Nottoway County Public Schools

Technology Plan

2019-2023

Executive Summary

To ensure the effective implementation of all existing and prospective technologies, and to enhance the learning opportunities for all members of the community, Nottoway County Public Schools has established a long-range technology plan. The plan was developed with input from the Technology Advisory Committee, which included teachers, administration, parents, students and community members.

The 2019-2023 Educational Technology Plan for Nottoway County Public Schools compliments the division's strategic plan, and models the 2018-2023 Educational Technology Plan for Virginia. Nottoway County Public School's will continue to place emphasis on integrating technology into the classroom, as a tool for providing ways for students to achieve in school more broadly and more deeply. Nottoway County Public Schools' will focus on four (4) domains outlined in the 2018-2023 Educational Technology Plan for Virginia :

· 	**Learning (Enhance Personalized, Equitable Student Learning Experiences with Technology),**
· 	**Teaching (Support Innovative Professional Learning with Technology),**
· 	**Leadership (Create Cultures of Change through Innovative Leadership Practices), and**
· 	**Infrastructure (Secure and Robust Infrastructure).**

Enhance Personalized, Equitable Student Learning Experiences with Technology

Goal:

The goal of Nottoway County Public Schools is to promote and support student personalized, deeper learning experiences to demonstrate workplace readiness by creatively solving complex problems, thinking critically, collaborating, communicating and demonstrating responsible citizenship. This goal will be met through the following results, indicators and actions:

Results (What do we want to accomplish?)

- Students will develop deeper learning skills by leveraging technology as a resource or tool.
- Educators will leverage current and emerging technologies to increase opportunities for students to follow personalized learning pathways.
- Students will apply technology effectively to support the construction and application of content knowledge and skills.
- Students will demonstrate mastery in a variety of ways, including the use of technology through the creation of digital artifacts.

- Educators will expose all students to career and college opportunities including those in the technical fields to promote workplace and college readiness through advanced coursework, mentorships and internships.
- Nottoway County Public Schools' will strive for a balance in learning settings between online and face-to-face learning and passive and active learning. Technology should not replace other key learning methods of learning including play, the creation of art and music, and place-based experiences but should be used as a tool to deepen and enhance learning.

Indicators (What evidence will exist of completion?)

- Document technology-based resources used by students and innovative learning experiences such as, but not limited to blended learning, project-based learning, and personalized learning.
- Collect information on the number of students enrolled in advanced coursework (e.g., dual enrollment, AP, IB), internships, and mentorships or receiving industry certifications.

Action (What action will be taken?)

- Research, vet and implement digital resources to assist in providing innovative, personalized and deeper learning experiences for all students.
- Develop and revise existing policies to support innovative learning experiences.
- Provide opportunities for teacher and technology stakeholders to collaboratively create instructional resources, including local alternative assessments, to support innovative learning experiences.
- Provide virtual learning tools that deliver multiple pathways for learning through blended and fully online models in ways that increase quality of education and equity for students.
- Provide appropriate technology whenever it creates the best outcome and least restrictive environment for a student's education using input from the division Assistive Technology team, when appropriate.
- Promote in-school and out-of-school technology-based learning opportunities (such as pursuit of industry certifications, professional licenses, and dual enrollment courses) along with career exploration, exposure, and planning opportunities.
- Explore ways to promote improvement of community-wide efficient access to the Internet.
- Provide technology and computer science cross-curricular connections starting in the elementary grades and across all disciplines to promote meaningful, real world applications of knowledge and skills and promote deeper learning opportunities aligned to the Virginia Standards of Learning.
- Prepare our students for a participatory culture by providing resources and instructing students at a developmentally appropriate level and on an ongoing basis related to Internet safety, digital citizenship skills, and student awareness of and skills for personal

and data privacy (as specified by the Code of Virginia § 22.1-70.20). Continue to update and enforce the NCPS Acceptable Use Policy.

Related Resources from VDOE and Elsewhere

Student Led Ideation Challenge
The Student Led Ideation Challenge was developed by the Innovative Solutions Consortium (ISC) in partnership with the VDOE and piloted in the 2016-2017 school year. This project, which requires students to work with real-world problems as a team, will be launched state-wide in 2017-2018. Read about the 2016-2017 winners: *Loudoun students innovating well beyond their years—U.S. Navy takes notice*.

