Technology Plan

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<u>Introduction</u>

The Union-Endicott Central School District is located in Broome County in the Southern Tier region of New York State. It is a suburban community with ties to business, academic, and cultural resources. Several advanced technology businesses base their operations from the Southern Tier. These businesses provide valuable resources and partnerships to help our students succeed. Our relationship with Binghamton University also provides connections that help not only our students but our teachers as well. Through our connections with the university, teachers can access continuing educational opportunities as well as provide a mentoring experience for student teachers.

As the second largest school district in the Broome-Tioga Board of Cooperative Educational Services (BOCES) region, Union-Endicott educates approximately 4000 students K-12 within six school buildings. The Union Endicott CSD currently has 25 administrators, 374 certified professional staff and 191 support staff (civil service plus aides and monitors). The free and reduced lunch percentage for the district is 51%.

All classrooms and work areas in the district are equipped with networked computers. Computers are equipped with a suite of applications based on the users' needs. All rooms in the district are linked through local-area network connections with Internet access that meets the requirements of the Child Internet Protection Act (CIPA) as codified in Board Policy. Students and staff members have district network accounts that allow them to access their own networked drives from any networked computer in the district or from their home computers. In addition, shared drives are available to allow students and staff to collaborate on projects and to share files. All staff members and students from 4th to 12th grades have district e-mail accounts.

The mission of the Union–Endicott Central School District is to develop students who are responsible, self–directed, lifelong learners. Technology is playing a major role in meeting that mission by helping students of the 21st century to live, learn and work successfully in an increasingly complex and information rich society. Our students must be ready for a changing world and global work community. We must prepare our students for the challenges of post secondary education and the workplace of the future.

The Union-Endicott CSD Technology Plan describes a three-year program that will be modified each year based on experience, progress, data, and new technologies. The Technology Advisory Team serves as the instructional technology planning committee for the district. This team was established and charged with the task of overseeing the long range plan for technology in May, 2015. The team is made up of administrators and teachers from elementary and secondary levels along with BOCES technology support staff, representation from the community/IT professional community, a library media specialist and a student.

District Philosophy

The district philosophy is to provide every student with the opportunity to develop the skills and attitude necessary to become a self-directed, responsible learner who can function as a contributing member of the world community. Students have greater control over their own learning through the use of technology. Technology benefits students through the use of readily available electronic sources to create, access, exchange and analyze information. Technology supports learning by accommodating different curricular needs and differing learning styles. The Information Services and Library Media Services departments will provide and support a technology rich learning environment in which students and teachers use instructional technology as a natural component of their learning. The Union-Endicott School District believes:

District Belief Statements

We Believe:

- Education is the shared responsibility of students, family, school, and community, and forms the foundation of an ethical democratic society.

- Each student can learn and is entitled to an equal opportunity to reach his or her potential in an environment that is conducive to learning and fosters success.

- A life-long pursuit of excellence is built upon a foundation of academic success as measured by local, state, and federal assessments.

- Education encompasses intellectual, emotional, physical, aesthetic, and social growth.

- The development of character is essential for effective interpersonal relationships.

District Commencement Goals

- Effective Communicator – Effective communications is vital to success in life. An effective communicator has the ability to interact with others in a variety of ways. Communicating is the ability to share one's thoughts and feelings as well as to understand those of others. An effective communicator must be able to read critically, to analyze and summarize information, and to persuade and influence others.

- Lifelong Learner/Worker – Learning and working are processes that must continue throughout our lives. These two processes are linked in that learning requires work and work requires learning. A successful lifelong learner/worker must develop the ability to be a self-directed individual, problem solver, and team player.

- Involved Citizen – Citizenship is the active involvement in community life: family, school, and work, local, state, national and world. The citizens of these communities must be skilled, committed, knowledgeable, and involved. An effective citizen values democratic principles, recognizes global interdependency, understands and respects culture, and participates in community life.

- Personal Excellence – Striving for the highest standards of performance and qualities of character leads to personal excellence. An awareness of self, a positive attitude toward life, physical and emotional well-being, and good character are essential to achieving this level of excellence.

