

DINWIDDIE COUNTY PUBLIC SCHOOLS TECHNOLOGY PLAN



2023-2028

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Dinwiddie County Public Schools

The mission of Dinwiddie County Public Schools is to provide each student the opportunity to become a productive citizen, engaging the entire community in the educational needs of our children.

Executive Summary

Dinwiddie County Public Schools serves over 4,000 students by providing them access to an array of various assistive and instructional technologies. In 2014, the school division began an initiative to provide each student with a personal learning device. Additionally, teachers participated in annual professional development to ensure the integration of technology in daily lessons to enhance learning experiences.

The Technology Plan of Dinwiddie County Public Schools is divided into four domains:

- 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)
- Infrastructure (Secure and Robust Infrastructure)

The Technology Plan of Dinwiddie County Public Schools is directly aligned with the school division's strategic goals. This plan supports and promotes student achievement by deploying the most efficient and effective technologies.

Committee Members

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Accomplishments

Learning

- Every student in Dinwiddie County Public Schools has access to a Chromebook or iPad.
- Increased DCPS network capacity to 5 gigabits, which provides more bandwidth for new web-based programs and devices.
- The high school and middle school auditorium technology was upgraded with projectors, sound board, and screen.

Teaching

- Promethean Panels Expansion: There are Promethean panels available for use by every teacher in our division.
- Staff training was offered on the use of following tools: Promethean, Google, Canvas, Imagine Learning, Performance Matters, Square Panda, STEMscopes, Study Island, Courseware, Simple K12, etc. Many additional teacher resource tools are also available.
- Laptops are on a four-year replacement cycle for all DCPS teachers and administrators.
- DCPS provides live stream of Dinwiddie County School Board meetings and other events for those unable to attend in person.
- Classroom software application is utilized by instructional staff to monitor and manage students online.

