



## Technology Leadership Standards

### **TL-I Technology Operations and Concepts**

Educational technology leaders demonstrate an advanced understanding of technology operations and concepts. Educational technology leaders:

- A. Demonstrate knowledge, skills, and understanding of concepts related to technology (as described in the ISTE NETS for Teachers 2000). Candidates:
  - 1. identify and evaluate components needed for the continual growth of knowledge, skills, and understanding of concepts related to technology.
  - 2. offer a variety of professional development opportunities that facilitate the ongoing development of knowledge, skills, and understanding of concepts related to technology.
- B. Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies. Candidates:
  - 1. offer a variety of professional development opportunities that facilitate the continued growth and development of the understanding of technology operations and concepts.

### **TL-II Planning and Designing Learning Environments and Experiences**

Educational technology leaders plan, design, and model effective learning environments and multiple experiences supported by technology. Educational technology leaders:

- A. Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners. Candidates:
  - 1. research and disseminate project-based instructional units modeling appropriate use of technology to support learning.
  - 2. identify and evaluate methods and strategies for teaching computer/technology concepts and skills within the context of classroom learning and coordinate dissemination of best practices at the district/state/regional level.
  - 3. stay abreast of current technology resources and strategies to support the diverse needs of learners including adaptive and assistive technologies and disseminate information to teachers.
- B. Apply current research on teaching and learning with technology when planning learning environments and experiences. Candidates:
  - 1. locate and evaluate current research on teaching and learning with technology when planning learning environments and experiences.
- C. Identify and locate technology resources and evaluate them for accuracy and suitability. Candidates:
  - 1. identify technology resources and evaluate them for accuracy and suitability based on content standards.
  - 2. provide ongoing appropriate professional development to disseminate the use of technology resources that reflect content standards.
- D. Plan for the management of technology resources within the context of learning activities. Candidates:
  - 1. identify and evaluate options for management of technology resources within the context of learning activities.
- E. Plan strategies to manage student learning in a technology-enhanced environment. Candidates:
  - 1. continually evaluate a variety of strategies to manage student learning in a technology-enhanced environment and disseminate through professional development activities.
- F. Identify and apply instructional design principles associated with the development of technology resources. Candidates:
  - 1. identify and evaluate instructional design principles associated with the development of technology resources.

### **TL-III Teaching, Learning, and the Curriculum**

Educational technology leaders model, design, and disseminate plans that include methods and strategies for applying technology to maximize student learning. Educational technology leaders:

- A. Facilitate technology-enhanced experiences that address content standards and student technology standards. Candidates:
  - 1. design methods and strategies for teaching concepts and skills that support integration of technology productivity tools (refer to the NETS for Students).
  - 2. design methods for teaching concepts and skills that support integration of communication tools (refer to NETS for Students).
  - 3. design methods and strategies for teaching concepts and skills that support integration of research tools (refer to NETS for Students).
  - 4. design methods and model strategies for teaching concepts and skills that support integration of problem-solving/decision-making tools (refer to NETS for Students).
  - 5. design methods and model strategies for teaching concepts and skills that support use of media-based tools such as television, audio, print media, and graphics.
  - 6. evaluate methods and strategies for teaching concepts and skills that support use of distance learning systems appropriate in a school environment.
  - 7. design methods and model strategies for teaching concepts and skills that support the use of Web-based and non Web-based authoring tools in a school environment.
- B. Use technology to support learner-centered strategies that address the diverse needs of students. Candidates:
  - 1. design methods and strategies for integrating technology resources that support the needs of diverse learners, including adaptive and assistive technology.
- C. Apply technology to demonstrate students' higher-order skills and creativity. Candidates:
  - 1. design methods and strategies for teaching hypermedia development, scripting, and/or computer programming, in a problem-solving context in the school environment.
- D. Manage student learning activities in a technology-enhanced environment. Candidates:
  - 1. design methods and model classroom management strategies for teaching technology concepts and skills used in PK-12 environments.
- E. Use current research and district/state/national content and technology standards to build lessons and units of instruction. Candidates:
  - 1. disseminate curricular methods and strategies that are aligned with district/regional/state/national content and technology standards.
  - 2. investigate major research findings and trends relative to the use of technology in education to support integration throughout the curriculum.

