Introduction

Since the 1980s, the Virginia General Assembly, the Virginia Board of Education and the Virginia Department of Education have recognized and supported technology's role in meeting their collective vision for schools in the Commonwealth. Through legislation, initiatives, guidance, and forward-thinking leadership, Virginia has implemented many excellent educational technology programs (Word) over these last decades.

The local autonomy of school divisions has led to diverse creative and innovative approaches to technology throughout the state. Virginia's divisions are often cited in studies and articles (Word) exploring innovation in educational technology. However, there is also an inequality that can result from local control based on local priorities, and the educational institutions of Virginia have tried to address these in various ways, with more work needed in this area.

The 2018-2023 Educational Technology Plan for Virginia is the latest revision of long-range technology plans adopted by the Board of Education to support their Comprehensive Plan. The focus of the plans have remained relatively consistent throughout the years. The most enduring consistency is the emphasis on integrating technology into the classroom, as a tool for providing ways for students to achieve in school more broadly and more deeply. The plan also has generally been composed of the subsections of the current plan in some way or another:

- 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).

The new plan was developed to be a living document, one that can change as needed because it is posted electronically and one for which the VDOE can continually supply new examples of educational technology in action, links to research and/or information, and other helpful non-commercial resources. We invite our Virginia school personnel to participate in the continual development of our plan by letting us know of good resources to share with your fellow educators. Email VirtualPrograms@doe.virginia.gov to provide information or links that could be included in the plan.

One last and very important note: the technology uses referenced in our plan includes technology for ALL students, as the increased emphasis on personalized learning makes clear. Along with the needs of typical students, the needs of exceptional students at both ends of the spectrum must be addressed.

Impact on School Division Technology Plans

Updated: 9/2021

The Technology Plan for Virginia has two distinct but related purposes. It provides a plan for the Virginia Department of Education in regards to the use and support of educational technology to support the Board of Education's Comprehensive Plan. However, it also serves as a model and standard for school divisions creating their own technology plans (§ 22.1-253.13:6. Standard 6. Planning and public involvement.). In years past, divisions have submitted their plans for approval by the VDOE. However, there is no longer a need to for this action. Divisions are asked to ensure their plans are consistent with the State Educational Technology Plan for 2018-2023, and certify that it is through the Annual Data Collection (Compliance with the Standards of Quality) which is generally conducted during July of each year. Beyond that, the VDOE will conduct surveys to gather information about how school divisions are addressing the state's goals.

Enhance Personalized, Equitable Student Learning Experiences with Technology

Goal:
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.

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.

Indicators (What evidence will exist of completion?)
- Technology Integration survey to analyze 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 develop digital resources for divisions to assist in providing innovative, personalized and deeper learning experiences for all students.
- Develop and revise existing policy and guidance documents to support innovative learning experiences.
- Work collaboratively with teacher and technology stakeholders to create instructional resources, including local alternative assessments, that can be used by all educators across the state 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.
- 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.
- 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.

Updated: 9/2021

- Prepare our students for a participatory culture by providing resources 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).

Resources

Partnerships

- Institutions of higher education
- educational stakeholder groups
- professional organizations
- business and industry groups
- local school divisions

Related Resources from VDOE and Elsewhere

- EdEquityVA

  Virginia aims to provide a high-quality education for every student, and equity is the basis of all that we do. The EdEquityVA website provides information to teachers, parents, students, administrators, counselors and everyone else involved with education about addressing equity. Access to technology and digital resources is an essential piece of any equity endeavor.

- Digital Learning Integration Standards

  New Standards are being implemented in the 2021-2022 school year. Based in part on the International Society for Technology in Education Student Standards, the Virginia standards are focused on technology skills and knowledge all students need to have to be successful during and after their preK-12 learning journey. They are designed to support the Profile of a Virginia Graduate and the 5 C's.

- **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. In August 2021, the Board of Education published Guidelines for Local Alternative Assessments: 2020-2021 and Beyond and Implementation Support for Balanced Assessment Plans. 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. #GoOpenVA is a platform where Virginia teachers can share resources they have created with other teachers, who can then adapt them for their own students. Teachers don't always have to start from scratch in creating individualized resources.

Support Innovative Professional Learning with Technology

Goal:
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.

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 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 the Technology Usage Survey responses.
- 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 policy and guidance documents to support innovative learning experiences.
- Work collaboratively with teacher and technology stakeholders to create instructional resources that can be used by educators 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 (with the Virginia Association for Supervision and Curriculum Development) 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 professional learning activities sponsored by the Virginia Department of Education (VDOE).

