Excellence for All
King George County Schools
Technology Plan
2018-2021

Contents

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Executive Summary

The King George County School district's Technology Plan outlines the multi-year strategic technology goals and describes the use of technology throughout the district. The plan supports the King George County School's vision, mission, and student achievement goals and is aligned to Virginia's Department of Education's State Educational Technology Plan.

Technology use within King George County is growing with the introduction of the e-Backpack Initiative. A digital transformation is occurring within the classrooms and instructional boundaries of time, place, instructional path and pace of student learning are diminishing. Dependence on technology for students and teachers is growing with the introduction of student use of district owned Chromebooks, online textbooks and curriculum, and Google Apps for Education. To thrive in today's society, it is important for students to become creative and critical thinkers, to be able to collaborate, create, and effectively communicate and to be responsible citizens. Technology tools are essential in the development of these characteristics and digital learning.

Technology is no longer an added feature for instruction and school administration; it has become mission critical to educating the students of King George County. The investment to maintain a robust and secure infrastructure, to deliver critical service, to provide adequate user support and the necessary training and professional development continues to grow. Our mission continues to ensure that technology, processes, and people are aligned to provide teachers and students with the necessary tools to be successful.

Vision

Technology is a tool that all of our students should be able to access and maximize to increase their learning. Teachers should be knowledgeable or instructed on the best practices as it pertains to digital learning, instruction, and management of a 21st-century learning environment. KGCPS should be a place where regardless of content, the instructional program is delivered in a manner that engages students through many delivery methods. The inclusion of technology should allow limitless learning....

Mission

Our district will explore and implement technology and associated resources, in an ongoing manner, to provide the best access to learning, information and real-world experiences such that students will develop full-on understanding of the content.

Purpose

The Purpose to the technology plan is to support the improvement of quality teaching and learning. When technology is infused into the curriculum regularly, it becomes a huge part of the daily life of both the educators and the students they serve. King George County Schools must strive to strengthen a culture that supports technology by providing a concise plan for current and future growth of the students' educational career. Technology is an ever-growing field that requires technical support,

continued training of staff, infrastructure to support technology use, protection of user's data and privacy, communication, safety and security and of course the budget to support its use. Technology infusion is an ongoing, multi-faceted process. The technology plan promotes student achievement by providing learning opportunities aligned with state, district, school, and individual goals.

Process

The Development of this plan has been a yearlong process. The planning team was developed to include all stakeholders in the education process in King George. Members consisted of School Board members, School Board Administrators, Technology Department Members, School Principals, Instructional Technology Liaisons, Classroom Teachers, STEM Teachers, Gifted Teachers, CTE Teachers, Special Education, Students and Parents. The team used an online program called Future Ready Schools, which is a nonprofit organization that assists schools in developing a division wide technology plan. The team met throughout the 17-18 and early 18-19 school year to work on the plan. Surveys were sent out to staff, students, parents and community members.

Summary of Previous Technology Plan Accomplishments

The last five years, King George County Schools have seen a shift from large group instruction with technology to individualized use of technology by the students and teachers. The acquisition of Chromebooks and the implementation of Google G-Suite have been a large influence for this change. Infrastructure improvements with the installation of fiber, wireless access point upgrades, switching upgrades and increased internet speeds have improved the support of the use of Chromebooks and online resources. Teachers have embraced the availability of G-Suite and Google Classroom for their instructional needs to enhance student achievement.

Network infrastructure with fiber has been completed allowing for interconnectivity to all schools. The division currently owns all of its fiber eliminating leasing costs while at the same time vastly increasing speed and reliability.

An additional Technology Support Technician has been hired to meet the VA Standards of Quality requirement for support staff.

District Profile:

King George County School's serve 4,535 students at six sites. Three elementary schools, one middle school, one high school and one preschool. The division has nearly 3,000 Chromebooks, 1,100 Windows desktops/laptops, 75 iPads, 20 Windows servers, 80 Virtual Windows servers.

Needs Assessment

The committee discussed needs with the input of the technology staff, instructional technology staff and suggest that the following be addressed as they are pressing needs right now.

Division Wide Telephone System – The current phone system is failing on a regular basis. Repair and replacement of parts is very expensive as the system is no longer manufactured and supported. A

replacement system is desperately needed to continue the life and safety of our students and staff members.