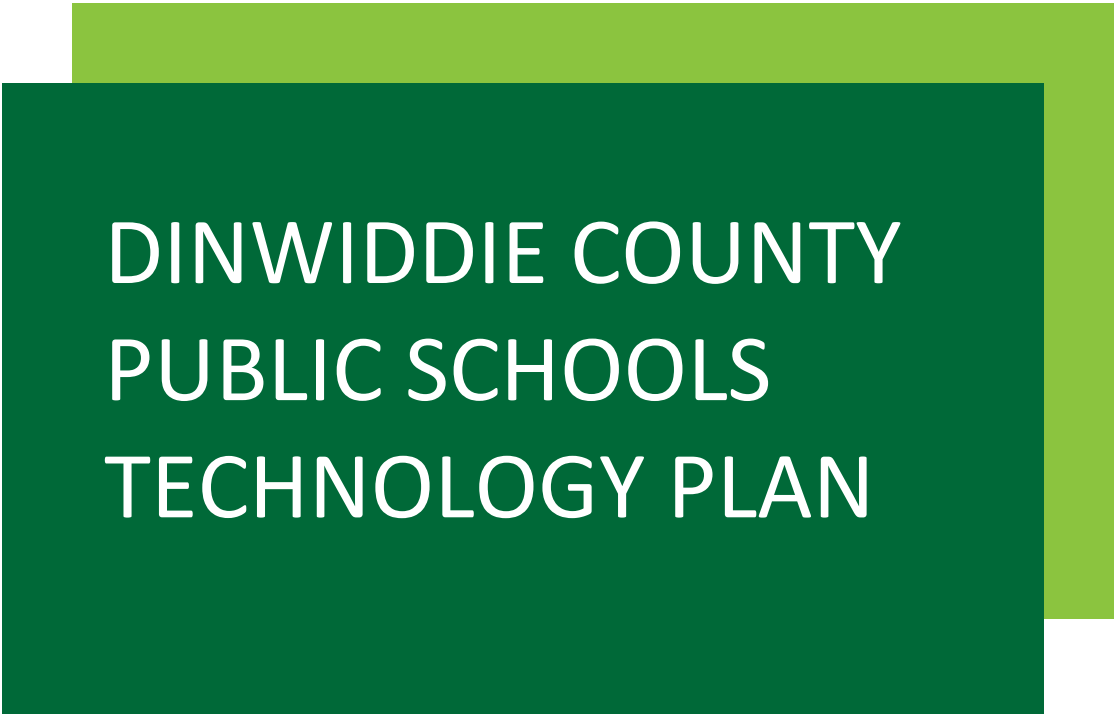
Leadership

- During the Lead Well Summit, county and school leaders came together with faith community partners in an effort to identify opportunities for collaboration aimed at meeting the needs of citizens. There were 350 in attendance. This partnership will result in strategies that lead to a healthier, stronger and more vibrant community. The focus of the first summit was servant leadership.
- A Region 1 Technology Director forum was created to share knowledge and experience among Region 1 school divisions.
- DataViz was implemented which helped to meet the objective of using data from a variety of reporting mechanisms to engage in informed decision-making and planning.

- Division wide online registration for kindergarten and preschool students was provided. Parents/guardians can now use a kiosk at each DCPS facility for completing online PreK-12 applications and registrations.
- New, ADA compliant, DCPS website was launched in March 2019. It fosters interactions/communications with staff, students, parents, and the community.
- Dinwiddie County Public Schools won the 2023 SVRTC Division Leadership award. This competitive award recognizes an SVRTC school division that advances technology in the educational setting.

Infrastructure

- Cisco Firepower firewall was installed to strengthen network security and allow secure, remote access to our network.
- Division wide digital copiers allow secure printing for all staff as well as the ability to scan files to either network folders and/or Google Drive.
- Cloud-based programs were added such as Infinite Campus, Destiny, Keystone, Canvas, Major Clarity, Identity Management, and Traversa.
- All main network school switches were replaced.
- New integrated VOIP phone, intercom, paging system has been installed in all DCPS schools.
- The division hub location server was upgraded.
- The Barracuda Backup Server was replaced. This provided a division wide backup server.
- Headend network equipment in each school building was upgraded to 10 gigabit fiber backbone equipment.
- Security methods were reinforced at both physical and technical levels. Security cameras and 2-way radios were added at all school locations. Staff were given regular security tips to avoid dangerous emails. There was a partnership developed with VITA's Threat Management Group for network monitoring.
- DCPS wireless network was upgraded to the latest Extreme Cloud IQ that significantly increased the control, deployment, and security capabilities. Dual radio access points were added to improve wireless coverage in areas with low wireless signals.
- Brightly, a new asset management system, was deployed. This is used for inventory and tracking of DCPS assets. The system also provides ticketing capability for division users.



DINWIDDIE COUNTY PUBLIC SCHOOLS TECHNOLOGY PLAN

LEARNING

Enhance Personalized, Equitable Student Learning Experiences with Technology

“Technology can become the ‘wings’ that will allow the educational world to fly farther and faster than ever before – if we allow it.”

~ Jenny Alredge

GOAL:

Promote and support meaningful and relevant learning experiences for students that allow them to demonstrate workplace readiness and contribute to a sustainable community.

Anticipated Results:

- Create an environment that allows teachers/students to explore, create, and model/demonstrate learning.
- Provide resources that address the learner’s interest, abilities, and learning paths.
- Provide opportunities to use technology to collaborate in an ethical and effective manner to make a positive impact in the community.
- Provide digital literacy instruction and experiences across the curriculum in kindergarten through grade 12, as outlined in DCPS curriculum:
 - Grades K-8: teachers will embed the VDOE Computer Science standards;
 - Grades 9-12: teachers will provide aligned instruction for the specific computer science courses that students select;
 - Grades K-12: teachers will integrate digital literacy within the curriculum; and
 - Age-appropriate instruction for safe and ethical use of digital tools in the classroom.
- Offer opportunities to conceptualize learning by supporting real-world work.