Updated: 9/2021

- Guide and support [teacher education programs](#) for the inclusion of technology skills that promote adaptation and integration of current and emerging technologies into professional practices, the use of assistive technology, as well as working knowledge of [digital citizenship skills and issues](#).
- Provide information about assistive technology availability 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 local school divisions to align agency professional learning goals to ensure targeted and strategic professional learning experiences in the area of instructional technology for teachers statewide.

Resources

Partnerships

- Institutions of higher education
- educational stakeholder groups
- professional organizations
- business and industry groups
- local school divisions

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. Teachers can learn about these opportunities through the weekly newsletter [Teacher Direct](#).

- **#GoOpenVA**

  Virginia is participating in the National [#GoOpen](#) campaign through our [#GoOpenVA](#) project. #GoOpenVA is a platform where Virginia teachers can share resources they have created with other teachers, who can then adapt them for their own students. It encourages "mutual mentoring" between teachers, one approach to ongoing professional learning used in higher education. It also provides an area for collaborating among teachers within the same school or across the state. Only Virginia educators can become registered members with the ability to upload materials, though the site is open to all.

- **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](#). VDOE staff have created a helpful guide for educators on [Virtual Education in Virginia: A Collection of Supports and Resources](#).

- **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. 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.

- **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](#).

- **Innovative Assessments Being Explored**
  Eleven school divisions from around the state participated in a grant to explore innovative assessments, [Student-Led Assessment Networked Improvement Community in Virginia](#). The National project results and ongoing efforts can be found at [NextGenLearning](#).

- **Guidelines for ITRTs**
  Although it is almost a decade old, the [Instructional Technology Resource Teachers – Guidelines for Teachers and Administrators](#) 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.

- **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](#). Additional information relating to traditional copyright vs. open licensing copyright can be found on the [#GoOpenVA Users Help Hub](#), and is especially relevant for educators using digital resources.

Create Cultures of Change through Innovative Leadership Practices

Goal:
Promote leadership that supports [deeper learning](#) experiences for students and innovative instructional practices by educators through the use of technology.

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.

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 leaders, schools, and/or divisions as indicated by the Technology Usage Survey responses.

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 school divisions 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](#) 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.

- Support the role of technology in statewide systems to collect, monitor, and report achievement to inform practices surrounding continuous improvement efforts.

Resources

Partnerships

- Institutions of higher education
- educational stakeholder groups
- professional organizations
- business and industry groups
- local school divisions

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 Support**

  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.

- **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 ☒.

- **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 Speak Up Research Initiative ⧉ 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:
Promote and support a secure and robust technology infrastructure to support access, adequacy, and equity.

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 reporting of equitable and continuous access to secure and reliable networks by students, educators, and leaders as indicated by the Technology Usage Survey.

Action (What action will be taken?)
- Promote equitable access to high quality, effective learning environments for all students by supporting efforts to reduce barriers to technology access.
- Provide technical assistance such as 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.
- Promote local participation 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.
- Provide assistance to school divisions on the evaluation of infrastructure costs related to broadband to ensure equity; encourage cooperative purchase agreements when appropriate.
- Provide assistance to school boards and leaders on the development of plans and programs that balance safety and security issues while allowing for instructional innovation.
- Provide evaluation criteria and standards that allow school divisions to make informed purchases of computing devices and other digital resources, including assistive technologies.
- Provide assistance to divisions on the development of regional contracts for planning, acquiring, managing, and maintaining technology, including assistive technology.
- Provide information about evaluation criteria and standards for hardware and software adoption to include a focus on interactivity, personalization and universal design features.

Updated: 9/2021

- Ensure that assistive technology services and devices are implemented in accordance with the [Individuals With Disabilities Education Act (IDEA)](#).
- Provide guidance on the 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).

Resources

Partnerships

- Institutions of higher education
- educational stakeholder groups
- professional organizations
- business and industry groups
- local school divisions

Related Resources from VDOE and Elsewhere

- **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.

- An MS Teams group helps school division technology leaders share helpful information with each other. Contact [Susan Clair](#) at VDOE for access.

- **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.

- **Accessibility and the Division Web Site**

  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](#) 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. Data is also available through the [School Quality Profiles](#).

Updated: 9/2021

- **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, divisions need help in making all kinds of decisions about implementation. The Consortium for School Networking ⧉ (CoSN) has several resources that assist school divisions tackling many different challenges.

- **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.