College and Career Opportunities for Students
The VDOE provides several programs to assist students in preparing to attend college or pursue a career after graduation. The Governor's STEM Academies expand options for the general student population to acquire STEM (Science, Technology, Engineering and Mathematics) literacy and other critical skills, knowledge and credentials that will prepare them for high-demand, high-wage, and high-skill careers in Virginia. Students can earn Digital Badges after taking and passing the Workplace Readiness Skills for the Commonwealth assessment, which reflects 21 Workplace Skills as identified by a wide variety of businesses and industries located around the state.

Performance Based and Local Alternative Assessments
The VDOE is continuing its work on locally developed assessments with a focus on performance based assessments through 2020. Review the plan and timeline outlined in the April 28, 2017 Superintendent's Memo #135-17: Update on the Implementation of Local Alternative Assessments. Further information can be found on the Performance-Based and Local Alternative Assessments page on the VDOE web site.

Virtual Learning
In Virginia, schools can provide online courses for their students in several different ways. Schools may use their own or division-created online courses, purchase particular courses from state approved Multidivision Online Providers, purchase or otherwise obtain digital material that is delivered by a local teacher as a blended learning course, or enroll students in courses through Virtual Virginia. Students are required to complete a virtual learning experience in order to graduate. See § 22.1-253.13:4. Standard 4. Student achievement and graduation requirements (item D:9).

#GoOpenVA

Virginia is participating in the National [#GoOpen](#) campaign through our [#GoOpenVA](#) project. The goals of the project are to increase awareness of the benefits and uses of [Open Educational Resources](#) (OER); establish a community of practice to foster, create, share, and leverage Open Educational Practices (OEP); understand state and division level use of OER and how to support further implementation; encourage alignment of OER efforts with local and state strategies; and, acknowledge school division efforts to implement OER. The project is developing and piloting three OER curriculum resources (for Virginia Studies, World History and Geography to 1500, and Algebra I) during the 2017-2018 school year. These resources will be the models for other resources to be developed in the coming years.

Virginia Cyber Range

A new resource to help students learn important digital skills and also provide the Commonwealth with needed talent, the [Virginia Cyber Range](#) will "provide advanced cybersecurity training exercises for high-school and college students, revolutionize cybersecurity education within the commonwealth, and position Virginia to become a leading source of critical cybersecurity expertise for the nation." See the article *[Virginia Cyber Range to Enhance Cybersecurity Education Across the Commonwealth](#)*.

Support Innovative Professional Learning with Technology
Goal:

Nottoway County Public Schools will promote and support current and emerging technology-based resources that support educators in developing and employing innovative strategies and practices to support student-centric learning models to increase quality of education and equity for students. NCPS will accomplish this goal through the following means:

Results (What do we want to accomplish?)

- Educators support [personalized](#), [deeper learning](#) experiences that are enhanced through appropriate and meaningful technology integration.
- Through the use of technology supports (e.g., learning and/or content management systems, student information systems, adaptive technologies) educators will monitor students' progress to personalize learning and inform instructional practices.
- Educators utilize the [instructional technology resource teacher](#) (PDF) model to support student engagement through technology in the classroom.
- Educators understand how to enhance [performance-based and alternative assessments](#) through the intentional integration of technology.

Indicators (What evidence will exist of completion?)

- Types and numbers of professional learning opportunities are documented and recorded.
- Number of professional online courses and resources offered to educators and number of participant completers.
- Current and emerging technology- based resources used by educators as indicated by Technology Usage Surveys
- Collect information on the number of students enrolled in advanced coursework (e.g., dual enrollment, AP, IB) internships, and mentorships or receiving industry certifications.

Action (What action will be taken?)

