, it was determined that system-wide digital resources should have the capacity to do the following if learning experiences are to be maximized:

- 1) Support self-evaluation and reflection
- 2) Support photo and/or video annotation
- 3) Support compare and contrast
- 4) Support word processing with multimedia
- 5) Support real-time collaboration
- 6) Support mass communication and feedback
- 7) Support personalized learning
- 8) Support project-based learning
- 9) Support formative or summative assessment
- 10) Are considered user friendly and cost effective

****NOTE:** All digital resources had to meet several of the above stated criteria to be considered for the device digital image.

Based on the stated criteria, a rubric was developed to assess the potential of each digital resource. This effort is aligned with Future Ready who emphasizes, "Your main evaluation criteria should be how responsive and usable devices and software are in helping students and teachers complete various tasks" (p. 45). Digital resources that supported the desired tasks were then vetted by each team of teachers.

The teams of teachers recommended these digital resources be deployed to student devices:

iPads will come loaded with:		Google Apps for Education recommended for all students:	Microsoft Office Suite recommended for all students:
iBooks Notes Reminders Camera Safari	iMovie Pages Numbers Keynote iTunesU GarageBand	Google Docs Google Drive Google Sheets Google Slides Google Classroom Google Chrome Google Maps Google Earth	Word Excel PowerPoint

The following applications are recommended for installation by level:

	Primary	Elementary	Middle	High
Adobe Voice	X	X	X	X
Aurasma	X	X	X	X
Book Creator	X	X	X	X
Brytewave	X			
Class Dojo	X	X	X	
EdPuzzle	X	X	X	X
Educreations	X	X		
Evernote	X	X	X	X
Explain Everything		X	X	X
Front Row	X	X	X	
Green Screen	X	X	X	X
Hopscotch	X	X	X	
iCell			X	

iNigma (QR Scanner)	X	X	x	X
Khan Academy		X	X	X
Lino	X	X	X	
Nearpod	X	X	X	X
ParentVUE	X	X	X	X
Pearson eText	X	X	X	
Photoshop Mix				X
Piano Free	X	X	X	
Schoology	X	X	X	X
Seesaw	X	X	X	
Shadow Puppet	X	X	X	
Showbie		X	X	
Side by Side	X	X	X	X
Simplemind	X	X	X	X
Sketchbook	X	X	X	X
Skitch	X	X	X	
Socrative		X	X	X
StudentVUE	X	X	X	X
Taiko Drums	X	X		
TestNav	X	X	X	X
Touchcast		X	X	X
Voice Recorder Pro (VRP7)	X	X	X	

**Please [click here](#) to access the description and functionality of each app.

Curriculum and Instruction

The Curricular Advisory Committee reviewed all current digital resources to determine what best supports the advancement of the WCPS Curriculum. To ensure that current and future software were in alignment with the curriculum and selected with prudence, a rubric was developed to assess each digital resource. The [WCPS Curriculum Software Rubric](#) focuses on the following criteria:

- 1) Alignment to the Curriculum: the ability to integrate into the WCPS Curriculum
- 2) Vetting: the process used to select software
- 3) Population Alignment: the ability to support the identified population
- 4) Compatibility: the ability to run on multiple platforms
- 5) Validity: mandated or supported by other external agencies
- 6) Sustainability: criteria to support current and new resources

The Division of Instruction employed the said criteria to identify the systemic digital resources that would be imaged during the implementation of this Digital Learning Plan. The following software supports a significant portion of the population and has been identified as the [WCPS Curriculum Software](#):

Active Classroom	Kindergarten Readiness	School City
Course Compass	MAP Assessment	Stride Academy
Flash Player	Microsoft Office	
Follett Destiny	Safari Montage	

Device Selection

The Teacher Advisory Committee reviewed numerous devices prior to making any recommendation. As a committee, they first focused on the applications and programs that could support teachers in personalizing education and advancing critical thinking skills. Once the said applications were vetted, the committees then determined the device that would best support the instructional platform. The devices that were assessed were compared on both an application process and functionality basis. The [WCPS Device Comparison](#) table illustrates the devices that were perused and the functionality of each device.