SUMMARY OF FOCUS AREAS

Based on the meetings of the Technology Advisory Team and the content of this Technology Plan, the areas of focus are as follows:

1) Continue to update the infrastructure by recabling all buildings that are still in need and installing UPS battery backup. Update switches as necessary.
2) Reinstate the replacement cycle of existing equipment that was derailed by budget cuts several years ago. This includes desktop computers, smartboards, laptops, and ipads. Discretion must be used when buying large number of devices using one-time funding streams as these devices have limited lives and replacement costs will be prohibitive.
3) Consolidate the multiple security/camera systems. This will allow access to all cameras in the district through one system.
4) Continue to investigate more economical and efficient replacements as technology advances. For example, replacing desktops with the "all in one" computer/monitor units is cost effective while providing a higher level of productivity and ease of use.
5) While not moving to a one-to-one status for student devices, continue to identify and rectify areas of inequity of access to technology for students. For example, providing chromebook and laptop carts in schools where demand is high. Also, reinstate the computer lab at TJW. Also, continue to encourage teachers to use BYOD (Bring your own device) with students to tap into the vast resources found on the internet as relates to instruction.
6) For the 2015-2016 school year, approximately 200 chromebooks with carts were purchased. These will be deployed to each school, with 2 at the high school and the middle school. From 24 to 30 chromebooks will be on each cart. Several teachers have been trained over the summer and will take the lead on using these versatile devices. In the next two years, the plan is to move from ipads to chromebooks due to the higher return on investment as it relates to student use and achievement. Ipads seem to be more usable at the primary grades and they will continue to be supported.
7) Take the pulse of teachers as it regards to technology usage primarily in the areas of software and device usage and sharing. The team helped develop a survey that will be taken by teachers at the beginning of the school year that will identify software that is being under utilized in addition to software that may be more useful. With limited resources to spend on software, reprioritize where they will do the most good.
8) Professional development for teachers is of the highest importance. While purchasing devices and software is important, if no one knows how to use them, it is wasted money. Work with EERC and PDRC from BOCES to target areas of highest need and provide PD for teachers. Encourage teachers who attended training in the summer to share their expertise with other teachers both informally and through EERC classes. Another suggestion from the team was to be creative with scheduling classes. For example, offer a class for teachers at AGM right at dismissal time.
9) In the same vein, after talking to the team, it is obvious that many teachers need PD on topics that aren't new. For example, high school students have had email accounts for years but the teachers aren't aware of that. This year we will be adding email accounts for middle school students and we need to make teachers aware. Communication from the team and from the IT office is crucial.
10) Digital Citizenship curriculum needs to be integrated into Olweus and other areas where appropriate. This curriculum is a year 2 and/or 3 priority and should be developed through the curriculum directors, the IT department, along with building Olweus teams. Especially at earlier grades and middle school, students need to be aware of their digital footprint, responsible use of the internet, and how to ensure their own safety as they use the internet.

Vision for the Use of Technology

The Union Endicott Central School District is committed to preparing our students to become lifelong learners and productive members of a global society through the use of technology. Technology is the application of tools that inspire and motivate students; allowing self-directed learning and increasing global opportunities. Technology has the capacity to make work more efficient and to streamline communication. We are also committed to students recognizing the value and benefits of technology but also appreciating the challenges, pitfalls and responsibilities that technology plays in their futures. Our ultimate goals are to teach technology as integrated tools, provide equitable access, and to promote ethical usage. To that end we have embraced the National Educational Technology Standards for students, teachers, and administrators (see Appendix A). Our focus continues on collaboration, communication, ethical behavior, and personal growth using technology tools and skills.

In a district where students are learning with technology:

- Students acquire lifelong learning-with-technology skills, enabling them to adapt to rapid changes in society and the workplace.
- Students select and use appropriate technology as a tool for researching and acquiring knowledge, for processing and organizing information, problem solving, and for presentation.
- Students become knowledgeable about legal and ethical issues associated with the use of technology and transfer the knowledge to practice.
- Students collaborate with peers and adults through asynchronous learning opportunities.

In a district where teachers are teaching with technology:

- Teachers model the use of technology as a tool for life-long and self-directed learning.
- Teachers implement technology as a research tool, as a processing tool, and as a presentation tool.
- Teachers seek professional development opportunities that will improve their ability to infuse their curriculum with technology.
- Teachers integrate technology to enhance effective learning.
- Teachers model and teach the correct legal and ethical use of technology.