Plan for Chromebook 1:1 – Based on staff, student and parent surveys, plan for a Chromebook 1:1 Initiate over 4 years. This plan must include training, funding, warranties, repair considerations, instructional expectations, and technical support positions.

Community WIFI Sharing – High-speed internet is not readily available in King George. We need to explore alternate means for students to access the internet when not at school.

Funding for Maintenance of non-instructional Resources – The technology department is also tasked with door access systems, security camera systems, and video systems. These systems require maintenance repairs and upgrades as they begin to age. Many of these systems were procured through grants but need to be maintained by local funds. These funds need to be increased in the technology budget to maintain their effectiveness and continued use.

The 2018-2019 KGCS technology survey was a series of questions designed to help the technology department understand the current status of technology planning, implementing, and use in our schools. The surveys were distributed at a variety of times. The staff survey was given at the conclusion of the 2017-2018 school year. The parent survey was given at the open houses for the 2018-2019 school year as well as the first two months of school. The student survey was given at the beginning of the 2018-2019 school year. The following numbers represent surveys submitted: 569 parents, 1,831 students, and 230 staff members. The technology committee of 2017-2018 generated the questions on the surveys.

Survey Results

Summary of Staff Survey:

The majority of staff members indicated they use technology daily to present class materials, grade, write lesson plans, and differentiate instruction. 42% of staff members are interested in having more at-home digital content available to students (resources used at school be also made available at home). 72% of staff indicated they regularly use technology with their students to find information and play educational games. 56% indicated they regularly use technology with their students to create documents such as word processing, spreadsheets, and presentations. More than half of the staff feel capable and comfortable in using a variety of technology tools to enhance their curriculum. 75% of staff believe the biggest barrier to increasing the use of educational technology in the classroom is the lack of devices for the students. The vast majority of teachers feel a 1:1 initiative would positively impact their classroom instruction and classroom management. They feel it would be easier to differentiate as well as provide more authentic materials and language practice. Their biggest fear seems to be students damaging their devices and who is responsible for it. Several indicate they fear students will become dependent on the technology and be reluctant to do assignments any other way.

Summary of Student Survey:

Elementary students indicated they used technology in school to find information and play educational games while secondary students indicated they used technology to find information and create and publish projects. 77% of elementary students indicated they can access the internet at home for homework while 93% of secondary students

indicated they learn best when they use a school device vs. 27% indicating they learn best when the teacher uses a computer and projector to teach.

The vast majority of secondary students indicated they spend most of their time at home watching videos and chatting with friends on social media. 83% of secondary students indicated they have a smartphone. Secondary students indicated they rarely use devices in school to play educational games. Most of their time is spent with research, writing, and taking tests, with the exception of math classes. The findings indicate students only use devices in math classes a little to take tests, watch content related videos, and research.

Summary of Parent Survey:

The parent survey indicated the majority of parents are using Parent Portal on a daily basis with several times a week a very close second. The King George County School's website seems to be used a few times a month; teacher websites not used nearly as often. School email, as a means to contact teachers or administrators, seems to be used but not very often. 79% of participating parents indicate they have some form of high speed access at home, while 22% indicate they need to use their cell phone as a hotspot. 80% of parents would like to see problem solving developed in their child. 70% would like to see communication skills developed, while 60% would like to see research skills developed. 46% for both creativity and collaboration.

60% of those polled indicated they were receptive of a tax increase to support a 1:1 program (most parents indicating at the secondary level through their comments). 63% polled were receptive of a technology fee each year. Quite a few comments indicated they were in favor as long as we didn't do both. Many comments requested we offer keyboarding at the elementary level which began this year. There were many comments about the lack of adequate internet access at home. The survey shows that the technology committee will need to decide on our 1:1 roll out plans and communicate them effectively to parents to gain their financial support. The survey shows we are doing a wonderful job with our Parent Portal but need to work on our website for better navigation and mobile readability.

Personalized Student Learning: A Future Ready Vision

Personalized learning is a student-centered approach designed to help all students develop a set of skills collectively known as the deeper learning competencies. These skills include thinking critically, using knowledge and information to solve complex problems, working collaboratively, communicating effectively, learning how to learn, and developing academic mindsets.