### **TL-IV Assessment and Evaluation**

Educational technology leaders communicate research on the use of technology to implement effective assessment and evaluation strategies. Educational technology leaders:

- A. Apply technology in assessing student learning of subject matter using a variety of assessment techniques. Candidates:
  - 1. facilitate the development of a variety of techniques to use technology to assess student learning of subject matter.
  - 2. provide technology resources for assessment and evaluation of artifacts and data.
- B. Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning. Candidates:
  - 1. identify and procure technology resources to aid in analysis and interpretation of data.
- C. Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity. Candidates:
  - 1. design strategies and methods for evaluating the effectiveness of technology resources for learning, communication, and productivity.
  - 2. conduct a research project that includes evaluating the use of a specific technology in P-12 environments.

## **TL-V Productivity and Professional Practice**

Educational technology leaders design, develop, evaluate and model products created using technology resources to improve and enhance their productivity and professional practice. Educational technology leaders:

- A. Use technology resources to engage in ongoing professional development and lifelong learning.  
Candidates:
  - 1. design, prepare, and conduct professional development activities to present at the school/district level and at professional technology conferences to support ongoing professional growth related to technology.
  - 2. plan and implement policies that support district-wide professional growth opportunities for staff, faculty, and administrators.
- B. Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning. Candidates:
  - 1. based on evaluations make recommendations for changes in professional practices regarding the use of technology in support of student learning.
- C. Apply technology to increase productivity. Candidates:
  - 1. model the integration of data from multiple software applications using advanced features of applications such as word processing, database, spreadsheet, communication, and other tools into a product.
  - 2. create multimedia presentations integrated with multiple types of data using advanced features of a presentation tool and model them to district staff using computer projection systems.
  - 3. document and assess field-based experiences and observations using specific-purpose electronic devices.
  - 4. use distance learning delivery systems to conduct and provide professional development opportunities for students, teachers, administrators, and staff.
  - 5. apply instructional design principles to develop and analyze substantive interactive multimedia computer-based instructional products.
  - 6. design and practice strategies for testing functions and evaluating technology use effectiveness of instructional products that were developed using multiple technology tools.
  - 7. analyze examples of emerging programming, authoring or problem-solving environments that support personal and professional development, and make recommendations for integration at school/district level.
  - 8. analyze and modify the features and preferences of major operating systems and/or productivity tool programs when developing products to solve problems.
- D. Use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning. Candidates:
  - 1. model and implement the use of telecommunications tools and resources to foster and support information sharing, remote information access, and communication between students, school staff, parents, and local community.
  - 2. organize, coordinate, and participate in an online learning community related to the use of technology to support learning.
  - 3. organize and coordinate online collaborative curricular projects with corresponding team activities/responsibilities to build bodies of knowledge around specific topics.
  - 4. design, modify, maintain, and facilitate the development of Web pages and sites that support communication and information access between the entire school district and local/state/national/international communities.

## **TL-VI Social, Ethical, Legal, and Human Issues**

Educational technology leaders understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and develop programs facilitating application of that understanding in practice throughout their district/region/state. Educational technology leaders:

- A. Model and teach legal and ethical practice related to technology use. Candidates:
  - 1. establish and communicate clear rules, policies, and procedures to support legal and ethical use of technologies at the district/regional/state levels.
  - 2. implement a plan for documenting adherence to copyright laws.
- B. Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities. Candidates:
  - 1. communicate research on best practices related to applying appropriate technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
  - 2. develop policies and provide professional development related to acquisition and use of appropriate adaptive/assistive hardware and software for students and teachers with special needs.
- C. Identify and use technology resources that affirm diversity. Candidates:
  - 1. communicate research on best practices related to applying appropriate technology resources to affirm diversity and address cultural and language differences.
- D. Promote safe and healthy use of technology resources. Candidates:
  - 1. communicate research and establish policies to promote safe and healthy use of technology.
- E. Facilitate equitable access to technology resources for all students. Candidates:
  - 1. use research findings in establishing policy and implementation strategies to promote equitable access to technology resources for students and teachers.

