Burrillville School Department

Technology Plan
FY2019-FY2021
w/ FY22 Addendum Notes

Technology is vital to transforming the classroom and it must be embedded
as an instructional tool to enhance teaching and learning and improve student performance.

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Burrillville School Committee

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District Technology Committee

Justin Allen, Director of Technology
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Mission Statement

The Mission of the Burrillville Public School System is to provide high quality education to all students in a secure, nurturing environment in which all are challenged to reach full potential as lifelong learners, responsible citizens and contributing members of society, recognizing its role as the education center of our unique and evolving community.

Technology Vision Statement

Technology has become an integral component of the teaching and learning process for the staff and students of the Burrillville School Department. Technology allows users to connect, communicate and collaborate in ways that have previously been impractical or impossible. Technology expands the boundaries of the classroom, the school and even the community and provides access to information and resources of an unprecedented scope and breadth. When integrated into all areas of the curriculum, the creative and innovative application of technology skills, tools and resources allows both students and staff to more efficiently and effectively achieve their goals. A deep and thorough understanding of the responsible use of technology will allow our students to become contributing, productive members of a global 21st century society.

Because technology resources, tools and skills are dynamic, the Burrillville School Department will use this Technology Plan as a guide to support the use of technology across the district by all students and staff members. This plan will be updated as technology develops and new capabilities are available.

Beliefs

- Technology should be used to support the teaching and learning process of all students and staff members.
- Technology resources, tools and skills should be integrated throughout the curriculum.
- Professional development opportunities should be provided to staff members on the effective use of technology.
- Students should be able to demonstrate proficiency in their knowledge and use of technology.
- Students should participate in real-world technology applications to better prepare them to make the school-to-postsecondary/career transition.
- Students should participate in real-world technology applications to better prepare them for everyday life and experiences.
- Independent use of technology by students should be encouraged and promoted.
- Students should have an opportunity to share their expertise with teachers and peers.
- New and innovative technology tools and resources need to be explored and evaluated on an ongoing basis to expand the district's capacity to support teaching and learning.
- Technology should be used as a communication tool and to strengthen the home-school-community connection.
- Technology should be used to collect, organize and analyze multiple types of information across the school district.
- Technology should play a key role in the efficient and effective management of the district.
- Adequate resources need to be allocated to support the technology infrastructure of the district.

Current Technology Assessments

Staffing

The primary source of technology support for the Burrillville School Department is the district's Technology Department. The Technology Department provides support and oversees the purchasing for both information and instructional technology. This includes all hardware, software, devices, printers, peripherals, and networking equipment.

In 2018, Burrillville School Department absorbed the Town of Burrillville's Information Systems Department, with the strategy to centralize management and combine the staffing pool. Although the staff are employed by the Burrillville School Department, each position has a primary area of responsibility.

Beginning with the 2018-2019 school year, the Technology Department staff will consist of the following:

- **Full-time:** Director of Technology
- **Full-time:** Computer/Network Technician (primary responsibility - Town of Burrillville)
- **Full-time:** Computer/Network Technician (primary responsibility - Burrillville School Department)
- **Full-time:** Information Systems Analyst (primary responsibility - Town of Burrillville)
- **Part-time:** .75 Computer Technician (primary responsibility - Burrillville School Department)
- **Part-time:** .5 Data Manager

Infrastructure

Core Technology Summary
The core technology hardware deployment consists of Windows-based desktop and laptop computers, Windows-based servers, student and instructional staff Chromebooks, Apple iPads, Kindle eReaders, multifunction copiers, network laser printers, interactive whiteboards, LCD projectors, document cameras, and Chromecasts.

[Addendum For FY22 Notes] - We have reduced the number of Windows desktops and laptops, in favor of more Chromebooks. Beginning in FY22, the district will have Chromebook classroom sets for Kindergarten and First Grade, and will be 1:1 with Chromebooks from Grades 2 through 12. We have decommissioned our Server 2003, 2008 R2, and Ubuntu servers, our nComputing thin-client environment, and our Kindle eReaders.

