

AGENCY OF EDUCATION

Barre, Vermont

TEAM: Transformation and Innovation

ITEM: Will the State Board of Education:

1. Ask the Agency of Education to 1) review Student and Teacher Standards for Education Technology, including the ISTE standards; 2) invite public comment on preferred standards as frameworks for VT schools; and 3) make a recommendation to the State Board of Education with respect to adoption of Student and Teacher Standards for Education Technology?

SECRETARY'S RECOMMENDED ACTION:

That the State Board of Education ask the Agency of Education to review, invite public input on and recommend Student and Teacher standards for Education Technology.

STATUTORY AUTHORITY:

16 V.S.A. § 165; Education quality standards.

(3) The school substantially meets standards adopted by rule of the State Board regarding conditions, practices and resources of schools. The standards shall address those aspects of the following that are most closely associated with improving student performance:

- (B) instructional practices and curriculum leadership, content, and coordination;
- (C) educational materials and school facilities;
- (D) access to current technology.

State Board Series 2000, Education Quality Standards.

The purpose of these rules is to ensure that all students in Vermont public schools are afforded educational opportunities that are equal in quality, and enable them to achieve or exceed the standards approved by the State Board of Education

BACKGROUND INFORMATION:

The State Board of Education (SBE) adopted the International Society for Technology in Education's (ISTE) standards in 2009. These standards are now out of date due to innovations in technology and current practice regarding classroom and school level technology use. In addition, Vermont's state technology standards require review in order to ensure alignment with Education Quality Standards (EQS).

POLICY IMPLICATIONS:

The State Board of Education's Education Quality Standards (2114, (6)) define education technology as "instruction and/or preparation in the appropriate use of current technology to provide students with the knowledge and skills needed to communicate solve problems, and to access, manage, integrate, evaluate and create information."

The rules imply a set of professional skills necessary to support integration of technology into instruction. The EQS state that:

"Technology Integration" means the infusion of technology into the curriculum as a tool to enhance learning in a content area or multidisciplinary setting, enabling students to select technology tools to help them obtain information in a timely manner, analyze and synthesize the information, and present it professionally.

In addition, Section 2120.5 of the EQS states, with respect to curriculum content, that students must develop and demonstrate proficiency with transferable skills, which include the use of technology.

The State Board of Education adopted the International Society for Technology in Education's (ISTE) 2008, 2009, and 2010 standards in 2009. These standards are now out of date due to innovations in technology and technology use. In addition, the Agency needs to review these standards and seek stakeholder input with respect to the relationship between these standards and the new Education Quality Standards.

EDUCATION IMPLICATIONS:

Updated standards would provide schools with a framework against which to measure their use of education technology in classrooms. The ISTE standards have been recognized and respected over the course of the last 20 years, the first standards having come out in 1997. However, the new version requires review and, if appropriate, statewide adoption to bring Vermont's technology standards in line with current best practice.

FISCAL IMPLICATIONS:

None.

STAFF AVAILABLE:

Peter Drescher, Education Technology Coordinator

Heather Bouchey, Deputy Secretary

Update of Educational Technology Standards

Peter Drescher

Education Technology Coordinator

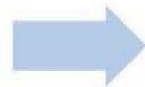
6/19/17

Process for SBE Standards Change and Approval



Secure SBE Approval to Open Standards

- Brief rationale to SBE (1-2 pps., 10 mins presentation)
- Why do we need to open standards and/or adopt new ones?
- How do you propose to seek public input on the new standards?
- Include projected timeline.



Seek Public Input

- Implement your proposed activities for receiving public input
 - e.g., brief survey, focus groups, public commentary
- Record public feedback.
- Integrate feedback into proposed standards and modify standards as needed.



Submit Proposal to Change or Adopt Standards

- Write cogent, well-articulated rationale for changing standards.
- What are the proposed standards? List or present in a clear visual format. How do they relate to, add to, move from, etc. old standards?
- Describe the public input process and how it informed the proposed standards.
- Be prepared to answer questions for SBE members.
- 20 minutes for presentation, 10 minutes for questions
- Await approval from SBE.

Request Approval for Steps 1 and 2

- Opening educational technology standards for review
- In 2009, SBE adopted the International Society for Technology in Education (ISTE) standards on behalf of all Vermont schools.