Indicators:

- Promote in-school and out-of-school technology-based learning opportunities (i.e., pursuit of [industry certifications, professional licenses, and dual enrollment courses](#)) along with career exploration, exposure, and planning opportunities.
- Provide [digital learning](#) and [computer science](#) cross-curricular connections starting in the elementary grades and across all disciplines.
- Promote meaningful, real-world applications of knowledge and skills and deeper learning opportunities aligned to state and national standards.

Action Steps:

Strategy 1: Transform educational environments by leveraging technology to create learning pathways aligned with state and national standards for all students.

- Provide resources that allow students to experience universally-designed learning in technology-enhanced environments within and beyond the classroom.
- Support schools in providing personalized learning experiences.
- Ensure appropriate staffing and collaboration time among teachers, media specialists, innovation specialists, and resource personnel.
- Review and evaluate DCPS curriculum and resources:
 - Include technology resources within curriculum documents; and
 - Align standards with Virginia Computer Science Standards and Digital Learning Integration Standards.

Strategy 2: Support educators in creating digitally designed environments and resources wherein students collaborate and communicate for a variety of audiences and purposes.

- Support collaborative learning opportunities for students to contribute in project teams, assuming various roles and responsibilities that help them work effectively with others.
- Share resources that assist students in demonstrating mastery of content by presenting products using tools (i.e., visualizations, models, simulations, other digital artifacts) suited to their audience and purpose.

Strategy 3: Equip students to utilize technology and tools to empower, collaborate, apply, and publish products that demonstrate mastery of knowledge.

- Design opportunities for students to:
 - Use digital tools to interact with people from varied perspectives and cultures within the community;
 - Evaluate the accuracy, perspective, credibility and relevance of resources;
 - Collect data or identify data sets, and use digital tools to analyze, represent, and synthesize data to extract key information, form conclusions, solve problems, and understand increasingly complex systems;
 - Engage in problem solving and decision-making skills through hands-on and project-based experiences;
 - Promote digital citizenship and leadership within and beyond the classroom; and
 - Engage in instructional activities emphasizing the importance of digital citizenship to include:
 - Manage digital identity and reputation;
 - Engage in positive, safe, legal, and ethical behavior when using technology;
 - Demonstrate an understanding of, and respect for, the rights and obligations of using and sharing intellectual property;
 - Manage personal data to maintain digital privacy and security; and
 - Maintain awareness of data-collection technology used to track activity online.

TEACHING

Support Innovative Professional Learning with Technology

"If we teach today as we taught yesterday, we rob our children of tomorrow."

~ John Dewey

GOAL:

Promote technology-based resources that empower educators to utilize innovative strategies to support student-centered learning that increases the quality of education for all students.

Anticipated Result:

- All instructional staff will take an innovative approach to instructional planning that encourages students to apply meaningful learning to real-world experiences.

Indicator:

- All instructional staff will demonstrate competency in integrating technology successfully throughout the curriculum while meeting the goals and expectations of required standards.

Action Steps:

Strategy 1: Instructional staff will participate in learning opportunities that will lead to effective use of digital tools and resources, and inspire them to become lifelong learners and leaders in their schools and professional communities.

- Participate in ongoing professional development in areas such as;
 - Technology tools
 - Software
 - STEAM learning
 - Network systems
 - Safety and security
 - Collaboration
 - Integration of Computer Science standards

Strategy 2: Strengthen the capacity and confidence of instructional staff to integrate technology that engages students in learning and build a culture that embraces personalized learning.

- Correlate technology resources to curriculum standards.
- Create and provide interactive curriculum resources and supplements to instruction.

Strategy 3: Increase positive awareness of digital citizenship to all instructional staff.

- Provide professional development regarding the importance of demonstrating and promoting digital citizenship.
 - Manage digital identity and reputation;
 - Engage in positive, safe, legal, and ethical behavior when using technology;
 - Demonstrate an understanding of, and respect for, the rights and obligations of using and sharing intellectual property;
 - Manage personal data to maintain digital privacy and security; and
 - Maintain awareness of data-collection technology used to track activity online.

LEADERSHIP

*Create Cultures of Change through
Innovative Leadership*

“Technology by itself doesn’t make leaders. Technology only amplifies true leadership.”