Networking
Burrillville School Department's wide area network (WAN) connections are provided by OSHEAN and Cox Communications, and are partially funded through the Rhode Island Telecommunications Education Access Fund (RITEAF) program. As such, the Rhode Island Department of Education determines our schools' connection capacities. Currently, all schools are connected with 1Gb connections.

Currently, Cox Communications provides Internet service at 500Mbps, web content filtering via a hosted ContentKeeper content filtering appliance, and managed Cisco edge routers, which they provide support and configuration management services for as part of the contract.

Burrillville School Department's local area network (LAN) connections are a mixture of copper and fiber connections. Within each building, the top-level switch connection to the building's leased Cox router is a 1GB

copper connection. Each main distribution frame (MDF)-to-intermediate distribution frame (IDF) connection is a 10GB fiber connection between HP or Aruba switches. From there, 1GB HP and Aruba switches provide either 1GB or 100MB (depends on the device) connection to the devices (computers, printers, etc.).

The wiring in most of the buildings is Cat5 or Cat5e cabling. In some areas, the wiring is newer Cat6 cabling. Since there has been a greater reliance on wireless devices, there hasn't been a compelling reason to replace the older wiring.

Burrillville School Department's current wireless network infrastructure consists of 142 Ruckus Wireless access points (ZF7982, R600, R610, R710, and R720 models). These access points provide 100% network coverage to all schools and the Administration Building. They are centrally-managed by dual Ruckus ZoneDirector controllers, configured for redundancy and failover.

[Addendum For FY22 Notes] - We have replaced the older Ruckus ZF7982 access points with Ruckus R720 access points, and added exterior access points at each school.

Servers
In every school and the Administration Building, Burrillville School Department maintains older physical, HP Proliant servers running Windows Server 2008R2. They perform several backend functions, including file and print serving, DHCP, DNS, and Active Directory services.

In addition to the physical servers, Burrillville School Department continues to utilize an older, Citrix-based virtual environment (HP C3000 BladeSystem chassis + a pair of HP Lefthand SAN storage arrays), located at Burrillville High School. Through an increased use of Google Drive for file storage and (physical and virtual) server consolidation, we've been able to create a pair of higher performance, faster processing servers running Windows Server 2012R2 to host some internal applications in a more efficient and redundant way.

Burrillville School Department also uses an HP Easy Connect appliance, a managed, subscription-based, small form factor server capable of performing several functions, including disaster recovery.

[Addendum For FY22 Notes] - We have decommissioned our Server 2003, 2008 R2, and Ubuntu servers. Newer Proliant servers running Windows Server 2016 are now responsible for the core backend functions.

Voice Services
Voice services are provided to each building by Cox Communications. All schools and the Administration Building use the Vertical Wave phone system (PBX, with a mix of digital and analog phone lines. Burrillville Middle School and William L. Callahan's systems are voice-over-IP (VoIP). The Vertical Wave system allows users to have voicemail sent to email.

[Addendum For FY22 Notes] - All schools and the Administration Building are currently using Vertical Wave.

Student Information System
The district's student information system (SIS) is Skyward, a completely web-based platform, with the backend database hosted and maintained offsite by ISCORP.

Productivity

Burrillville School Department is a G Suite for Education school district, and employs several of the tools in the G Suite for Education productivity suite. Google accounts are provided to all students and faculty, with granular, customized policy controls for each school. Gmail accounts are currently provided to all employees and staff members, as well as students at Burrillville High School and Burrillville Middle School (with certain sending and receiving restrictions). All email is currently archived with Google Vault. Employees, staff, and students in grades 2-12 have access to Google's productivity apps called Docs, Sheets, Slides, and Drawings, along with unlimited cloud-based file storage in Google Drive.

Burrillville School Department expands the capability and functionality of these apps by allowing approved add ons, plug-ins, and extensions available from the Chrome Store.