- Develop and revise existing policies to support innovative learning experiences.
- Provide opportunities for teacher and technology stakeholders to collaboratively create instructional resources, including local alternative assessments, to support innovative learning experiences.
- Revise the Technology Standards for Instructional Personnel to support the recruitment, development, and retention of knowledgeable and skilled teachers and school leaders.
- Promote the use of micro-credentialing (PDF) to provide avenues teachers can use to pursue individual professional goals in the integration of technology in teaching and learning.
- Promote in-school and out-of-school technology-based learning opportunities (such as pursuit of industry certifications, professional licenses, and dual enrollment courses) along with career exploration, exposure, and planning opportunities.
- Integrate the proficient use of technology into division professional learning activities.
- Provide information about assistive technology and uses through the Training and Technical Assistance Centers (TTAC).
- Support instruction in the development of rubrics and other evaluation tools for use with performance-based assessment that integrate technology.
- Coordinate and collaborate partnerships with professional organizations and the division to align professional learning goals to ensure targeted and strategic professional learning experiences in the area of instructional technology for teachers.

Resources

Partnerships

- institutions of higher education
- educational stakeholder groups
- community business and industry
- community civic organizations

Related Resources from VDOE and Elsewhere

- **Resources for Revised SOL**

When new Standards of Learning are adopted, the VDOE provides resources and professional development opportunities to support the new approaches to learn embedded in the standards. An example is a 2015 presentation regarding Supporting the Mathematics Process Goals through Research-based Teaching Practices (PDF). Teachers can learn about these opportunities through Teacher Direct.

- **Deeper Learning Workshop Materials**

TVDOE partnered with Jobs for the Future's (JFF) Students at the Center initiative with generous funding from The William and Flora Hewlett Foundation, to convene an all-day forum on September 26, 2016, focused on the use of performance assessments as a lever for transformative teaching and learning. Materials from the conference, *Assessing For Deeper Learning: A Transformative Pathway to Prepare Virginia Students for the Future,* are provided on the VDOE website.

- **Accountability Terminology Guide**

The terminology used in Assessment and Accountability can be confusing. The VDOE has gathered together a list of frequently used terms, the Accountability Terminology.

- **Guidelines for ITRTs**

Although it is almost a decade old, the Instructional Technology Resource Teachers – Guidelines for Teachers and Administrators (PDF) still provides guidance regarding the work Instructional Technology Resource Teachers (ITRTs) are designed to do in the school and school division. It includes the results of three studies about how ITRTs impact learning, and offers some recommendations.

- **CanDo: A Tool to Support CTE in Schools**

Virginia's Career and Technology Education (CTE) Resource Center provides information about and support for CanDo which is web-based tracking developed for teachers by Arlington County – in association with SchoolTool. Using Virginia's state-approved task/competency lists, educators can track students' progress electronically. Administrators have access to real-time scores and reports that satisfy state and federal requirements.

- **Special Education Resources**

Although the resources collected by the eight regional Training and Technical Assistance Centers (TTACs) are directed to Special Education teachers, the resources are helpful for all educators. See their extensive list of resources on technology.

- **Innovative Assessments Being Explored**

Eleven school divisions from around the state are participating in a grant to explore innovative assessments, Student-Led Assessment Networked Improvement Community in Virginia. After the pilot is completed, the divisions will share their experiences with other school divisions.

- **USDOE on Teacher Preparation**

In December 2016, the U.S. Department of Education published Advancing Educational Technology in Teacher Preparation: Policy Brief. In this document, the US DOE argued that teacher preparation programs need to shift their approach to pre-service teacher preparation so

that graduates would be able to "effectively select, evaluate, and use appropriate technologies and resources to create experiences that advance student engagement and learning." The policy brief "identifies key challenges and solutions to the effective integration of technology in teacher preparation, provides guiding principles on how to move the field toward effective integration of technology in teacher preparation programs, and identifies areas of opportunity and collaboration for stakeholders across the field.

- **Staying Current with Copyright**

Staying up-to-date on copyright is difficult because the law changes with new technologies as well as new judicial decisions. An authoritative resource for all educators is from the [American Library Association (ALA) website](#).

- **Social Media and PLNs**

One way that teachers can create their own Personal Learning Network (PLN) is through the social media platform Twitter. Teachers can pursue information or skills that they are interested in learning, and connect with others who are like-minded. [The Complete Guide To Twitter Hashtags For Education](#) can help the novice begin to use twitter for their own professional learning. There are many other ways to connect with other educators, however—Second Life, Pinterest, even Facebook. The [Virginia Society for Technology in Education](#) (VSTE) supports a variety of learning communities. The VDOE provides a [professional learning network database](#) of Virginia division contacts for specific topics such as Integration of Technology and High School Redesign.