#### **TL-VII Procedures, Policies, Planning, and Budgeting for Technology Environments**

Educational technology leaders coordinate development and direct implementation of technology infrastructure procedures, policies, plans, and budgets for PK-12 schools. Educational technology leaders:

- A. Use the school technology facilities and resources to implement classroom instruction. Candidates:
  - 1. develop plans to configure software/computer/technology systems and related peripherals in laboratory, classroom cluster, and other appropriate instructional arrangements.
  - 2. install local mass storage devices and media to store and retrieve information and resources.
  - 3. prioritize issues related to selecting, installing, and maintaining wide area networks (WAN) for school districts, and facilitate integration of technology infrastructure with the WAN.
  - 4. manage software used in classroom and administrative settings, including productivity tools, information access/telecommunication tools, multimedia/hypermedia tools, school management tools, evaluation/portfolio tools, and computer-based instruction.
  - 5. evaluate methods of installation, maintenance, inventory, and management of software libraries.
  - 6. develop and disseminate strategies for troubleshooting and maintaining various hardware/software configurations found in school settings.
  - 7. select network software packages for operating a computer network system and/or local area network (LAN).
  - 8. analyze needs for technology support personnel to manage school/district technology resources and maximize use by administrators, teachers, and students to improve student learning.
- B. Follow procedures and guidelines used in planning and purchasing technology resources. Candidates:
  - 1. investigate purchasing strategies and procedures for acquiring administrative and instructional software for educational settings.
  - 2. develop and utilize guidelines for budget planning and management procedures related to educational computing and technology facilities and resources.
  - 3. develop and disseminate a system for analyzing and implementing procedures related to troubleshooting and preventative maintenance on technology infrastructure.
  - 4. maintain and disseminate current information involving facilities planning issues and computer-related technologies.
  - 5. design and develop policies and procedures concerning staging, scheduling, and security for managing hardware, software, and related technologies in a variety of instructional and administrative school settings.
  - 6. research and recommend systems and processes for implementation of distance learning facilities and infrastructure.

7. differentiate among specifications for purchasing technology systems in school settings.
- C. Participate in professional development opportunities related to management of school facilities, technology resources, and purchases. Candidates:
  1. implement technology professional development at the school/district level utilizing adult learning theory.

### **TL-VIII Leadership and Vision**

Educational technology leaders will facilitate development of a shared vision for comprehensive integration of technology and foster an environment and culture conducive to the realization of the vision. Educational technology leaders:

- A. Identify and apply educational and technology-related research, the psychology of learning, and instructional design principles in guiding the use of computers and technology in education. Candidates:
  1. communicate and apply principles and practices of educational research in educational technology.
- B. Apply strategies for and knowledge of issues related to managing the change process in schools. Candidates:
  1. describe social/historical foundations of education and how they relate to use of technology in schools.
- C. Apply effective group process skills. Candidates:
  1. discuss issues related to building collaborations, alliances, and partnerships involving educational technology initiatives.
- D. Lead in the development and evaluation of district technology planning and implementation. Candidates:
  1. design and lead in the implementation of effective group process related to technology leadership or planning.
  2. use evaluation findings to recommend modifications in technology implementations.
  3. use national, state, and local standards to develop curriculum plans for integrating technology in the school environment.
  4. develop curriculum activities or performances that meet national, state, and local technology standards.
  5. compare and evaluate district-level technology plans.
  6. use strategic planning principles to lead and assist in the acquisition, implementation, and maintenance of technology resources.
  7. plan, develop, and implement strategies and procedures for resource acquisition and management of technology-based systems, including hardware and software.
- E. Engage in supervised field-based experiences with accomplished technology facilitators and/or directors. Candidates:
  1. participate in a significant field-based activity involving experiences in instructional program development, professional development, facility and resource management, WAN/LAN/wireless systems, or managing changes related to technology use in school-based settings.