UTAH STATE BOARD OF EDUCATION

Technology Standards 2012

The Mission of Public Education: Promises to Keep

Utah's public education system keeps its constitutional promise by:

Ensuring literacy and numeracy for all Utah children.
Providing high quality instruction for all Utah children.
Establishing curriculum with high standards and relevance for all Utah children.
Requiring effective assessment to inform high quality instruction and accountability.

To achieve this mission, the Utah State Board of Education created Technology Standards 2012 to guide policymakers and educators in preparing students to be college and career ready. With these standards, each student has constant access to technology, and assistive technology as needed, as part of the general curriculum.

For teachers and students to utilize technology in an efficient and effective manner, and to fully take advantage of the benefits of using technology to improve the education of students, three components must be present:

- ***Access to technology*** *for educators, students, and parents, i.e., hardware, software, and infrastructure.*
- ***Professional learning*** *opportunities for educators, students, and parents in the use of the technology.*
- *Ongoing* ***technical support*** *to maintain the systems provided by public education.*

Technology Standards 2012 provide the standards for these three essential components. To have a positive educational impact on improvement in instruction, student time spent on-task and student achievement, all three components must be in place. One missing component stalls the process, causing a disruption in the system-wide efforts. Where consistent funding, policy, and technology leadership are in place, schools and students benefit.

By targeting the effective use of technology that may be achieved with these three components working in tandem, students have opportunities to be college and career ready as Utah achieves its "Promises to Keep."

Table of Contents

Introduction 1
Benefits....2
Standards
Access....3
Professional Learning....4
Technical Support....5
References....5

schools.utah.gov/technologystandards2012
250 East 500 South Salt Lake City, Utah 84114

UTAH STATE BOARD OF EDUCATION

Technology Standards 2012

Benefits of Effective Technology Use in the Classroom

*To support **literacy and numeracy**, educators:*

- Leverage technology to help students improve their comprehension and fluidity in reading, writing, and mathematics.
- Identify and use high-quality research and data-based strategies and practices for a technology-supported classroom environment.
- Organize classroom technology to accommodate anyplace, anytime and any-pace learning.
- Provide multiple, personalized and interactive curriculum materials for each student computing device to strengthen numeracy and literacy skills.

*To support **high quality instruction**, educators:*

- Use a variety of technology tools, systems, and processes to promote critical thinking, collaboration in the classroom, as well as accommodating diverse student needs.
- Adjust instruction continually, without being constrained by paper-based instructional materials.
- Utilize technology to bridge school-to-home connections, thus providing a continuation of learning beyond the school day.
- Develop and facilitate communication using data systems that assure the timely flow of information to support teaching and learning.

*To support **curriculum with high standards** and relevance, educators:*

- Provide and monitor effects of differentiated instructional strategies through the use of educational technologies.
- Instruct using online resources for face-to-face, blended, and strictly online classes.
- Provide digital remediation, specialized instruction, Advanced Placement instruction, and coursework not offered at local schools, etc.

*To support **effective assessment** informing high quality instruction and accountability, educators:*

- Implement assessments that are delivered, scored and reported electronically.
- Ensure assessment access mirrors the technologies used for instructional delivery and curriculum access.
- Ensure assessment delivery systems are accessible, either independently or with the use of additional software/hardware support, to meet the needs of all students.
- Use effective data-based technologies and performance management systems to support regular analysis and interpretation of data for accountability reporting and to guide continuous improvement of teaching and learning.

schools.utah.gov/technologystandards2012
250 East 500 South Salt Lake City, Utah 84114

UTAH STATE BOARD OF EDUCATION

Technology Standards 2012

Access to Technology

- **Hardware:**
  - The ratio of computer/tablet/handheld device to student/educator is 1:1 (a device for every learner) and each device is used routinely in the instructional process.
    - Each student and educator has his or her own network-enabled computing device capable of providing access to the school's technology resources.
    - Devices are age appropriate and are available to be taken home for needed instruction and student work production.
    - The hardware and software may be student, family, or school provided and meet established security policies and performance levels based on student instructional needs.
    - Computer devices include accessibility features such as screen readers, assistive communication devices, high contrast ratio, specialized keyboards, etc. as needed.