Enterprise Applications and Services

Burrillville School Department uses several software applications and services to meet its day-to-day operational needs:

- **Special Programs** - The district uses Powerschool's Special Programs for Special Education case management.
- **Follett Destiny** - Provided through the Rhode Island Library Information Network for Kids (RILINK), the district uses Follett Destiny for its library system, which has provided greater access to media center resources to all staff and students.
- **SchoolMessenger** - SchoolMessenger is a mass-notification system, which allows the district to send voice, email, and text communications to parents, students, and staff.
- **Frontline Absence Management** - The district uses Frontline Absence Management to schedule and call substitutes when needed.
- **FMX** - The Facilities Department uses FMX for maintenance work request tracking and ticketing.
- **Spiceworks** - The Technology Department uses Spiceworks for IT work request tracking and ticketing, asset management, inventory, and reporting.
- **Google Sites** - Most of the district websites are hosted by Google and created with Google Sites.

Software

In addition to G Suite for Education apps, several software is available to staff and students, including Microsoft Office and Microsoft Publisher. Free and/or open-source applications such as Audacity, Picasa, Google Earth, Google SketchUp, Microsoft Photo Story, Finale Notepad, GIMP, Inkscape, Scratch, Scribus, Xmind, TuxPaint, and Freemind are made available, as well as various Internet plug-ins and applications such as Apple Quicktime, Java, Real Player, Adobe Reader, Adobe Flash, and Adobe Shockwave. Specialized labs and programs have access to additional software and applications based upon need, licensing requirements and availability of funds.

In addition to the above Windows-based software, the district allows reviewed and approved apps to be used with district Google accounts on Chromebooks.

[Addendum For FY22 Notes] - We are using many more software applications than before. Many teachers and students developed new skills during remote and hybrid instruction.

Technology Breakdown

The following is a breakdown of the classroom and instructional area technology for each school:

- **Austin T. Levy School**
  - Each instructional staff member uses an HP 14 G1 Chromebook; instructional staff members may or may not still use a Windows desktop computer for teacher use (some no longer need it).
  - Classrooms have an LCD projector and document camera available for use that are compatible with a Chromebook or Windows computer.
  - Most classrooms have 2-3 Windows desktop computers for student use (this is based on teacher choice).
  - The school has a 25-station Windows desktop computer lab.
  - The school has 100+ Apple iPad minis (distributed throughout classrooms).

- **Burrillville High School**
  - Each instructional staff member uses an HP 14 G1 Chromebook; instructional staff members may or may not still use a Windows desktop computer for teacher use (some no longer need it).
  - Classrooms have an LCD projector and document camera available for use that are compatible with a Chromebook or Windows computer.
  - Some classrooms have 2-4 Windows desktop computers for student use (this is based on teacher choice).
  - The school has four, approximately 25-station Windows computer labs.
  - Each student is assigned an 11" Chromebook.

- **Burrillville Middle School**
  - Each instructional staff member uses an HP 14 G1 Chromebook; instructional staff members may or may not still use a Windows desktop computer for teacher use (some no longer need it).
  - Classrooms have an LCD projector and document camera available for use that are compatible with a Chromebook or Windows computer
  - Some classrooms have 2-4 Windows desktop computers for student use (this is based on teacher choice).
  - The school has a three, approximately 25-station Windows computer labs.
  - The school has _____ interactive whiteboards.
  - Each student is assigned an 11" Chromebook.

- **Steere Farm Elementary School**
  - Each instructional staff member uses an HP 14 G1 Chromebook; instructional staff members may or may not still use a Windows desktop computer for teacher use (some no longer need it).
  - Classrooms have an LCD projector and document camera available for use that are compatible with a Chromebook or Windows computer.
  - Some classrooms have 2-4 Windows desktop computers for student use (this is based on teacher choice).
  - The school has a one, approximately 25-station Windows computer lab.
  - The school has four interactive whiteboards.
  - Each homeroom is assigned a classroom set of 11" Chromebooks, enough for each student.

- **William L. Callahan School**
  - Each instructional staff member uses an HP 14 G1 Chromebook; instructional staff members may or may not still use a Windows desktop computer for teacher use (some no longer need it).
  - Classrooms have an LCD projector and document camera available for use that are compatible with a Chromebook or Windows computer
  - Some classrooms have 2-4 Windows desktop computers for student use (this is based on teacher choice).
  - Each homeroom is assigned a classroom set of 11" Chromebooks, enough for each student.