~ Steve Jobs

GOAL:

Create transformational, equitable, technology-rich environments through innovative leadership practices by immersing students in a challenging personalized learning curriculum.

Anticipated Results:

- Educational leaders will develop a vision for teaching and learning that includes the appropriate integration of technology; creating a shared vision for building 21st Century skills and leveraging resources to support learning, teaching, and assessing.
- Educational leaders will ensure that educators access opportunities for personalized professional learning and provide evidence of their learning.
- Educational leaders will communicate and guide the implementation of division and school goals for teaching and learning that integrate technology and promote meaningful innovation.
- Educational leaders will model tolerance for risk and experimentation and create a culture of trust and innovation.
- Educational leaders will support, secure, and advocate for resources to sustain technology initiatives and goals including those designed to support personalized learning environments.
- Educational leaders will 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 will efficiently and effectively use technology in the performance of job duties (data-driven decision making, educator evaluations, communications, etc.).
- Educational leaders will provide technical assistance (including technology) and school improvement resources based upon school and division needs as determined by VDOE and local criteria.

Indicators:

- Types and numbers of professional learning opportunities are documented and provided to school and division leaders.
- School division leaders will use current and emerging technology-based resources (such as newsletters, social media, cloud-based shared online content, etc.) to model the appropriate use of technology.
- Technology-based achievement reports are used in student scheduling, remediation, and extension planning.

Action Steps:

Strategy 1: Incorporate hiring practices for school and division leadership positions that support the need to fully integrate technology throughout the division.

Strategy 2: Provide professional learning opportunities (e.g., pilot projects, requirement waivers, resources, etc.) regarding technology leadership and new methods in education and develop a database of resources.

Strategy 3: Implement and annually evaluate new technologies and instructional approaches that require stakeholders to seek out and acquire new knowledge and apply this knowledge to the use of technology.

Strategy 4: Support stakeholders in seeking out and acquiring new knowledge and in the application of this knowledge in the use of technology.

Strategy 5: Utilize division Innovation Specialists to further deepen knowledge of technology among students and educators to equip stakeholders with greater leadership qualities.

Strategy 6: Collaborate with other instructional staff and instructional leaders throughout our division, region, and state using cloud-based productivity software, and social networking tools to promote professional learning, leadership, and cooperation.

Strategy 7: Provide communication that supports the [Profile of a Virginia Graduate](#) and VDOE College, Digital Learning Standards, Career, and Civics Readiness initiatives.

Strategy 8: Support the role of technology in local and [statewide systems](#) to collect, monitor, and report achievement to inform practices surrounding continuous improvement efforts.

INFRASTRUCTURE

Secure and Robust Infrastructure

“Investment in infrastructure is a long term requirement for growth and a long term factor that will make growth sustainable.”

~ Chanda Kochhar

GOAL: T4

Provide a robust, secure, and comprehensive infrastructure to support a culture of technology integration and innovation throughout the school division.

Anticipated Results:

- Maintain and enhance the overall DCPS infrastructure to support students, educators, and leaders to ensure that everyone has equitable access to secure and robust networks that provide high-quality, reliable access to the Internet and other networks.
- Implement best practices that comply with federal, state, and industry guidelines and recommendations to minimize cyber threats and vulnerabilities.
- Follow student data privacy guidelines while creating an environment that allows technological ideas and innovations to grow.
- Students, educators, leaders, and administrators will have equitable access to computing devices and other digital resources, including assistive technologies.
- Seek out new technology that can enhance staff and students to be leaders in the global community.
- Seek funding resources and other avenues to ensure adequate technical and human resources that are necessary for high-quality, robust, and reliable access to technology used by students, educators, and leaders in an innovative way.
- Develop a cyber incident plan that will provide detailed actions that will be taken to ensure a quick response in the event of cyber threats.

Indicators:

- Increased reporting of equitable and continuous access to secure and reliable networks by students, educators, and leaders as indicated by the Technology Usage Survey, Internet Provider utilization reports, network access reports, and user reports.
- Staff device refresh cycles should be completed every four years or to accommodate ever-changing technology needs.
- High-Quality digital content for teaching and learning will be accessible to all staff and students.