In a district where leaders are leading with technology:

- Leaders implement a vision for instruction will include the innovative use of new and emerging technologies to enhance the educational process.
- Leaders establish procedures and practices which integrate technology into the curriculum and which provide incentives, staff development, and motivation.
- Leaders model the efficient and effective use of technology to communicate with schools, parents, and the community.
- Leaders incorporate technology into the design of curriculum and school facilities.
- Leaders establish and enforce technology-related procedures and practices that strive to protect all members of the school community.

Needs Assessment

Endicott Educational Resource Center

The Endicott Educational Resource Center (EERC) is a staff development center for the Union-Endicott district and an important technology partner. The EERC serves the educators and school community of the district. A policy board consisting of teachers, administrators, parents, business people, higher education representatives, board of education members and non-public schoolteachers run the EERC. The board meets monthly to determine in-service programs, which satisfy professional needs.

The EERC provides valuable information about the technology needs of the district through classes requested, study group topics, and conference requests.

Software and Hardware Survey of Staff

The committee recommended the distribution of a survey to gather information about use of software and technology that is already available in the district, along with suggestions for improvement, and suggestions for professional development for teachers.   See Appendix B for the survey.

Technology Goals

Student Learning

- Student Achievement: Enhance student learning through the integration of technology across all curriculum areas in support of the Union Endicott Commencement Goals, Board of Education targets and all Learning Standards.
- Curriculum Integration: Improve and enhance instructional programs by ensuring that support resources equal the needs of added technology initiatives and programs.
- Stay up-to-date with new technology that will give equitable access to students and teachers.
- Technology Delivery: Create connected classrooms that will increase student opportunities to interact with a broader educational community using digital communication tools.
- Digital Citizenship: Develop a curriculum regarding internet safety, responsible use of resources, your digital footprint,

Professional Development

- Programs: Develop and implement effective professional development programs in support of instructional technologies, management tools and communication.
- Supporting Resources: Create and maintain documentation about technology related processes and procedures to communicate more effectively with staff members.
- Work with BOCES tech support and/or professional development resources to provide flexible and relevant PD for teachers and staff.
- Work with EERC to have teachers who have become proficient in using technology to provide classes for other teachers. Look at more flexible scheduling to allow greater access.
- Use the members of the technology advisory team to communicate new ideas and resources to the greater community.

Family Communication, Collaboration, and Community Relations

- Communication: Use telecommunication services and technological innovations to increase our effectiveness in communicating with parents and the community.
- Collaboration: Use technology to create partnerships and to develop opportunities with the local community.
- Provide access to the internet for families through creative methods while ensuring security. Possible in public libraries etc.

<u>Infrastructure, Technical Support, Hardware and Software</u>
- o Infrastructure Needs/Technical Specifications and Design: Enhance the networking infrastructure to improve the reliability of the network and to maximize efficiency. Work is underway to rewire the school buildings to maintain equitable access for all teachers and students.
- o Increase Access: Improve and enhance technology management programs by ensuring that support resources equal the needs of added technology initiatives and programs.
- o Identify and remediate areas of the district buildings where internet access is sometimes problematic.
- o Add UPS (battery backup) capability.
- o Consolidate the multiple security/camera systems. This will allow access to all cameras in the district through one system.

Student Learning

Student Achievement: Enhance student learning through the integration of technology across all curriculum areas relative to the Union Endicott Commencement Goals, Board of Education goals and all Learning Standards.

Priorities for Year 1

o Review the implementation of the technology standards K-12 to ensure that students are being taught the intended skills.
o Provide appropriate technology for students with disabilities to ensure equity for all students.
o Teach keyboarding skills beginning in 2nd grade to prepare for online testing.
o Increase awareness about various online learning opportunities for students to participate in learning beyond the school environment.
o Pilot learning opportunities using Schoology, chromebooks, ipads and apps, and additional educational software.
o Provide professional development for teachers using flipped classrooms, Schoology, gaming and other new initiatives.
o Develop a curriculum for Digital Citizenship starting at grade 4. Integrate into Olweus when possible.
o Give all secondary students UE email addresses. Keep student accounts active over the summer to allow for an accumulation of student work on their system drives.