Create Cultures of Change through Innovative Leadership Practices
Goal:

Nottoway County Public Schools will promote leadership that supports [deeper learning](#) experiences for students and innovative instructional practices by educators through the use of technology. NCPS will meet this goal through the following means:

Results (What do we want to accomplish?)

- Educational leaders develop a vision for teaching and learning that includes the appropriate use of technology.
- Educational leaders are able to communicate and guide the implementation of division and school goals for teaching and learning that integrate technology and promote innovation.
- Educational leaders model tolerance for risk and experimentation and create a culture of trust and innovation.
- Educational leaders support, secure and advocate for resources to sustain technology initiatives and goals including those designed to support personalized learning environments.

- Educational leaders promote the use of a variety of innovative instructional strategies and practices developed with current and emerging technology-based resources to support the innovative instructional approaches in the classroom.
- Educational leaders possess the capability to efficiently and effectively use technology in the performance of job duties (data-driven decision making, educator evaluations, communications, and more).
- Technology is included in technical assistance and school improvement resources provided by to educational leaders based upon school and school division needs as determined by criteria such as Accreditation Matrix Performance Levels.

Indicators (What evidence will exist of completion?)

- Types and numbers of professional learning opportunities are documented and recorded.
- Number of professional online courses and resources offered to educators and number of participant completers.
- Document current and emerging technology-based resources used by leaders and schools.

Action (What action will be taken?)

- Provide guidelines for qualifications and hiring practices for all school leadership positions that reflect the need to have a deep understanding of the use of technology in learning and school operations.
- Provide opportunities (e.g. pilot projects, requirement waivers, resources, etc.), within or between schools to implement and evaluate new technologies and instructional approaches.
- Provide communication on the continued Board of Education work in support of the Profile of a Virginia Graduate, Accreditation Matrix, and the College, Career, and Civic Readiness Index.
- Promote and provide professional learning opportunities regarding educational technology leadership, research, and innovations in education.
- Promote the effective and efficient use of Instructional Technology Resource Teachers.
- Collaborate with other organizations to provide opportunities for leaders to meet, collaborate, and share ideas, resources, and effective practices, and to promote professional learning networks through social networking tools.
- Utilize statewide systems to collect, monitor, and report achievement to inform practices surrounding continuous improvement efforts.

Related Resources from VDOE and Elsewhere

School Quality Profiles
School Quality Profiles are a new way to look at the performance of Virginia's public schools. School Quality Profiles were developed by the state Board of Education in response to the 2015 Virginia General Assembly, which directed the board to redesign online reports for schools and school divisions to more effectively communicate to parents and the public about the status and achievements of the Virginia's public schools. School Quality Profiles are available for all schools, school divisions, and for the state.

Virginia Tiered Systems of Supports
The Virginia Tiered Systems of Supports (VTSS) aligns academics, behavior and social-emotional wellness into a single decision-making framework to establish the supports needed for schools to be effective learning environments for all students. VTSS partners with school divisions throughout the commonwealth to support the successful implementation of the framework. Implementing the VTSS requires the use of evidence-based, system-wide practices with fidelity to provide a quick response to academic, behavioral, social and emotional needs. The practices are progress-monitored frequently to enable educators to make sound, data-based instructional decisions for students.

Principal Preparation
The Wallace Foundation has selected Virginia State University (VSU) to participate in a national $47-million initiative to develop models over the next four years for improving university principal preparation programs and to examine state policy to see if it could be strengthened to encourage higher-quality training statewide. An independent study will capture lessons from the participating universities and their partners to be shared with policymakers and practitioners across the country. Virginia State University, along with district partners and the Virginia Department of Education, will receive in the first year $2.41 million to take on this work.

Model Policy for Data Sharing Agreements with Vendors
Chesterfield County Public Schools has worked with many different providers of digital materials. In order to protect student privacy, they have developed a data sharing agreement that must be signed by any provider. The Model Standard Terms of Use and Data Sharing Agreement (PDF) is available for any division to adapt for their own use.