[Addendum For FY22 Notes] - We are using many more software applications than before. Many teachers and students developed new skills during remote and hybrid instruction. This section will be updated to include the new technology we're using in each building.

Goals Summary

Goal 1 - Support teaching and learning by improving access to a variety of technology tools and resources for all students and staff members.

Goal 2 - Provide professional development necessary to support technology use and integration.

Goal 3 - Improve and diversify communication using a variety of tools to strengthen the home/school connection and create greater community engagement.

Goal 4 - Establish and refine data systems to provide information to guide instruction and assess student performance.

Goal 5 - Pursue innovative and effective technology solutions that increase efficiency of operations and the utilization of resources.

[Addendum For FY22 Notes] - We will maintain focus on these existing goals, with the intent on applying what we've learned during remote and hybrid instruction.

Objectives and Action Plans

Goal 1: Data Management

To evaluate the student information system, data management process, and state reporting responsibilities of the Burrillville School Department.

Action Plan	Responsibility	Resources Needed	Timeline	Evaluation
Evaluate student information system	● Tech Director ● Data Manager ● Tech Committee	● Develop and conduct evaluation surveys ● Discuss results with Tech Committee ● Discuss with Skyward ● Evaluate new systems, if necessary	Evaluation of Skyward will be ongoing. By the end of this plan, we'll determine if we continue with Skyward	● Tech Director ● Data Manager ● Tech Committee
Expand our Skyward self-help library	● Tech Director ● Data Manager	● Determine which guides need to be created ● Create the guides	Ongoing project	● Tech Director ● Data Manager
Evaluate Skyward training needs	● Tech Director ● Data Manager ● Tech Committee	● Develop and conduct evaluation surveys ● Discuss with Curriculum	Ongoing project	● Tech Director ● Data Manager ● Tech Committee
Conduct Skyward training	● Tech Director ● Data Manager ● Curr. Director ● Trainers	● Develop training opportunities ● Solicit trainers ● Secure funding for paying the trainers ● Conduct the training	Ongoing project	● Tech Director ● Data Manager ● Tech Committee ● Curr. Director

***[Addendum For FY22 Notes]** - We have expanded the use of Skyward and will continue to provide training opportunities.*

Goal 2: Policy and Process

To evaluate and update existing Burrillville School Department policies as they relate to technology, and create new policies as necessary.

Action Plan	Responsibility	Resources Needed	Timeline	Evaluation
Evaluate and update the Acceptable Use Policy (AUP)	- Tech Director - Tech Commi. - Admin Team - School Comm.	- Tech Comm. meetings - Tech Comm. subcommittee meetings	Spring 2019 for publication in the 2019-2020 handbooks	- Tech Director - Tech Comm. - Admin Team - School Comm.
Evaluate and update the Mobile Device Home Use Policy	- Tech Director - Tech Committee - Admin Team - School Committee	- Tech Committee meetings - Tech Committee subcommittee meetings	Spring 2019 for publication in the 2019-2020 handbooks	- Tech Director - Tech Comm. - Admin Team - School Comm.
Evaluate and update the Bring Your Own Device (BYOD) policy	- Tech Director - Tech Committee - Admin Team - School Committee	- Tech Committee meetings - Tech Committee subcommittee meetings	Spring 2019 for publication in the 2019-2020 handbooks	- Tech Director - Tech Comm. - Admin Team - School Comm.
Evaluate and update the Social Media Policy	- Tech Director - Tech Committee - Admin Team - School Committee	- Tech Comm. meetings - Tech Comm. subcommittee meetings	Spring 2019 for publication in the 2019-2020 handbooks	- Tech Director - Tech Comm. - Admin Team - School Comm.
Create a content filtering policy	- Tech Director - Tech Committee - Admin Team - School Committee	- Tech Committee meetings - Tech Committee subcommittee meetings	Fall, 2018	- Tech Director - Tech Comm. - Admin Team - School Comm.
Create a policy for compliance with the Identity Theft Protection Act	- Tech Director - Tech Committee - Admin Team - School Committee	- Tech Committee meetings - Tech Committee subcommittee meetings	Fall, 2018	- Tech Director - Tech Comm. - Admin Team - School Comm.
Create a 3rd-party funding/donation policy for classroom technology	- Tech Director - Tech Committee - Admin Team - School Committee	- Tech Comm. meetings - Tech Comm. subcommittee meetings	Fall, 2018	- Tech Director - Tech Comm. - Admin Team - School Comm.