The primary teachers, elementary teachers, middle school teachers, and high school teachers each recommended the iPad with a stand up case as the optimal device for students in the classroom. The primary reasons for the decision were based on the following:

- Versatility: the iPad is easily portable can move well within or outside of the classroom setting and is contained in a quality protective case

- Longevity: the system currently has numerous iPad 2 models that are still functioning well in excess of five years
- Functionality: as evidenced by the comparison table, the iPad is a quality product with a hard drive that enables the device to work offline
- Instructional Apps: currently, Apple has in excess of 80,000 applications (many are free) that are categorized as education
- Sustainability: with economical pricing and longevity, the iPad has the greatest chance to enhance systemic access and equity

The Teacher Advisory Committee also recommended the device for teachers to be the MacBook Air. The basis for this decision is the ability for this device to host the student instructional platform with the iPad. In addition, the MacBook Air can serve as the primary computer in the classroom to support projection, document cameras, and printing needs.

Bring Your Own Device (BYOD)

In addition to this Digital Learning Plan, WCPS supports and encourages the use of personally-owned devices. To be progressive in this initiative, the WCPS Board of Education has approved policies and regulations that clearly define expectations and responsibilities. The [Use of Personally-Owned, Electronic Devices Policy](#) and [Use of Personally-Owned, Electronic Devices Regulation](#) clearly define and state the purpose of the use of personally-owned devices as a part of the student's academic program.

To support BYOD, WCPS has created guest networks and cloud storage that students should employ to access digital resources. As recommended by Future Ready (p. 62), WCPS does use Lightspeed filtering to guide access to appropriate resources and content. In addition to filtering, all students also have Office 365 accounts and Google Accounts so information can be saved in the cloud and accessed with varied devices and locations.

In accordance with Future Ready (p. 48), this plan recommends that families consider the devices selected in this Digital Learning Plan should they be planning to purchase devices that students will bring to school. To that end, it is recommended that compatibility with Apple platforms and applications is at the forefront in the decision-making process for personal purchases for devices that will be brought by the student to the school for educational purposes.

Equity

The WCPS Digital Learning Plan is committed to equity for student access and testing environments. The student access to digital resources should extend beyond the school walls and support continuous learning irrespective of the location.

Access

The community of Washington County Public Schools is poised to support the Digital Learning Plan. In addition to every school having access to Wi-Fi in all learning environments, community agencies are

prepared to support continuous learning through resourced buildings that support access. As illustrated by the [Community WIFI Availability](#) resource table, every community in Washington County has safe locations for students to frequent and access free Wi-Fi.

To support student access to digital learning resources, schools will develop a “sign out” program for their devices. When WCPS does reaches a standard of a device for every child, reconsideration should be given to the limitations on students taking the device home during the school year and possibly summer break.

Supporting Testing

The impact of testing on school schedules, students, and learning continues to be a national topic of conversation. While finding the right balance of assessments is a current effort, this Digital Learning Plan does have the capacity to favorably impact testing. The administering of prior assessments clearly reflects the schools with higher device counts supported larger testing groups, thereby, completing the testing sessions in a shorter time frame with less alterations to the daily schedule.

This Digital Learning Plan will increase the number of collective devices while at the same time create equity across all schools. Understanding this plan supports a standard of one device per two students (Grade 2) and one device per student (Grades 3-12), Table 1 illustrates the potential impact of this plan.

Table 1.1: Sample of Time to Complete Assessments at one unit per day (one session and one grade)

	<i>Ratio of Student to Devices</i>		
	4:1	3:1	2:1
<i>Elementary School</i>			
PARCC	12 Sessions	9 Sessions	6 Sessions
MAP	7 Sessions	5 Sessions	3 Sessions
<i>Middle School</i>			
PARCC	24 Sessions	18 Sessions	12 Sessions
MAP	8 Sessions	6 Sessions	4 Sessions
<i>High School</i>			
PARCC	12 Sessions	9 Sessions	6 Session

In addition to decreasing the number of sessions needed to complete testing, the influx of mobile devices also possesses additional benefits. These include:

1. The capacity to support a better testing environment with no need to transition to testing areas and the ability to begin instruction upon completion of the assessment.
2. The ability to minimize the disruption to the school day as classes do not need to be displaced or impacted by labs being consumed for testing.
3. The ability to decrease or eliminate alternative school-wide testing schedules to support displacement or minimal resources.