Grants for Improving Teacher and Principal Quality
For the 2017-2018 school year, the State Council of Higher Education for Virginia (SCHEV) awarded seven competitive awards. The professional development grants will be used to increase

the academic achievement of all students by helping Virginia schools and school districts improve teacher and principal quality and to ensure that all teachers are highly qualified in the core subjects they teach. To grants are listed on their 2017-2018 Awards web page.

Virginia Consortiums
The Southwest Virginia Public Education Consortium (SVPEC) was created by the Virginia General Assembly in 1992 to address disparity between Northern Virginia and Southwestern Virginia. The SVPEC provides assistance to the public school systems of Bland, Buchanan, Carroll, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, and Wythe Counties and the cities of Bristol, Galax, and Norton. Its objectives are to coordinate the region for joint educational initiatives and address common needs.

Future Ready Schools
One of the ways schools and divisions can get assistance in planning is through the Future Ready Schools national initiative. A research-based and reality-tested framework provided on the initiative's web site guides leaders through the process of helping their schools move towards the future. The group also focuses on developing the skills leaders will need in order for them to lead the process successfully. One of the Future Ready partners (EdSurge) has created an online Guide to Becoming a Future Ready Leader.

Creating a Culture of Innovation
The Canadian educational non-profit, Galileo has created an e-book, *Focus on Inquiry*. One chapter addresses how to lead the development of a culture for innovation, Creating a Culture of Creativity, Risk-Taking and Innovation

Rural Schools Face Special Challenges
Rural divisions have special issues and problems when trying to develop a plan for personalized learning. The Future Ready initiative has developed the document A Guidebook for Success: Strategies for Implementing Personalized Learning in Rural Schools specifically to assist these divisions in moving forward.

National Perspectives
When developing a plan, it is helpful to have resources to refer to which provide a national perspective. The annual Digital Learning Report is one helpful resource for divisions, as is National Educational Technology Plan.

Culture of Data Use
The Institute of Education Sciences: Regional Educational Laboratories (IES: REL) has published a Culture of Data Use Workshop Toolkit to help school and divisions apply research to

the use of data in education. The workshop is team-based with structured activities to help educators understand how data can effectively be used. The toolkit includes materials that can be used by a facilitator in the division.

Secure and Robust Infrastructure
Goal:
Nottoway County Public Schools will promote and support a secure and robust technology infrastructure to support access, adequacy, and equity. NCPS will take the following steps to promote, establish and support a secure and robust infrastructure:

Results (What do we want to accomplish?)
- Students, educators, and leaders have equitable access to secure and robust networks that provide high quality, reliable access to the Internet and other networks.
- Schools and school divisions use best practices that comply with federal, state, and industry guidelines and recommendations to minimize network threats and vulnerabilities and protect educational data.
- Students, educators, and leaders have equitable access to computing devices and other digital resources, including assistive technologies.
- School divisions have access to technical and human resources that enable the effective evaluation of infrastructure costs and other considerations necessary for high quality and reliable access to the Internet and other networks used by students, educators, and leaders in innovative way.

Indicators (What evidence will exist of completion?)
- Increased equitable and continuous access to secure and reliable networks by students, educators, and leaders.
- Increase Internet speed connection from SETDA targets of at least 0.7 Gbps per 1,000 users (for 2017-18) and at least 2.0 Gbps per 1,000 users (for 2020-21).
- Increase WAN connection to all schools to SETDA targets of at least 10 Gbps per 1,000 users (for 2017-18).
- Annual completion of Category 1 and Category 2 e-Rate application and reimbursement for qualifying expenses.
- Annual submission of the Virginia Public School Authority application and reimbursement for qualifying technology purchases.

Action (What action will be taken?)