Under a personalized learning approach, teachers, and school staff and, as appropriate, other adults:

- develop caring and trusting relationships with their students, who, because of these relationships, are more engaged in their education and put more effort into their school work;
- connect the curriculum to students' interests, strengths, and aspirations;
- provide students with tools to monitor their progress in mastering critical knowledge and skills, enabling them to take greater ownership (student agency) of their learning;

- provide students with targeted instruction, practice, and support in areas where they are struggling, while ensuring they learn challenging academic content and skills;
- create more flexible learning environments, incorporating multiple instructional approaches and the effective use of technology; and
- connect learning to real-world applications.

Curriculum, Instruction, and Assessment

In a Future Ready district, curriculum, instruction, and assessment are tightly aligned, redesigned to engage students in 21st Century, personalized, technology-enabled, deeper learning. Curricula and instruction are standards-aligned, research-based, and enriched through authentic, real-world problem solving. Students and teachers have robust and adaptive tools to customize the learning, teaching, and assessment, ensuring that it is student-centered and emphasizing deep understanding of complex issues. Assessments are shifting to be online, embedded, and performance-based. Data and associated analysis serve as building blocks for learning that is personalized, individualized, and differentiated to ensure all learners succeed.

The elements that comprise this Gear are as follows:

21st Century Skills/Deeper Learning
Personalized Learning
Collaborative, Relevant, and Applied Learning
Leveraging Technology
Assessment—Analytics Inform Instruction

A foundation for each of these elements is the increased use of digital content, providing learners a range of high quality media, accessible 24 hours-a-day, and 7-days-a-week. This provides all students many more opportunities to personalize learning, reflect on their own work, think critically, and engage frequently in deeper understanding of complex topics. This necessitates equitable access to devices and high-speed networks and broadband both at school and beyond, into the community and homes.

Task	Assigned to	Target Date	Met	Evidence
In alignment with ESSA, VDOE, and KGCS policies, the division will address the need for awareness and integration of digital citizenship, internet safety, and social media responsibilities and consequences for all students.	Classroom teachers STEM and CTE teachers Guidance counselors ITLs	On-going Annually by Spring Break		Teachers fill out a form to show completion of their assigned lessons.

Task	Assigned to	Target Date	Met	Evidence
Staff will use technology to support student collaboration, engagement, critical thinking, using real-world problems while presenting ideas to authentic audiences (community, fellow students, etc.)	Classroom teachers	On-going		End of the year teacher survey.
Staff will model technology skills in daily instruction.	Classroom teachers Administrators Paraprofessionals			Teacher/Administrative Evaluation tool
After a 4-year deployment of a 1:1 Chromebook initiative, a full evaluation will be researched and results presented to the KG Community, administration and School Board members.	Administration Instruction Technology Specialists ITLs Tech Advisory Comm.	2022		Data collections, surveys, presentations
Parents and Students will be informed where they can make safe connections to the internet in the community	ITL Teacher Communications	Ongoing		Community survey of sites who open their WiFi to local students

Use of Space and Time

Personalized learning requires changes in the way instructional time is used and the learning space is designed. Many schools are shifting away from Carnegie units to competency-based learning. This type of system adapts learning to meet the needs, pace, interests, and preferences of the learner. As the pedagogy shifts, so too must the learning space.

The elements that comprise this Gear are as follows:

Flexible Learning; Anytime, Anywhere
New Pedagogy, Schedules, and Learning Environment for Personalized Learning
Competency-Based Learning
Tasks for Providing Extended Time for Projects and Collaboration

This transition is made possible through innovative uses of technology for diagnostic, formative and summative assessments, for managing learning, for engaging students in learning, and for providing anywhere, anytime learning. Such transitions required districts to rethink and more effectively leverage the use of instructional time and space.

Tasks	Assigned to	Target Date	Met	Evidence
Determine how and when new pedagogy, schedules, and flexible learning environments for personalized learning are best utilized.	Curriculum and Instruction Department	2021		Analyze data from the technology survey and research concrete examples from other divisions.
Maker Spaces will be developed to provide space and equipment to encourage exploratory learning opportunities.	Curriculum & Instruction Principals	2021		Reservation schedules, parent demonstrations

Robust Infrastructure

When employed as part of a comprehensive educational strategy, the effective use of technology provides tools, resources, data, and supportive systems that increase teaching opportunities and promote efficiency.