Professional Development

WCPS is committed to providing relevant and timely professional development by engaging faculty in a cycle of inquiry that promotes learning, reflection, innovation, and sharing. The intent of professional development is improved teaching and learning; the impact on students is a deeper understanding and application of content. Technology alone will not secure this impact. It takes the expertise of teachers who integrate technology into the curriculum, align it with learning goals, and develop engaging learning opportunities.

WCPS plans to offer a variety of professional development opportunities for all professional staff. These experiences will help support the infrastructure, implementation, and instructional practices. To advance professional learning, a variety of practices including webinars, workshops, and video tutorials will be employed to support staff. In addition, trainings will vary for IT, library media, lead teachers, administration and teachers.

Instructional Staff

The advancement of the Digital Learning Plan will rely on the expertise of the lead teacher, the media specialist, administration, and expert teachers. The development of an image for each level provides two distinct advantages: it provides vetted resources that align to advanced instruction; and it provides experts who have already attained a level of proficiency with the specific applications and programs. The following efforts will be used as a foundation for supporting advanced digital resources and instructional practices:

1. Lead Teachers: to attend 0.5-day training once per month focused on coaching teachers to employ digital resources in conjunction with the curriculum. Lead teachers will be expected to support, co-teach, and train teachers in the use and application of specific digital resources in the classroom.
2. Media Specialists: to attend all day training once per month for the remainder of the school year and to attend 1.5 hour per month training every month for FY 2017. Media specialists will have the capacity to support apps, iPad and MacBook Air basics, and functionality; this includes

concerns with logins, projectors/printers, school-level connectivity issues, pushing out new apps, and filtering device deficiencies.

3. Department Leaders: monthly department leader meetings will focus on implementing the digital curriculum in concert with various applications.
4. Administration: school-based administrators will continue to be enriched through monthly council meetings, aspiring leader trainings, and other venues such as modules.
5. Centralized Professional Development: weekly professional learning sessions will be offered that align to the Digital Learning Plan and staff may also make specific requests for professional learning.
6. Modules: identified experts in the applications will make video modules that demonstrate the functionality of the various digital resources on the created image.

Information Technology Staff

Professional development is provided to all technology department members based on their specific job assignments. Microsoft online courses are provided to all Microsoft administrators and Juniper courses are provided for all network administrative support personnel. Computer repair technicians are required to maintain current certifications to service devices under warranty such as Lenovo and Apple computers. Additional training is provided as needed.

Trainings and certifications that computer repair technicians are currently completing and will be completed by June 2016, are as follows:

Mac OS X Certification Program Apple Certified Associate: Mac Integration is the starting point on the Mac OS X certification path, addressing the basics of integrating a Mac into a Windows or other standards-based environment.

For Service Technicians MacSvcOS:

1. Mac OS X Troubleshooting for Technicians (2 days) - Created specifically for Apple Authorized Service Providers. Teaches students how to use their knowledge of the Mac OS to troubleshoot the Mac OS and isolate a hardware issue.
2. MacSvcHw: Apple Certified Mac Technician Training (5 days) - Teaches students portable and hardware specifications, troubleshooting techniques, technician safety, take-apart procedures, and service-specific guidelines and resources.

Equitable Implementation Plan

Infrastructure Needs and Development

The WCPS Digital Learning Plan is founded on a commitment to equity in digital resources across the community. While variances are anticipated in specialized programs, this plan aims to develop a comprehensive deployment plan that advances equity and access for all students Grades 2-12.