Priorities for Year 2 and Year 3

o Increase awareness of Digital Citizenship in the middle and high school years.
o Work with secondary teachers to work this topic into existing curriculum.
o Revisit the effects of flipped classrooms, Schoology and chromebooks to determine where to expand these initiatives.
o Continue to develop system access outside of the school day and the school building
o Evaluate success of learning opportunities using simulation and gaming software to access students' areas of interest and to motivate them to learn.
o Implement email address for students from grades 4 and up.
o Continue to encourage teachers to use BYOD in their classrooms to build student engagement.

Technology Delivery: Create connected classrooms that will increase student opportunities to interact with a broader educational community using digital communication tools.

Priorities for Year 1
o Continue to provide the technology necessary for students to engage in self-directed learning (eg. Ipads and apps, chromebooks, laptops and desktop computers). Reinstitute the replacement cycle of existing hardware while strategically placing new hardware where it will make the most impact.
o Identify and remediate areas of school buildings where the internet is intermittently unavailable.
o Identify software licenses that are being used to maximize learning while identifying those that are under-utilized and not necessary to continue.
o Continue to support innovative ideas like "flipped classroom" at the secondary level.

Priorities for Year 2 and year 3
o Develop ways to connect students and classrooms across geographic areas to maximize the sharing of cultures, content and cooperative learning.
o Implement new technology in the areas of interactive TV's and document cameras as replacement of projectors, smartboards and other devices with newer HDMI and LED technologies.

<u>Professional Development</u>:

Programs: Develop and implement effective professional development programs relative to instructional technologies, management tools and communication.

<u>Priorities for Year 1</u>

o Develop training opportunities on new hardware (eg. chromebooks, ipads and tablets) and software (eg. Microsoft Office 2013, Adobe Creative Suite, Schoology, Outlook, Stafftrac) for faculty and staff.

o Pilot technology mentoring program at all schools to provide building based support and to minimize the amount of time that teachers are away from the building.

o Assess the technology proficiency of teachers and administrators to provide more focused professional development using the National Educational Technology Standards (NETS) as a basis for competencies.

o Expand use of Compass Odyssey advanced management and additional features like Odyssey writer to maximize potential for learning.

o Continue to provide access to "Type to Learn" as the tool to teach keyboarding skills to primary students.

o Provide training in classroom technology management to increase student engagement. (eg. Gaming, google apps)

o Work collaboratively with the EERC to continue to provide training and in-service classes according to staff needs and skills assessments.

o Use the Technology Advisory Team to set direction, communicate with stakeholders and provide expertise in developing the future technology needs of the district.

<u>Priorities for Year 2 and Year 3</u>

o Assess the technology proficiency of support staff to provide more focused professional development focusing on increased productivity in management operations.

o Develop training opportunities on new and emerging hardware (eg.interactive TV's) and software (eg. Windows 10) for staff.

Family Communication, Collaboration, and Community Relations:

Communication: Use telecommunication services and technological innovations to increase our effectiveness in communicating with parents and the community.

Priorities for Year 1
- o Continue to encourage teachers to use the electronic gradebook in Schooltool to allow parents access through Parent Portal.
- o Include in freshmen and new student orientations presentations on Digital Citizenship and internet safety.
- o Develop methods for students and families to access resources outside of the school day to ensure equity.
- o Continue current UE communication vehicles – district website, PTA Council, building meetings, weekly email from the superintendent – with parents and community regarding technology design, enhancements and availability.
- o Continue to share and communicate student progress data through existing and new data systems.
- o Continue the district's web page – www.uek12.org – as an outreach to our community: links to community organizations, Board of Education school governance documents, and research tools as subject to licensing agreements.

Priorities for Year 2 and Year 3
- o Create opportunities for students and parents to access the technology resources of the district beyond the school day.
- o Maintain and improve the processes within our student management software with regards to attendance, grade reporting, medical information and discipline.
- o Use social media to communicate updates in technology.

Infrastructure, Technical Support, Hardware and Software

Infrastructure Needs/Technical Specifications and Design: Enhance the networking infrastructure to improve the reliability of the network and to maximize efficiency.