- Grant and funding reports are completed on a monthly or quarterly basis.
- The DCPS cyber incident plan will be implemented and continually updated.
- The Help Desk will strive for staff satisfaction by maintaining a low number of open tickets.

Action Steps:

Strategy 1: Provide equitable access to high-quality, effective learning environments for all students by infusing technology into a student’s daily educational experience and reducing barriers to technology access.

Strategy 2: Provide technical assistance such as network standards, recommendations, and other information available from various stakeholder organizations that provide guidance on the changing infrastructure needed to support our technological advancements, interoperability, broadband, and network capabilities.

Strategy 3: Continually expand broadband capability to support cloud technology, digital learning, and innovative education using guidance provided by relevant stakeholder organizations.

Strategy 4: Participate in federal (i.e., [e-Rate](#)) and state (i.e., [Virginia Public School Authority](#)) programs to maximize resources available to students, educators, and school leaders.

Strategy 5: Assist the school board and division leaders in the development of [plans and programs](#) that balance safety and security issues while allowing for instructional innovation.

Strategy 6: Ensure that technology hardware is approved by the Director of Technology or his designee. All applications and software should be approved by the Software Review Committee. Enhance evaluation criteria and standards that allow the school division to make informed purchases of computing devices and other digital resources, including assistive technologies.

Technology Plan Implementation Summary

		Person(s) Responsible	Evidence
Learning	Promote and support meaningful and relevant learning experiences for students that allow them to demonstrate workplace readiness and contribute to a sustainable community.	- Teachers - Building Administrators - Division Directors - Division Coordinators - Instructional Specialists - Innovation Specialists	- Reports (industry certifications, dual enrollment numbers) - Curriculum documents - Surveys (i.e., course interests) - Student learning activities
Teaching	Promote technology-based resources that empower educators to utilize innovative strategies to support student-centered learning that increases the quality of education for all students.	- Teachers - Building Administrators - Innovation Specialists - Division Directors - Division Coordinators	- Professional development attendance - Lesson plans - Student learning activities
Leadership	Create transformational, equitable, technology-rich environments through innovative leadership practices by immersing students in a challenging personalized learning curriculum.	- Division Directors - Division Coordinators - Building Administrators - Teachers	- Attendance from professional development activities - Software and subscription data - Number of social media followers
Infrastructure	Provide a robust, secure, and comprehensive infrastructure to support a culture of technology integration and innovation throughout the school division.	- Technology Director - Technology Support Staff	- Reports (active current technology, work order data) - Network usage information

GLOSSARY OF TERMS

Accessibility – The design of software, devices and learning materials that enables all learners to fully use content and features. Although it is most generally associated with students with disabilities, the idea can be extended to include the individual learning needs of any student.

Asynchronous Learning – Learning that allows the participant to learn on their own schedule, within a determined timeframe.

Authentic Learning – Learning situations where students work on real- world experiences and challenges.

Blended Course – A course that combines two modes of instruction, online and face-to-face.

Career and Technical Education (CTE) – A set of learning experiences – both in and out of the classroom – that helps students gain the skills, technical capacity, academic foundation, and real-world knowledge they need to prepare for high-skill, high-demand, high-wage careers.

Cloud Base Computing– The delivery of computing services including servers, storage, databases, and networking over the internet.

Culturally Responsive Practices – Instructional and support practices that acknowledge that culture is central to learning and encouraging to learn by building on the experiences, knowledge and skills they bring to the classroom, group, office or meeting.

Curriculum – A plan or document that a school or school division uses to define what will be taught and the methods that will be used to educate and assess students.

Cyber school – An online instructional program (public, private, state, charter, etc.) that offers full-time education delivered primarily over the internet; term used synonymously with the terms "virtual school", "eSchool" and "online school."

Student Data Privacy – An area of data protection that concerns the proper handling of sensitive data including, notably, personal data but also other confidential data, such as certain financial data and intellectual property data, to meet regulatory requirements as well as protecting the confidentiality and immutability of the data.