[Addendum For FY22 Notes] - We will continue to evaluate our policies.

Goal 3: Infrastructure

To evaluate and update existing Burrillville School Department IT infrastructure.

Action Plan	Responsibility	Resources Needed	Timeline	Evaluation
Evaluate the district's current server infrastructure	- Tech Director - Tech Comm. - Tech Dept.	- Funding for an IT environmental health assessment - Funding for upgraded equipment (capital budget)	ASAP, as funding allows	- Tech Director - Tech Comm. - Tech Dept.
Evaluate the district's current networking infrastructure	- Tech Director - Tech Comm. - Tech Dept.	- Funding for an IT environmental health assessment - Funding for upgraded equipment (capital budget)	ASAP, as funding allows	- Tech Director - Tech Comm. - Tech Dept.
Evaluate the district's phone systems	- Tech Director - Facilities Director	Funding for upgraded equipment (capital budget)	ASAP, as funding allows	- Tech Director - Facilities Director.
Evaluate the district's current school safety (camera and door swipe) technologies	- Tech Director - Facilities Director	Funding for upgraded equipment (capital budget)	ASAP, as funding allows	- Tech Director - Facilities Director

[Addendum For FY22 Notes] - We will continue to evaluate the needs of the district with regards to our servers. The Technology Department continually works with the Facilities Department to address building and environmental needs.

Goal 4: Teaching and Learning

To evaluate and update existing technology-related "teaching and learning" tools; and provide professional development support related to "teaching and learning".

Action Plan	Responsibility	Resources Needed	Timeline	Evaluation
Evaluate the district's current teaching and learning tools (hardware)	● Tech Director ● Tech Comm. ● Tech Dept. ● Admin Team	● Develop and conduct evaluation surveys ● Discuss results with Tech Committee ● Funding for upgraded equipment (operational budget)	Fall, 2018	● Tech Director ● Tech Comm. ● Tech Dept. ● Admin Team
Evaluate the district's current teaching and learning tools (software)	● Tech Director ● Tech Committee ● Tech Department ● Admin Team	● Develop and conduct evaluation surveys ● Discuss results with Tech Committee ● Funding for upgraded equipment (operational budget)	Fall, 2018	● Tech Director ● Tech Committee ● Tech Department ● Admin Team
Increase the visibility of the district's programs and activities online	● Tech Director ● Tech Committee ● Tech Department ● Teachers ● Admin Team	● Leverage existing video equipment to record class activities ● Funding for post-production equipment ● Showcase our programs and activities online	Ongoing project	● Tech Director ● Tech Committee ● Tech Department
Provide professional development opportunities to support teaching and learning	● Tech Director ● Tech Committee ● Curr. Director	● Develop training opportunities ● Solicit trainers ● Secure funding for paying the trainers ● Conduct the training	Ongoing project	● Tech Director ● Tech Committee ● Curr. Director
Continue the district's blended learning initiative	● Tech Director ● Tech Committee ● Curr. Direc	● Develop training opportunities ● Secure funding for equipment ● Expand wireless infrastructure to accommodate blended technologies	Ongoing project	● Tech Director ● Tech Committee ● Curr. Director

Appendices

Appendix A - International Society for Technology in Education Standards (ISTE•S) for Students

1. **Empowered Learner**
   Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

   a. Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.

   b. Students build networks and customize their learning environments in ways that support the learning process.

   c. Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.

   d. Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

2. **Digital Citizen**
   Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

   a. Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

   b. Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

   c. Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

   d. Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

3. **Knowledge Constructor**
   Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

   a. Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

b. Students evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.

c. Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.

d. Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

4. **Innovative Designer**
Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

a. Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

b. Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

c. Students develop, test and refine prototypes as part of a cyclical design process.

d. Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

5. **Computational Thinker**
Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

a. Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.

b. Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.

c. Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

d. Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

6. **Creative Communicator**
Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

a. Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

b. Students create original works or responsibly repurpose or remix digital resources into new creations.

c. Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.

d. Students publish or present content that customizes the message and medium for their intended audiences.