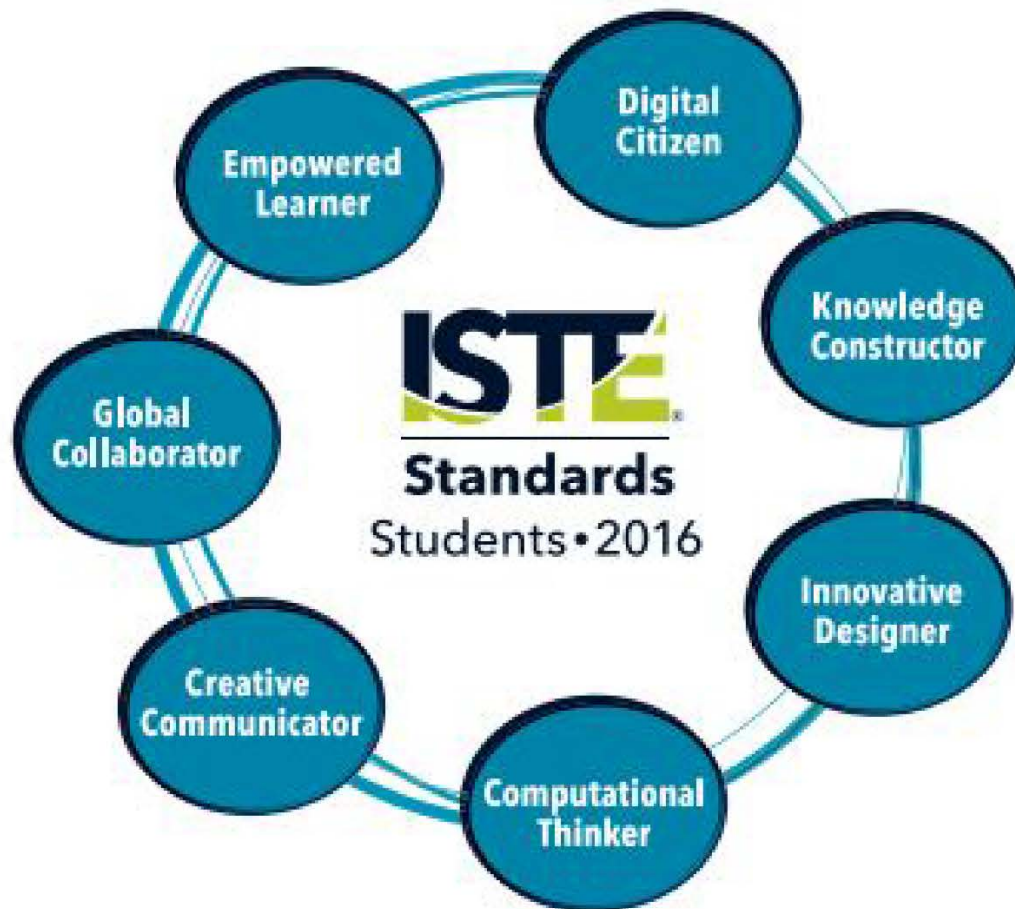
Why now?

- Need to ensure Vermont's education technology standards align with EQS.
- Standards now in effect are outdated
 - Innovations in technology
 - Current best practice in pedagogy and practice

Why considering ISTE?

- Both student and teacher standards available (administrator standards slated for 2018)
- Strength of organization
- Process for standard development
- VT/SETDA involvement in standards development
- Long standing reputation with VT schools

(refer to handouts)



Plan to Seek Input from Field – Step 2

- Annual Technology Survey
 - Question about educational technology standards
- Follow up with in-person conversation, focus groups as relevant, etc.
- Record data and themes (pros and cons)

Proposed Timeline

- New Teacher standards released on June 25, 2017
- Annual Technology Survey deployed (July)
- Additional feedback from field (August)
- Return to SBE with formal proposal (September)

Questions?

2016

ISTE STANDARDS 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. 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.
- build networks and customize their learning environments in ways that support the learning process.
- use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.
- 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

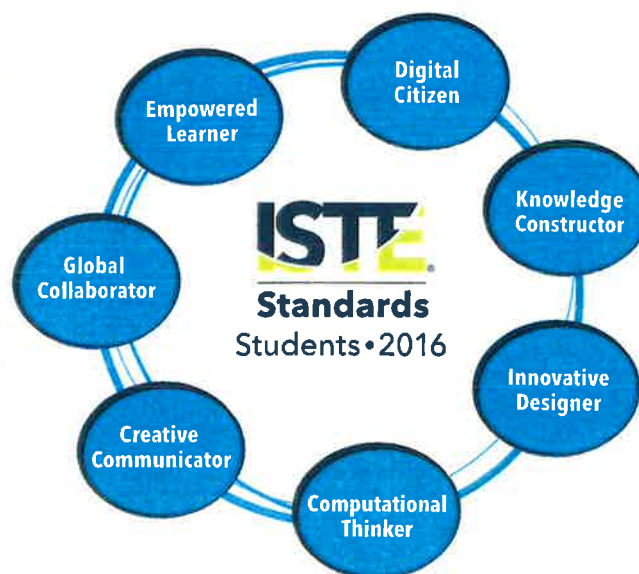
Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. Students:

- cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.
- engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
- demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.
- 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. Students:

- plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.
- evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.
- curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.
- 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. Students:

- a. know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
- b. select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
- c. develop, test and refine prototypes as part of a cyclical design process.
- d. 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. Students:

- a. formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
- b. 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. break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.
- d. 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. Students:

- a. choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
- b. create original works or responsibly repurpose or remix digital resources into new creations.
- c. communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.
- d. 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. Students:

- a. 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. use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.
- c. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
- d. explore local and global issues and use collaborative technologies to work with others to investigate solutions.

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ISTE STANDARDS FOR TEACHERS

1. Facilitate and Inspire Student Learning and Creativity

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity and innovation in both face-to-face and virtual environments.

- Promote, support, and model creative and innovative thinking and inventiveness.
- Engage students in exploring real-world issues and solving authentic problems using digital tools and resources.
- Promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning and creative processes.
- Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments.

2. Design and Develop Digital Age Learning Experiences and Assessments

Teachers design, develop and evaluate 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 ISTE Standards•S.

- Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity.
- Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning and assessing their own progress.
- Customize and personalize learning activities to address students' diverse learning styles, working strategies and abilities using digital tools and resources.
- 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 representative of an innovative professional in a global and digital society.

- Demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations.
- Collaborate with students, peers, parents and community members using digital tools and resources to support student success and innovation.
- 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 and Model 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.

- a. Advocate, model, and teach safe, legal and ethical use of digital information and technology, including respect for copyright, intellectual property and the appropriate documentation of sources.
- b. Address the diverse needs of all learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources.
- c. Promote and model 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, model lifelong learning and exhibit leadership in their school and professional communities by promoting and demonstrating the effective use of digital tools and resources.

- a. Participate in local and global learning communities to explore creative applications of technology to improve student learning.
- b. Exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology 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, vitality and self-renewal of the teaching profession and of their school and community.

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ISTE STANDARDS 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.

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

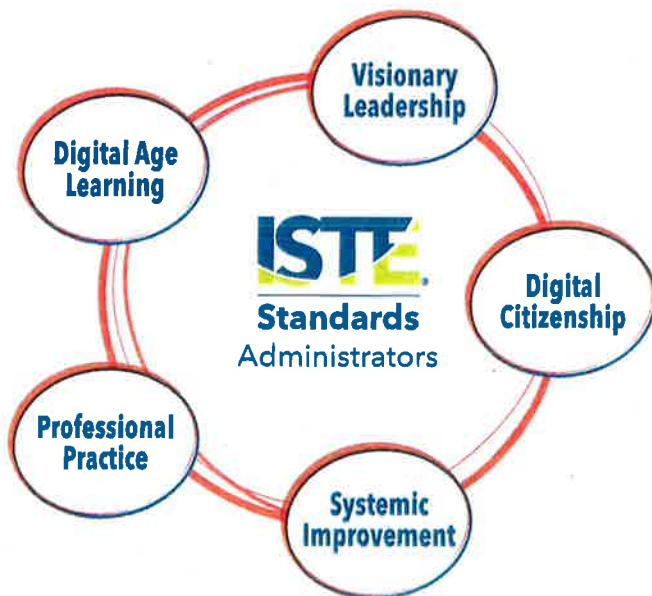
Administrators create, promote and sustain a dynamic, digital age learning culture that provides a rigorous, relevant and engaging education for all students.

- Ensure instructional innovation focused on continuous improvement of digital age learning.
- Model and promote the frequent and effective use of technology for learning.
- Provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners.
- Ensure effective practice in the study of technology and its infusion across the curriculum.
- 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.

- Allocate time, resources and access to ensure ongoing professional growth in technology fluency and integration.
- Facilitate and participate in learning communities that stimulate, nurture and support administrators, faculty and staff in the study and use of technology.
- Promote and model effective communication and collaboration among stakeholders using digital age tools.
- 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.

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