Deeper Learning – Based on the definition from the Hewlett Foundation, the foundation of deeper learning is mastery of core academic content. However, that is not sufficient. Students must master six competencies: master core academic content, think critically and solve complex problems, work collaboratively, communicate effectively, learn how to learn, and develop academic mindsets. Traditional approaches to education do not support deeper learning. Students need to be “immersed in a challenging curriculum that requires them to seek out and acquire new knowledge, apply what they have learned, and build upon that to create new knowledge.”

Digital Citizenship – The ability to navigate our digital environments in a way that is safe and responsible and to actively and respectfully engage in these spaces.

Digital Learning – Any instructional practice that uses technology to support student learning, including digital learning content (which may include openly licensed content, software or simulations); access to online databases and to primary source documents; online and computer-based formative and cumulative assessments; interactive collaborative environments which may allow student collaboration with content experts and peers; hybrid or blended learning; and fully online course opportunities.

Digital Fluency – A broad set of skills which include the ability to communicate respectfully with a variety of people, evaluate and judge veracity of digital resources, evaluate and learn to use digital tools, and adapt to rapid technological change.

Distance Learning – Learning in which the participants are at a distance from each other – in other words, are separated in space. They may or may not be separated in time (asynchronous vs. synchronous). Various forms of technology are used to provide educational materials and experiences to students.

Electronic Learning (eLearning) – Education in which instruction and content are delivered primarily over the Internet; synonymous with online learning, cyber learning and virtual learning.

Full-time Online Program – A program that allows students to take a full load of online courses.

Multi-division Online Provider (MOP) – Refers to (i) a private or nonprofit organization that enters into a contract with a local school board to provide online courses or programs through that school board to students who reside in Virginia both within and outside the boundaries of the contracting division; (ii) a private or nonprofit organization that enters into contracts with multiple local school boards to provide online courses or programs to students in grades K-12 through those school boards; or (iii) a local school board that provides online courses or programs to students who reside in Virginia but outside the boundaries of the school division.

Online Course – Any course offered over the Internet; synonymous with e-course, virtual course and cyber course.

Online Learning – Education in which instruction and content are delivered primarily over the Internet; synonymous with e-learning, cyber learning and virtual learning.

Online Learning Program – An organized offering of courses delivered primarily over the internet; synonymous with eLearning Program, cyber learning and virtual learning.

Online School – A formally constituted organization (public, private, state, charter, etc.) that offers full-time education delivered primarily over the internet; synonymous with virtual school, e-school and cyber school.

Online Teacher (or Online Instructor) – An appropriately licensed teacher who is responsible for instruction in an online course.

Open Education Resources (also known as **openly licensed educational resources**) – Digital learning resources that have been published with a copyright license that permits their free use and modification. Examples include digital textbooks and apps.

Personalized Learning – An educational approach which varies the learning objectives, instructional methods, content and assessment methods based on the needs of the student, with the involvement of the student in selecting content and educational objectives.

Professional/Staff Development – Training for teachers, principals, superintendents, administrative staff, local school board members and Board of Education members designed to enhance student achievement and is required by the Standards of Quality.

Project-Based Learning – An educational approach emphasizing creativity and critical thinking which uses broad, complex problems as a method for learning both content and skills. Projects are authentic and generally cross-curricular and require collaboration, either with peers or experts.

Remote Learning – Learning where the student and the educator, or information source, are not physically present in a traditional classroom environment

Synchronous Learning – Online learning in which participants interact at the same time and in the same space.

Universal Accessibility (online) – A requirement of Section 508 of the Americans with Disabilities Act, that learning materials, including interfaces, images, sounds, multimedia elements and all other forms of information, must be made available for use by anyone, regardless of disability.

Virtual Learning – Education in which instruction and content are delivered primarily over the internet.

Virtual School – A formally constituted organization (public, private, state, charter, etc.) that offers full-time education delivered primarily over the internet; synonymous with online school, eSchool and cyber school.

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