- Continuous progress of additional devices that will allow the division to meet a 1:1 computing environment, and move towards developing a take home policy for students.
- Maintain the following comprehensive and effective systems: email/communication, student information, learning management, assessment, library circulation, food service, transportation and emergency notification.
- Maintain ADA compliant and up-to-date and informative division and school websites.
- Promote equitable access to high quality, effective learning environments for all students by supporting efforts to reduce barriers to technology access.
- Utilize network standards, recommendations, and other information available from various stakeholder organizations that provide guidance on interoperability, broadband, and network capabilities.
- Promote the continual expansion of broadband capability to support digital learning and innovative education using guidance provided by relevant stakeholder organizations.
- Participate in federal (such as e-Rate) and state (such as the Virginia Public School Authority) programs to maximize resources available to students, educators, and school leaders.
- Evaluate infrastructure costs related to broadband to ensure equity.
- Develop plans and programs that balance safety and security issues while allowing for instructional innovation.
- Utilize evaluation criteria and standards to make informed purchases of computing devices and other digital resources, including assistive technologies.
- When appropriate, utilize regional contracts for planning, acquiring, managing, and maintaining technology, including assistive technology.
- Utilize evaluation criteria and standards for hardware and software adoption to include a focus on interactivity, personalization and universal design features.
- Ensure that assistive technology services and devices are implemented in accordance with the Individuals With Disabilities Education Act (IDEA).
- Ensure efficient use of the technical support personnel required in the Standards of Quality (§ 22.1-253.13:2. Standard 2. Instructional, administrative, and support personnel – see J).

Related Resources

Building Broadband
Individual school divisions in Virginia are approaching the problem of student access to the Internet outside of the school in differing ways. One approach taken by Albemarle County Public Schools is described in the article *A School District Is Building A DIY Broadband Network*.

Virginia's KLIP
The K-12 Learning Infrastructure Program (KLIP) is a partnership with the Virginia Department of Education, the governor's office, the EducationSuperHighway (ESH), and the Friday Institute

for Educational Innovation. The KLIP supports increased access to affordable, high-speed Internet in every classroom in Virginia. The goals of the KLIP are to: get fiber to schools that need it, ensure classrooms have updated and reliable Wi-Fi, help divisions get more broadband for their budgets, and assist schools with the e-Rate process to get the discounts they need for Internet access and internal connections.

e-Learning Backpack
The purpose of the [Virginia e-Learning Backpack Initiative](#) is to provide every ninth grade student attending a public school that is not fully accredited with a tablet or laptop computer, digital content and applications, and access to content creation tools. While much of the focus of the initiative is currently on the supplemental grants provided through the Virginia Public School Authority (VPSA) for eligible schools, the Virginia e-Learning Backpack Initiative is actually a broader initiative intended to assist all schools in the transition to digital content and tablet or laptop computers.

Accessibility and the Division Web Presence
The VDOE has listed some resources that will be helpful to school divisions as they seek to update their web pages and digital content to comply with ADA regulations. Find links to information, tools and instructions on the [Website Accessibility Resources and Tools for School Divisions](#) page.

Training and Technical Assistance Centers
The Virginia Department of Education (VDOE) supports eight [Training and Technical Assistance Centers (TTACs)](#), located at Universities across the Commonwealth of Virginia, to improve educational opportunities and contribute to the success of children and youth with disabilities (birth - 22 years).

Virginia Longitudinal Data System
The [Virginia Longitudinal Data System (VLDS)](#) provides state policy makers, authorized researchers and citizens with access to educational and workforce training data from multiple sources while protecting the privacy of Virginia students. VLDS supports critical reporting on the quality of public education – such as accurate graduation and dropout rates for high schools and school divisions – while providing information that can help policy makers improve programs that prepare and connect Virginians with employment opportunities.

Continuity Planning
The Virginia Department of Emergency Management provides resources to assist local governmental entities to create [Continuity of Operations Plans (COOP)](#). If your division has not

been involved with this process, contact your local government agency and discover how you can participate.

Consortium of School Networking
As K–12 education institutions are increasingly using digital content and related e-learning technologies to meet evolving education needs and goals, division find there are gaps in the integration and interfaces among disparate applications. The Consortium for School Networking (CoSN) has several resources that assist school divisions tackling this particular problem.

Rapid-Cycle Evaluation Support
The US DOE's Office of Educational Technology is developing a tool to assist schools in use Rapid-Cycle Evaluation (RCE). The new tool, called the Coach," is in early pilot. "The Coach, embedded with professional development tools, walks educators through how to craft a research question, set up data, create a match comparison group and analyze the results." Divisions can sign up to use the beta version of this tool.