Priorities for Year 1

o Ensure that wireless infrastructure is available in all areas of all buildings to improve flexibility and access to resources.
o Research security and technical issues related to Virtual Desktop access.
o Expand security through use of new technology (eg. Cameras, digital backup, badge readers)
o Research technology models and processes that will reduce the amount of energy consumed by the district.
o Document the disaster recovery plan for the district as it relates to technology and the network.
o Upgrade the servers, fiber backbone and switch infrastructure as needed.
o Continue to implement efficient storage structures that provide more opportunities to share data while alleviating retention space needs.
o Continue the cost efficient replacement schedule for all hardware. Note that all schools have moved to centralized printing in order to consolidate and reduce consumables and maintenance.

Priorities for Year 2 and Year 3

o Ongoing analysis of the district's network for efficiency, reliability and capacity.Implement an effective and efficient retention procedure for email and file management as required.
o Re-evaluate cost effectiveness of Voice over Internet Protocol (VoIP) and consider implementing as a replacement to our Centrex phone system.
o Continue the cost efficient replacement schedule for all hardware.
o

Evaluation and Monitoring

Technology implementation is a continuous process that adapts to the organization's changing circumstances and includes ongoing evaluation. Effective evaluation requires review and adaptations to priorities and strategies as implementation proceeds. Continuous evaluation also facilitates changes to the plan as necessary.

Evaluating the implementation of our technology plan can be conducted by various means. Simple observations, both negative and positive, that have been made by students and teachers using the technology are most helpful. Technology Advisory Team members will meet regularly to review processes, access, reliability, use, and introduction to new district technologies.

Assessment strategies to be utilized include:
> Surveys and Inventories: These tools can be used to examine particular issues related to instructional technology, to monitor progress and to provide planning feedback. The format can be online, or through a random sample of users.
> Student achievement is monitored through a wide variety of data analysis. Many tools are utilized at UE including Schooltool, data dashboards, BOCES Regional Information Center, COGNOS reports, and Compass Odyssey. Ongoing training of teachers and administrators enhances the use of these tools.
> Management operations are monitored through data tools such as School Dude, Nutrikids, nVision, ClearTrack, RTI Edge and CQCS. Ongoing training of support staff in these programs provides monitoring and evaluation data for analysis.

The BOCES MITS department and the Technology Advisory Team will be responsible for the ongoing evaluation of the Union Endicott Schools Technology Plan. Unmet goals will be re-evaluated for continued implementation, adaptation or elimination.

The Acceptable Use of Technology Plan (AUP) for this district is reviewed and updated as technology needs and security require. All employees and staff read, sign and are required to agree to this policy to access the Union Endicott computer systems. Students read and sign this policy at various points during their school career. Compliance is monitored in the Information Services department through the use of monitoring software.

Acquisition and Obsolescence

THE AQUISITION OF TECHNOLOGY:
Decisions about the purchase of new technology are made in the context of the district mission and goals. We believe that hardware and software should be acquired in order to meet very specific needs based on staff requests, a review process, and the ability to fund new requests.

REPLACEMENT PLAN:
The district is committed to replacing instructional technology following a logical and on-going process. Subject to unanticipated budget problems we plan on replacing equipment based on the following schedule:

- Servers: Transitioning to virtual servers
- Workstations –3 - 4 years depending on technological demands of their use (Note: a computer used for Computer Assisted Design will need replacement faster than a computer used for email.)
- Computer Labs – On a 3-4 year schedule depending on the technological demands of their use
- Printers: As needed 3-6 years on average.
- Smartboards, document cameras, projectors, scanners, and other peripherals - On a 3-5 year schedule •
- Software – Is upgraded according to the need of the application and users

OBSOLESCENCE:
Although we recognize that instructional technology is changing very quickly we also realize that we have to be good custodians of the financial resources the public entrusts to us. Our goal is to get as much life out of every piece of equipment that we can. We do not remove a device from use while it can still perform a productive purpose. When we do remove equipment from service we do so under the guidelines established by public law.

Funding for Technology

The Union Endicott Central School District recognizes the need to provide adequate resources for the use of instructional technology within the resources available.