- **Classrooms presentation systems** are used routinely throughout the instructional hours.
  - Digital display devices (projector, flat panel TV, etc.) and audio amplification systems are in classrooms and meeting rooms.
  - Support devices such as webcams, document cameras, scanners, printers, etc. are available for instruction and are physically located for effective use.

- **Software (instructional materials):**
  - Considerations for acquiring new software include:
    - Is the needed software available through Open Education Resources (OER), freeware, open source or local donation?
    - Is there capacity for local/collaborative effort development?
    - Is the needed feature of the software only offered though a commercial purchase?

- **Productivity software and technology services** include collaboration systems that are accessible through the network.

- **Digital learning resources** (e.g., books, applications, simulations, web tools, etc.) are:
  - Accessible for students, as needed.
  - Age appropriate.
  - Section 508 of the Rehabilitation Act compliant.
  - Universal Design for Learning (UDL) considered.

- **Online content repositories** supported by the USOE and UEN include:
  - Connections to a clearinghouse of current research and best practices, including Universal Design for Learning (UDL) strategies utilizing state and national resources currently available (e.g., National Center on Accessible Instructional Materials, aim.cast.org, etc.).
  - E-books, applications, simulations, web tools, web links, lesson plans, multimedia objects, etc. with reviews and ratings from the Instructional Materials Commission, USOE curriculum specialists, and Utah educators.
  - Educator collaboration spaces and contribution processes.
  - Alignment to skills needed for student post graduation career and employment goals.

- **Multiple Core Curriculum pacing guides** correlated with available digital resources are shared across the education system.

- **Networks**:
  - **Local Area Networks** (LANs) have:
    - Availability for administration, teaching and learning around the clock.
    - Adequate broadband bandwidth for accessing the Internet and technology-based learning resources (i.e., students have the ability to use the Internet in the classroom and on the surrounding campus).
    - Wireless network coverage in every classroom.
  - **Wide Area Networks** (WAN) capacity between schools, LEAs and state resources is robust, redundant and managed to handle the needed bandwidth to support administrator, teacher and students.
    - The school's technology resources, when appropriate, are accessible via the Internet.

- **System interoperability:**
  - Customizable and able to incorporate national standards such as the Common Educational Data Standards (CEDS) as needed.
  - Incorporates data exchange standards to minimize redundant data, accounts, and duplicate data entry to produce reports or data extracts for reporting.
  - Employ secure and industry standard databases.
  - Provide, where possible, access to services from mobile and other computing devices.