The elements that comprise this Gear are as follows:

Adequacy of Devices; Quality and Availability
Robust Network Infrastructure
Adequate and Responsive Support
Formal Cycle for Review and Replacement

Such robust environments enable anytime, anywhere learning based on competency and mastery with empowered, caring adults who are guiding the way for each student to succeed. High quality, high speed technology and infrastructure systems within a school district are essential to the advancing of digital learning. In these environments, the use of technology is seamless, and students have ubiquitous access to broadband on high quality devices both at school and while at home.

Tasks	Assigned to	Target Date	Met	Evidence
Work toward 1:1 division-wide plan for Chromebook implementation.	Technology Department	September 2019		Provide the SB with a 4 year plan to provide a Chromebook to all students in grades 3-12
Maintain a wireless network that provides the highest speeds and concurrent connections available in the industry.	Technology Department	Annual		Annually evaluate the industry standards available.
Hire 2 Assistant Technicians to support staff and student Chromebook 1:1 use in all schools	Technology Supervisor	2020		Personnel Recommendation Documents for SB
Explore virtual Windows environment for staff and student use with Chromebook.	Network Engineer	2019		Network Engineer report on findings
All infrastructure equipment purchases will include at least a five-year warranty.	Technology Supervisor	On going		Review of purchase orders
VOIP capabilities will be phased in throughout the division to replace the current unreliable and antiquated phone systems.	Technology Supervisor	2021		Classrooms, support offices and administrative office are connected to the new system

Data and Privacy

Data privacy and security are foundational elements of digital learning. The district ensures that sound data governance policies are enacted and enforced to ensure the privacy, safety, and security of confidential data sets. Such policies and procedures ensure that access to authorized persons is secure. Education professionals have a range of resources, trainings, and services available to build their awareness and capacity to implement such policies and procedures with precision.

The elements that comprise this Gear are as follows:

Data and Data Systems
Data Policies, Procedures, and Practices
Data-Informed Decision Making
Data Literate Education Professionals

A personalized, learner-centered environment uses technology to collect, analyze, and organize data to provide continuous cycles of feedback to students, teachers and other education professionals, with the intent of increasing the depth, breadth, complexity, and efficiency of learning. All policies and practices ensure student data privacy.

Tasks	Assigned to	Target Date	Met	Evidence
KGCS will provide data literacy professional development to educators, staff, and students to increase usage of data for informed decision-making.	ITL Administration	May 2019		Finalized Technology PD plan and sign in sheets from each technology PD. Additionally, the instructional team will continue to evaluate the following data – SOL scores, benchmarks, and other progress monitoring tools.
Development of a repository of websites used by teachers where Data Privacy and Terms of Use have been evaluated and approved.	ITL	May 2019		Data to be available online
Develop online training modules and assessments that educate all staff on data protection and internet privacy laws	ITL	May 2019		Online video and assessment tools
All contracts with vendors for any resource that requires personal data of students or staff will require the vendor to sign a KGCS data privacy agreement. Refusal will terminate the purchase of the resource.	Finance Instruction Technology	2019		Development of the document and signed agreements with vendors.

Community Partnerships

Community partnerships include the formal and informal local and global community connections, collaborative projects, and relationships that advance the school's learning goals. Digital communications, online communities, social media, and digital learning environments often serve as connectors for these partnerships.

The elements that comprise this Gear are as follows:

Local Community Engagement and Outreach
Global and Cultural Awareness
Digital Learning Environments as Connectors to Local/Global Communities
Parental Communication and Engagement
District Brand

Tasks	Assigned to	Target Date	Met	Evidence
Assign responsibility for partnership activities to a district level staff member who will facilitate and prioritize partnership activities within and across schools.	Coordinator of Communications	On-going		Coordinator will conduct as least one open community event at each school every year.
Provide information sessions for parents and community members related to digital citizenship and online safety. Encourage parents to attend with their children.	Supervisor of Curriculum and Instruction ITLs Coordinator of Communications	Annually		Quick/short feedback survey after the event.
Conduct outreach into the community to establish a clear plan for providing Internet access for parents in central locations where community members congregate, as well as training for parents who may need assistance.	Supervisor of Technology Administrators Coordinator of Communications	Annually		Reach out to businesses for assistance.