- Whenever possible the district attempts to work cooperatively with our Regional Information Center (BOCES). This allows us to benefit from economies of scale and to also maximize the state aid available which minimizes the impact of this service on the local share of the budget. Common funding streams include:
- Common Learning Objectives Co-Ser – Hardware and Software District-wide Technology: Hardware, Software, Supplies BOCES PDRC – Staff Development Support Staff - Whenever possible the instructional technology support staff is funded under a BOCES Cooperative Service
- Grants - We see these grants as an opportunity to fund some of our 'research and development' activities. We encourage our staff to apply for and compete in grants that will allow them to explore new and emerging technologies
- Capital Projects - The district has integrated a significant amount of its network infrastructure (i.e. fiber optic cabling, wiring to the classroom, wiring closets) into our recent capital projects.
- Funding through Smart Schools Bond Act amounts to $2.9 million for Union-Endicott. Because this money must be spent in advance of the reimbursement from the government the plan is to spend it over the next few years. First on infrastructure and then on technology spread over several years.

National Educational Technology Standards for Students, Teachers, and Administrators

Standard for Students 2007

1. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:
    a. apply existing knowledge to generate new ideas, products or processes.
    b. create original works as a means of personal or group expression
    c. use models and simulations to explore complex systems and issues
    d. identify trends and forecast possibilities

2. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance to support individual learning and contribute to the learning of others. Students:
    a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
    b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.
    c. develop cultural understanding and global awareness by engaging with learners of other cultures.
    d. contribute to project teams to produce original works or solve problems.

3. Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information. Students:
    a. plan strategies to guide inquiry.
    b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
    c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
    d. process data and report results.

4. Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:
    a. identify and define authentic problems and significant questions for investigation.
    b. plan and manage activities to develop a solution or complete a project.
    c. collect and analyze data to identify solutions and/or make informed decisions.
    d. use multiple processes and diverse perspectives to explore alternative solutions.
5. Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:
    a. advocate and practice safe, legal, and responsible use of information and technology.
    b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
    c. demonstrate personal responsibility for lifelong learning.
    d. exhibit leadership for digital citizenship.

6. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:
    a. understand and use technology systems.
    b. select and use applications effectively and productively.
    c. troubleshoot systems and applications.
    d. transfer current knowledge to learning of new technologies.

NETS for Students: National Educational Technology Standards for Students, Second Edition, C2007, ISTER (International Society for Technology in Education), www.iste.org. All rights reserved.

Standard for Teachers 2008*

1.   Facilitate and Inspire Student Learning and Creativity
Teachers use their knowledge of teaching, learning, and technology to facilitate learning experiences that advance student creativity and innovation in both faceto-face and virtual environments. Teachers:
    a. promote, support, and model creative and innovative thinking and inventiveness
    b. engage students in exploring real-world issues and solving authentic problems using digital tools and resources
    c. promote student reflection using collaborative tools to illuminate their own thinking, planning, and creative processes

d. model knowledge construction and creative thinking by engaging in faceto-face and virtual learning with students, colleagues, and others

2. Design Digital-Age Learning Experiences and Assessments Teachers plan and design authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS•S. Teachers:
   a. design or adapt relevant learning experiences to incorporate digital tools and resources that promote student learning and creativity
   b. develop technology-enriched learning environments that enable students to become active participants in setting their own educational goals, managing their own learning, and assessing their own progress
   c. customize and personalize student learning activities to address a variety of learning styles, working strategies, and abilities through the use of digital tools and resources
   d. provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching

3. Model Digital-Age Work and Learning
Teachers exhibit knowledge, skills, and work processes that are representative of an innovative professional in a global and digital society. Teachers:
   a. demonstrate fluency in the application of technology systems and the transfer of current knowledge to learning of new technologies
   b. collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation
   c. communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats
   d. model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning

4. Promote Digital Citizenship and Responsibility
Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices. Teachers:
   a. advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright and the appropriate documentation of sources
   b. address the diverse needs of all learners by using learner-centered strategies and providing access to appropriate digital tools and resources

    c. promote digital etiquette and responsible social interactions related to the use of technology and information
    d. develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools

5. Engage in Professional Growth and Leadership

Teachers continuously improve their professional practice and exhibit leadership in their classroom, school, and professional community by promoting and demonstrating the effective use of digital tools and resources. Teachers:
    a. participate in local and global learning communities to explore creative applications of technology to improve student learning
    b. exhibit leadership by embracing a vision of technology infusion, participating in shared decision-making and community building, and developing the leadership skills of others
    c. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
    d. contribute to the effectiveness, vibrancy, and self-renewal of the teaching profession and of their school and community

* Adopted from the Draft version of NETS Standards 2008 Refresh project. Final version to be unveiled in June 2008.