UTAH STATE BOARD OF EDUCATION

Professional Learning

Technology Standards 2012

- **Professional learning** activities:
  - Are designed to support local school improvement initiatives, including systematic processes to periodically review and adjust the planning, budgeting, decision-making and evaluation of student achievement impacts.
  - Target Utah Core Standards, comply with the Utah Professional Learning Standards, Utah Educational Leadership Standards, Utah Effective Teaching Standards, and include relevant technology processes and systems.
  - Use technology to provide space and time for teachers to collaborate, share ideas, learn new content, and enhance their instruction.
  - Include technology coaching for educators, related service providers, and paraprofessionals.
- **Teacher preparation programs** promote technology integration for effective instruction and content mastery.
- **Administrators**:
  - Provide digital-age leadership and management for the effective use of information and technology resources by:
    - Understanding and demonstrating commitment to classroom technology use through personal use, modeling, financial support and hiring decisions.
    - Ensuring teachers are supervising student use of technology.
    - Supporting teachers in the effective use of technology by professional learning in all curriculum areas.
    - Meeting the Utah Educational Leadership Standards.
    - Ensuring each building has adequate personnel time to provide support, professional learning, and use of technology by school personnel, students, and parents.
    - Monitoring teacher qualification or endorsement as it relates to technology use and supporting teachers meeting the Utah Effective Teacher Standards.
  - Model and facilitate understanding of social, ethical and legal issues and responsibilities related to an evolving digital culture by:
    - Promoting acceptable use behaviors, including consequences for inappropriate use that do not rely on removal of technology.
    - Promoting digital citizenship, including understanding of copyright laws, harmful effects of cyber-bullying and other privacy/ethical issues.
- **Teachers**:
  - Develop and deliver relevant and engaging learning activities leveraging digital devices, resources, and communication networks.
  - Provide timely, accessible and age-appropriate instructional materials online for all students.
  - Input and access electronic data to inform the instructional process.
  - Instruct students in appropriate-use guidelines for online content, software, etc. and supervise to ensure compliance.
  - Implement appropriate interventions to remediate students' lack of technology skills as defined by the State Core Curriculum.
  - Evaluate the effectiveness of selected instructional materials and technology and make adaptations as needed to meet needs of all students, including those with disabilities and special needs.
  - Continue to be creative and innovative with current and emerging technology tools.
- **Students**:
  - Demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.
  - Use digital media and tools to communicate and work collaboratively, including at a distance, to support individual learning and to contribute to the learning of others.
  - Apply digital tools to gather, evaluate, and use information.
  - Use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
  - Understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
  - Demonstrate a sound understanding of technology concepts, systems, and operations.
  - Demonstrate technology proficiency and plan for future technology use after high school graduation.
- **Parents** use technology to:
  - Access current LEA, school, class information and course curriculum and resources over the network.
  - Support their students with learning, data review and communication with school personnel.

UTAH STATE BOARD OF EDUCATION

Technology Standards 2012

Technical Support

- School/LEA **policies, procedures and service level expectations** are established for:
  - All technology acquisitions.
  - Downtime and repair standards.
  - Periodic maintenance and updates of hardware, software and network systems.
  - Qualified support personnel regularly maintaining systems and devices.
  - Hardware, technical resources and software replacement and/or upgrades via planned schedules.
  - Robust access to classroom curriculum resources.
- Each LEA/school **manages its networks** to assure adequate bandwidth and network connections for timely and reliable student and educator access.
- School **networks are filtered** to restrict exposure to inappropriate resources and are Children Internet Protection Act (CIPA) compliant while also providing access to useful instructional tools and resources.
- **Technology use is planned** and executed to meet LEA/school policy and strategic learning objectives.
- The USOE, with support from UEN and regional service centers, collaborates with LEAs to achieve **economies of scale and equitable access**.
- Each LEA/school **collects and manages data** to:
  - Support data-driven decisions at the classroom, school, LEA, and state levels.
  - Successfully manage daily instructional and other school programs and services.
  - Comply with local, state and federal reporting mandates (e.g., FERPA, GRAMA, etc.).

References

National Education Technology Plan 2010
www.ed.gov/technology/netp-2010

ISTE NETS Standards
www.iste.org/standards.aspx

Utah Effective Teacher Standards and Utah Educational Leadership Standards
www.uen.org/k12educator/uets/
www.uen.org/k12educator/uels/

Generation M²: Media in the lives of 8- to 18-year-olds
www.kff.org/entmedia/upload/8010.pdf

The NMC Horizon Report: 2011 K-12 Edition
www.cosn.org/horizon

SETDA: Class of 2020 Action Plan for Education
www.setda.org/web/guest/2020

Pew Internet & American Life Project
pewinternet.org/

Project Tomorrow - Speak Up Reports
www.tomorrow.org/speakup/speakup_reports.html

Where funding, policy, and technology leadership are in place, schools and students benefit through access, professional learning and technical support.

schools.utah.gov/technologystandards2012
250 East 500 South Salt Lake City, Utah 84114