7. **Global Collaborator**
   Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

   a. Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.

   b. Students use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.

   c. Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

   d. Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.

Appendix B - International Society for Technology in Education Standards (ISTE•T) for Educators

1. **Learner**
   Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. Educators:

   a. Set professional learning goals to explore and apply pedagogical approaches made possible by technology and reflect on their effectiveness.

   b. Pursue professional interests by creating and actively participating in local and global learning networks.

   c. Stay current with research that supports improved student learning outcomes, including findings from the learning sciences.

2. **Leader**
   Educators seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning. Educators:

   a. Shape, advance and accelerate a shared vision for empowered learning with technology by engaging with education stakeholders.

   b. Advocate for equitable access to educational technology, digital content and learning opportunities to meet the diverse needs of all students.

   c. Model for colleagues the identification, exploration, evaluation, curation and adoption of new digital resources and tools for learning.

3. **Citizen**
   Educators inspire students to positively contribute to and responsibly participate in the digital world. Educators:

   a. Create experiences for learners to make positive, socially responsible contributions and exhibit empathetic behavior online that build relationships and community.

   b. Establish a learning culture that promotes curiosity and critical examination of online resources and fosters digital literacy and media fluency.

   c. Mentor students in safe, legal and ethical practices with digital tools and the protection of intellectual rights and property.

   d. Model and promote management of personal data and digital identity and protect student data privacy.

4. **Collaborator**

   Educators dedicate time to collaborate with both colleagues and students to improve practice, discover and share resources and ideas, and solve problems. Educators:

   a. Dedicate planning time to collaborate with colleagues to create authentic learning experiences that leverage technology.

   b. Collaborate and co-learn with students to discover and use new digital resources and diagnose and troubleshoot technology issues.

   c. Use collaborative tools to expand students' authentic, real-world learning experiences by engaging virtually with experts, teams and students, locally and globally.

   d. Demonstrate cultural competency when communicating with students, parents and colleagues and interact with them as co-collaborators in student learning.

5. **Designer**

   Educators design authentic, learner-driven activities and environments that recognize and accommodate learner variability. Educators:

   a. Use technology to create, adapt and personalize learning experiences that foster independent learning and accommodate learner differences and needs.

   b. Design authentic learning activities that align with content area standards and use digital tools and resources to maximize active, deep learning.

   c. Explore and apply instructional design principles to create innovative digital learning environments that engage and support learning.

6. **Facilitator**

   Educators facilitate learning with technology to support student achievement of the ISTE Standards for Students. Educators:

   a. Foster a culture where students take ownership of their learning goals and outcomes in both independent and group settings.

   b. Manage the use of technology and student learning strategies in digital platforms, virtual environments, hands-on makerspaces or in the field.

   c. Create learning opportunities that challenge students to use a design process and computational thinking to innovate and solve problems.

   d. Model and nurture creativity and creative expression to communicate ideas, knowledge or connections.

7. **Analyst**

   Educators understand and use data to drive their instruction and support students in achieving their learning goals. Educators:

   a. Provide alternative ways for students to demonstrate competency and reflect on their learning using technology.

   b. Use technology to design and implement a variety of formative and summative assessments that accommodate learner needs, provide timely feedback to students and inform instruction.

   c. Use assessment data to guide progress and communicate with students, parents and education stakeholders to build student self-direction.