Standard for Administrators 2002

1. Leadership and Vision: Educational leaders inspire a shared vision for comprehensive integration of technology and foster an environment and culture conducive to the realization of that vision. Educational Leaders:
    a. facilitate the shared development by all stakeholders of a vision for technology use and widely communicate that vision.
    b. maintain an inclusive and cohesive process to develop, implement, and monitor a dynamic, long-range, and systemic technology plan to achieve the vision.
    c. foster and nurture a culture of responsible risk-taking and advocates policies promoting continuous innovation with technology.
    d. use data in making leadership decisions
    e. advocate for research-based effective practices in use of technology.

f. advocate on the state and national levels for policies, programs, and funding opportunities that support implementation of the district technology plan.

2. Learning and Teaching: Educational leaders ensure the curricular design, instructional strategies, and learning environments integrate appropriate technologies to maximize learning and teaching. Educational leaders:
   a. identify, use, evaluate, and promote appropriate technologies to enhance and support instruction and standards-based curriculum leading to high levels of student achievement.
   b. facilitate and support collaborative technology-enriched learning environments conducive to innovation for improved learning.
   c. provide for learner-centered environments that use technology to meet the individual and diverse needs of learners.
   d. facilitate the use of technologies to support and enhance instructional methods that develop higher-level thinking, decision-making, and problemsolving skills.
   e. provide for and ensure that faculty and staff take advantage of quality professional learning opportunities for improved learning and teaching with technology.

3. Productivity and Professional Practice: Educational leaders apply technology to enhance their professional practice and to increase their own productivity and that of others. Educational leaders:
   a. model the routine, intentional, and effective use of technology
   b. employ technology for communication and collaboration among colleagues, staff, parents, students and the larger community.
   c. create and participate in learning communities that stimulate, nurture, and support faculty and staff in using technology for improved productivity.
   d. engage in sustained, job-related professional learning using technology resources.
   e. maintain awareness of emerging technologies and their potential uses in education.
   f. use technology to advance organizational improvement.

4. Support, Management, and Operations: Educational leaders ensure the integration of technology to support productive systems for learning and administration. Educational Leaders:
   a. develop, implement, and monitor policies and guidelines to ensure compatibility of technologies.
   b. implement and use integrated technology-based management and operations systems.
   c. allocate financial and human resources to ensure complete and sustained implementation of the technology plan.
   d. integrate strategic plans, technology plans, and other improvement plans and policies to align efforts and leverage resources.

e. implement procedures to drive continuous improvement of technology systems and to support technology replacement cycles.

5. Assessment and Evaluation: Educational leaders use technology to plan and implement comprehensive systems of effective assessment and evaluation.
   Educational leaders:
   a. use multiple methods to assess and evaluate appropriate uses of technology resources for learning, communication, and productivity.
   b. use technology to collect and analyze data, interpret results, and communicate findings to improve instructional practice and student learning.
   c. assess staff knowledge, skills, and performance in using technology and use the results to facilitate quality professional development and to inform personnel decisions.
   d. use technology to assess, evaluate, and manage administrative and operational systems.

6. Social, Legal, and Ethical Issues: Educational leaders understand the social, legal, and ethical issues related to technology and model responsible decisionmaking related to those issues. Educational leaders:
   a. ensure equity of access to technology resources that enable and empower all learners and educators.
   b. identify, communicate, model, and enforce social, legal, and ethical practices to promote responsible use of technology.
   c. promote and enforce privacy, security, and online safety related to the use of technology.
   d. promote and enforce environmentally safe and healthy practices in the use of technology.
   e. participate in the development of policies that clearly enforce copyright law and assign ownership of intellectual property developed with district resources.