Connectivity

According to Future Ready (p. 17), “The US Department of Education recommends a minimum connectivity speed of 100 Mbps and a target speed of 1 Gbps per 1000 students for schools by 2018. This translates to a per student target of at least 1 Mbps to meet the 2018 ConnectEd initiative goal.” Connectivity to the WCPS’ network is provided by both Cat6 cabling and wifi connections. Currently, WCPS students use less than 2 Gbps; however, WCPS has an expandable system capable of accelerating up to 10 Gbps should the usage increase.

The wifi connections are provided by Aerohive access points that authenticate users by using a radius server in conjunction with Active Directory. A guest wifi internet connection is also provided for all bring your own devices (BYOD). During the 2014-2015 school year, Washington County Public Schools (WCPS) replaced all existing access points with 1270 Aerohive units. This effort brings WCPS in alignment with the recommendation from Future Ready (p. 35) stating access is supported throughout the district in any place that supports teaching and learning.

Device Management

The Mobile device management (MDM) for WCPS is aligned to the recommendations as supported in Future Ready. According to Future Ready (p. 57) the MDM should support remote management, remote locking, and student access to support digital citizenship. The intent of MDM is to optimize the functionality and security of mobile devices while simultaneously protecting the WCPS’ network. All WCPS’ mobile devices are managed with the Meraki MDM system. All desktop computers and their computer operating system images are managed with the Microsoft System Center Configuration Manager (SCCM). Upon adoption of this plan, WCPS will upgrade the device management system to JAMF.

Filtering

All internet filtering is controlled through the LightSpeed internet filter which is Children’s Internet Protection Act (CIPA) compliant. It has the ability to be very specific and assign multiple levels of access based on Active Directory credentials. This ability enables different levels of access to be assigned to elementary, middle, and high school students and allows special sites for advanced-level classes. The support of LightSpeed supports the Future Ready (p. 61) requirement stating “All connections must be filtered in order to be in with [E-rate](#).”

Redistribution of Devices

Careful planning is required to maximize the useful life of currently owned WCPS' devices. As new devices are supplied school wide, existing devices that are four years old or less may be redistributed to other schools or programs. Schools will receive replacement devices based on the age of their current devices with the oldest devices being replaced first. The following items are being considered for redistribution:

1. Lenovo and Dell Laptops: if necessary, to support Olsat and possible needs with the primary MAP Assessment (Apple has stated an app will be available in December to support the primary MAP Assessment).
2. MacBook Air Laptops: all schools will maintain enough MacBook Airs to ensure every teacher and administrator has a device. Schools with surplus MacBook Airs will be redistributed to teachers throughout WCPS with a tentative redistribution date of June 2016. If schools possess devices purchased by local community funds, they would not be part of the exchange, but also will not be replaced by WCPS.

Timeline and Locations for Deployment

The WCPS Digital Learning Plan is committed to an equitable distribution plan that advances teaching and learning. The current process for providing devices to students varies greatly across the school system. The WCPS Digital Learning Plan will employ the following strategies to advance equity and access by applying a universal standard:

1. Standard of one iPad device for every student in every school
 - a. January 2016: administer the purchased iPads to every school except (Bester, Cascade, Fountain Rock, Maugansville, Old Forge, Paramount, Smithsburg Elementary, Technical High School, and Family Center)
 - b. January 2016: distribute the keyboards at a standard of enough keyboards to test the largest grade of every school
 - c. June 2016: administer the iPads to schools previously excluded and collect the student MacBook Air Laptops from the respective schools and redistribute them to all teachers within WCPS

Cost Effectiveness and Sustainability

Device

The WCPS Digital Learning Purchase Plan is based on providing every school with electronic devices (iPad 4 or iPad Air) at the following ratios: one device per student in grades 3 – 12 and one device per 2 students in grade 2. The devices will be maintained on a five-year refreshment cycle that reaches a predictable and consistent expense within a five years of the initial purchase. The following is the proposed operating budget:

1. <u>Year one (FY 2016):</u>	
2,500 devices purchased (411.80 per unit).....	\$1,029,500
9,800 financed devices (411.80 per unit).....	\$258,055
<u>Essential accessories (carts, cases, keyboards).....</u>	<u>\$663,547</u>
	\$1,951,102
2. <u>Year two (FY 2017):</u>	
Finance Payment (management system, accessories, support).....	\$1,999,998
Apple supports: provisioning, cases, full setup and delivery	
3. <u>Future years:</u> Due to the inclusion of currently-owned devices in the refreshment cycle, annual costs will begin at approximately two million dollars and eventually reduce to a sustained number of 1.7 million dollars. The following represents the anticipated long-term cost to support the devices:	
3,800 devices per year (\$411.80 unit price).....	\$1,564,840
3,800 cases (\$15.00 per unit).....	\$57,000
<u>Device Management (\$5.00 per unit for all devices).....</u>	<u>\$95,000</u>
	\$1,716,840

** NOTE: Not included in this annual cost is the residual value of the devices. Based on current residual values, five year iPads are worth approximately \$20.00. If WCPS were to resell the 3,800 iPads it would yield annual recurring funds around \$76,000 that could be applied to other ongoing expenses. The said numbers illustrate a standard of a device per student for every school (Grades 3-12) and a device for every two students (Grade 2) could be attained at an annual cost of approximately 1.7 million dollars. When the annual expenditure of approximately 1.7 million dollars for student devices is divided among 19,000 students, the cost per student is approximately \$90.36 per school year or approximately 50 cents per student per school day. As recommended by Future Ready (p.49), WCPS should consider adding a yearly budget line item for technology on a per pupil basis in alignment with the stated anticipated costs.

Table 1.2: WCPS Student Device Inventory and Sustainable Replacement Cycle

WCPS Student Device Inventory and Sustainable Replacement Cycle									
Year(s)	Purchased Devices	1 Yr.	2 Yr.	3 Yr.	4 Yr.	5 Yr.	6 Yr.	Purchased (2015)	Total Number of Devices
Jan 2016*	9,800	1,182	2,397			3,164		2,500	19,043
2016-2017	0	9,800	1,182	2,397			3,164	2,500	19,043
2017-2018	3,444	0	9,800	1,182	2,397			2,500	19,323
2018-2019	2,680	3,444	0	9,800	1,182			2,500	19,606
2019-2020	2,280	2,680	3,444	0	9,800			2,500	20,704
2020-2021	3,800	2,280	2,680	3,444	0	6,796			19,000
2021-2022	3,800	3,800	2,280	2,680	3,444		2,996		19,000
2022-2023	3,800	3,800	3,800	2,280	2,680	2,640			19,000
2023-2024	3,800	3,800	3,800	3,800	2,280	1,520			19,000
2024-2025	3,800	3,800	3,800	3,800	3,800				19,000
2025-2026	3,800	3,800	3,800	3,800	3,800				19,000
2026-2027	3,800	3,800	3,800	3,800	3,800				19,000
2027-2028	3,800	3,800	3,800	3,800	3,800				19,000
2028-2029	3,800	3,800	3,800	3,800	3,800				19,000
2029-2030	3,800	3,800	3,800	3,800	3,800				19,000
2030-2031	3,800	3,800	3,800	3,800	3,800				19,000
2031-2032	3,800	3,800	3,800	3,800	3,800				19,000

Key To WCPS Student Inventory and Sustainable Replacement Cycle	
	Represents the current WCPS owned iPads in circulation (1,182 iPad Airls, 2,397 iPad 4, and 3,164 iPad 2)
	Represents the planned purchased iPads in Dec. 2015 to support testing
	Represents zero percent financing for iPads, Mobile Device Management System, and the provisioning of all devices (1 time)

Table 1.3: WCPS Student Device Sustainable Purchase Plan

WCPS Student Device Sustainable Purchase Plan				
School Year	Finance Payments at zero percent interest	Purchase Price for iPads	Accessories (keyboard, cases, and management system)	Total Cost for Student Devices per Year
2015-2016	\$258,055	\$1,029,500	\$663,547	\$1,951,102
2016-2017	\$1,999,998	0	0	\$1,999,998
2017-2018	\$523,130	\$1,418,239	\$51,660	\$1,993,029
2018-2019	\$849,205	\$1,103,624	\$40,200	\$1,993,029
2019-2020	\$894,266.40	\$938,904	\$85,960	\$1,870,370.40
2020-2021		\$1,564,840	\$152,000	\$1,716,840
2021-2022		\$1,564,840	\$152,000	\$1,716,840
2022-2023		\$1,564,840	\$152,000	\$1,716,840