Appendix C - International Society for Technology in Education Standards (ISTE•A) for Administrators

1. **Visionary Leadership**
   Administrators inspire and lead development and implementation of a shared vision for comprehensive integration of technology to promote excellence and support transformation throughout the organization.

   a. Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes use of digital age resources to meet and exceed learning goals, support effective instructional practice, and maximize performance of district and school leaders.

   b. Engage in an ongoing process to develop, implement and communicate technology-infused strategic plans aligned with a shared vision.

   c. Advocate on local, state and national levels for policies, programs and funding to support implementation of a technology-infused vision and strategic plan

2. **Digital Age Learning Culture**
   Administrators create, promote and sustain a dynamic, digital age learning culture that provides a rigorous, relevant and engaging education for all students.

   a. Ensure instructional innovation focused on continuous improvement of digital age learning.

   b. Model and promote the frequent and effective use of technology for learning.

   c. Provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners.

   d. Ensure effective practice in the study of technology and its infusion across the curriculum.

   e. Promote and participate in local, national and global learning communities that stimulate innovation, creativity and digital age collaboration.

3. **Excellence in Professional Practice**
   Administrators promote an environment of professional learning and innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources.:

   a. Allocate time, resources and access to ensure ongoing professional growth in technology fluency and integration.

   b. Facilitate and participate in learning communities that stimulate, nurture and support administrators, faculty and staff in the study and use of technology.

   c. Promote and model effective communication and collaboration among stakeholders using digital age tools.

    d. Stay abreast of educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning.

4. **Systemic Improvement**
Administrators provide digital age leadership and management to continuously improve the organization through the effective use of information and technology resources.

    a. Lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources.

    b. Collaborate to establish metrics, collect and analyze data, interpret results and share findings to improve staff performance and student learning.

    c. Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals.

    d. Establish and leverage strategic partnerships to support systemic improvement.

    e. Establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching and learning.

5. **Digital Citizenship**
Administrators model and facilitate understanding of social, ethical and legal issues and responsibilities related to an evolving digital culture.

    a. Ensure equitable access to appropriate digital tools and resources to meet the needs of all learners.

    b. Promote, model and establish policies for safe, legal and ethical use of digital information and technology.

    c. Promote and model responsible social interactions related to the use of technology and information.

    d. Model and facilitate the development of a shared cultural understanding and involvement in global issues through the use of contemporary communication and collaboration tools.

Appendix D - ISTE Essential Conditions

Shared Vision Proactive leadership develops a shared vision for educational technology among all education stakeholders, including teachers and support staff, school and district administrators, teacher educators, students, parents and the community.

Empowered Leaders Stakeholders at every level are empowered to be leaders in effecting change.

Implementation Planning All stakeholders follow a systematic plan aligned with a shared vision for school effectiveness and student learning through the infusion of information and communication technology (ICT) and digital learning resources.

Consistent and Adequate Funding Ongoing funding supports technology infrastructure, personnel, digital resources and staff development.

Equitable Access All students, teachers, staff and school leaders have robust and reliable connectivity and access to current and emerging technologies and digital resources.

Skilled Personnel Educators, support staff and other leaders are skilled in the selection and effective use of appropriate ICT resources.

Ongoing Professional Learning Educators have ongoing access to technology-related professional learning plans and opportunities as well as dedicated time to practice and share ideas.

Technical Support Educators and students have access to reliable assistance for maintaining, renewing and using ICT and digital learning resources.

Curriculum Framework Content standards and related digital curriculum resources align with and support digital age learning and work.

Student-Centered Learning Planning, teaching and assessment all center on the needs and abilities of the students.

Assessment and Evaluation Teaching, learning, leadership and the use of ICT and digital resources are continually assessed and evaluated.

Engaged Communities Leaders and educators develop and maintain partnerships and collaboration within the community to support and fund the use of ICT and digital learning resources.

Support Policies Policies, financial plans, accountability measures and incentive structures support the use of ICT and other digital resources for both learning and district/school operations.

Supportive External Context Policies and initiatives at the national, regional and local levels support schools and teacher preparation programs in the effective implementation of technology for achieving curriculum and learning technology (ICT) standards.