Personalized Professional Learning

In Future Ready Schools, technology and digital learning expand access to high quality, ongoing, job-embedded opportunities for professional learning for teachers, administrators, and other education professionals. Such opportunities ultimately lead to improvements in student success and create broader understanding of the skills that comprise success in a digital age.

The elements that comprise this Gear are as follows:

Shared Ownership and Responsibility for Professional Growth
21st Century Skill Set
Diverse Opportunities for Professional Learning Through Technology
Broad-Based, Participative Evaluation

Digital Professional learning communities, peer-to-peer lesson sharing, and better use of data and formative assessment, combined with less emphasis on "sit and get" professional development sessions eliminate the confines of geography and time. These ever-increasing resources, as well as non-traditional forms of professional learning, offer teachers and administrators vast new opportunities to collaborate, learn, share, and produce best practices with colleagues in school buildings across the country. Digital leaders establish this type of collaborative culture. They model and are transparent with their own learning. In addition, educators must be engaged in more collaborative, goal-oriented approaches to the evaluation of their own teaching to serve as a personal model for the experiences that they might bring to students.

Tasks	Assigned to	Target Date	Met	Evidence
Instructional staff will provide diverse learning opportunities in professional development to improve technical proficiency and ability to integrate technology into the curriculum.	Division specialists ITLs	On-going		Professional development will be tracked using TeachPoint.
Prior to utilizing Chromebook carts, teachers and staff will receive required training on care and current instructional uses.	ITLs	Annually before the start of school		Training Log
Support innovative professional development practices that promote strategic growth for all educators and collaboration with other educators, content experts, and students.	ITLs Division specialists	On-going		Survey
Administrators will demonstrate and encourage technology integration skills as an example in staff meetings, trainings and parent gatherings.	Administrators	Annually		Artifacts

Budget and Resources

The transition to digital learning will require strategic short-term and long-term budgeting and leveraging of resources. All budgets at the district and the school should be aligned to the new, personalized vision for learning, with consistent funding streams for both recurring and non-recurring costs to ensure sustainability. During the transition, district leaders should strive for cost-savings and efficiencies through effective uses of technology.

The elements that comprise this Gear are as follows:

Efficiency and Cost Savings
Alignment to District and School Plans
Consistent Funding Streams
Learning Return on Investment

The financial model should include the metrics and processes to ensure not only sustainability, but also accountability for learning returns on investments.

Tasks	Assigned to	Target Date	Met	Evidence
A 4-year replacement strategy will be continued and followed for all building related student devices.	Supervisor of Technology	On-going		Review inventory data annually when developing a new budget
Hire 2 Technology Support Assistants needed to ensure successful implementation of the 1:1 initiative at each site.	Supervisor of Technology	2019		Human Resources hire dates
Total cost of ownership of devices needs to be taken into consideration during the budget process.	Supervisor of Technology	Annually		Purchasing costs, electricity usage costs, parts replacement, training costs
Using multiple budget sources to fund technology initiatives.	Supervisor of Technology	Annually		Budget sources such as Title I, Instruction, Special Education, etc.
An evaluation of all systems and online resources will be conducted to determine amount of use and value to the educational environment.	Instruction Supervisor Technology Supervisor	Annually		System and online reports
Door Access/Security Camera maintenance systems will require additional funding for the replacement and repairs as the systems age.	School Board Supervisor of Technology	Annually		Approved budgets include funding.

Resources

King George County School Professional Development Webpage
King George County Schools Professional Development Plan
TeachPoint Login
King George County Schools Acceptable Use Policy 2018

18-19 Technology Budget

Title	
Total 18-19	$1,088,857.50
Professional Development	$8,020.00
Purchased Service	$314,437.50
Internet Service	$69,600.00
Travel	$7,200.00
Dues / Memberships	$3,050.00
General Supplies	$53,450.00
Software/Hardware Supplies	$16,880.00
Hardware New	$285,560.00
Hardware Replacement	$330,660.00