Maintenance and Repair

Prevention

All WCPS devices are protected by Microsoft endpoint antivirus security software. During the summer, and as technicians service devices routinely, preventive maintenance is performed as appropriate. As recommended by Future Ready (p. 63), digital citizenship will also be supported by passwords, protective cases, and device tracking software. As the universal standard for device distribution reaches approximately one device for every student in every school, schools should consider personalizing the device to provide onus and accountability.

Warranty Information

All iPad devices come with a one-year full warranty that is tracked by each device. As a general rule, once the warranty is expired, parts are purchased to repair devices as long as the cost of repair is 50% or less of the replacement cost. Age of the device is considered in determining the value of repairing a device as well. In alignment with Future Ready (p. 64), WCPS should consider imposing a usage fee to build a reserve to support incidentals and/or maintenance fees if it chooses to personalize the device.

Cost of Accessories

All devices inclusive of cases and keyboards are on a consistent refreshment cycle no greater than five years. Replacement costs of accessories such as charging cords or keyboards should be supported at the school level. Consideration would be given if it is an excessive expenditure due to extended circumstances.

Supplemental Inventory

In accordance with Future Ready (p. 64), districts should have additional devices to support students and teachers during the repair process. The industry standard is established at two percent and WCPS should maintain this standard to support general maintenance and repair; the current Digital Learning Plan was framed with a three percent standard. This is especially necessary if the students are afforded the opportunity to personalize the device.

Assessing Implementation

Effectiveness of Infrastructure and Network

Instructional Technology components are continuously growing in all classrooms from grades 2-12, which necessitates continuous monitoring of all network components. It is an ongoing process to keep the infrastructure upgraded to handle the increased load of online resources and additional student devices.

The WCPS Wide Area Network (WAN) and Local Area Networks (LAN) are continuously monitored to determine areas needing improvement and to verify any equipment upgrades or network adjustments are truly improving overall network performance. Live monitoring identifies areas of network saturation change in a school building. Network access points are adjusted and/or installed to prevent overloading of a single access point. The WCPS WAN and LAN's are monitored with SolarWinds network monitoring software that provides live data on all network traffic. This provides the data needed to determine the areas of the network that need to be upgraded or adjusted for load balancing.

Repairs of user devices or network infrastructure are monitored through an electronic work order system-SolarWinds Web-Help-Desk. All repair requests are logged into this system. The system is monitored for the type of repairs being requested and how long it takes for work orders to be completed. The causes of the work orders are also monitored to determine if there is a specific model of device failing or patterned concerns to minimize chronic concerns.

Instruction

The WCPS Digital Learning Plan is committed to quantitative and qualitative metrics that assess the implementation and ability to advance teaching and learning. To that end, WCPS should employ the following metrics to assess the effectiveness of this Digital Learning Plan:

1. Reading, Writing, and Mathematics: the improvement of student achievement as measured by state and local assessments
2. Attendance and Behavior: the improvement in attendance as measured by the school attendance rate and the behaviors as measured by school-based teacher referrals
3. Paper Usage: the use of paper usage of each school
4. Apple Education Technology Profile (ETP): the use of the ETP survey to ensure schools are progressing in using digital instruction to advance teaching and learning

All schools should also strive to attain the school or district Apple Distinguished Award as this recognition is also grounded in the quality of digital learning.

Professional Development

The Digital Learning Plan has clearly identified the various venues that will be employed to advance teaching and learning. The WCPS Professional Learning survey will continue to be employed to assess the effectiveness of current experiences. In addition, this survey and the staff portal will continually monitor and respond to the request(s) for future professional learning topics as requested in these assessments.