

INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION (ISTE)
Educational Computing and Technology Standards for
Technology Facilitation Initial Endorsement

INTRODUCTION

Technology Facilitation (TF)-- Initial Endorsement Standards

Educational Computing and Technology Facilitation (TF) endorsement programs meeting ISTE standards will prepare candidates to serve as building/campus-level technology facilitators. Candidates completing this program will exhibit knowledge, skills, and dispositions equipping them to teach technology applications; demonstrate effective use of technology to support student learning of content; and provide professional development, mentoring, and basic technical assistance for other teachers who require support in their efforts to apply technology to support student learning.

The International Society for Technology in Education recognizes that educational computing and technology foundations are essential for all teachers. ISTE also acknowledges educational computing and technology specialty areas beyond these foundations and has established program standards for initial and advanced programs. These program standards will assist teacher education units, and professional organizations and agencies in understanding and evaluating the educational preparation needed for specialization within the field.

Who should complete the *ISTE Educational Computing and Technology Facilitation* program standards?

This document contains program standards for the Educational Computing and Technology Facilitation (TF) initial endorsement designed to prepare candidates to serve as building/campus-level technology facilitators. Institutions that offer this program should respond to the corresponding program standards.

Technology Facilitation Standard I. (TF-I)

Technology Operations and Concepts. Educational technology facilitators demonstrate an in-depth understanding of technology operations and concepts. Educational technology facilitators:

TF-I.A. Demonstrate knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Educational Technology Standards for Teachers). Candidates:

1. Assist teachers in the ongoing development of knowledge, skills, and understanding of technology systems, resources, and services that are aligned with district and state technology plans.
2. Provide assistance to teachers in identifying technology systems, resources, and services to meet specific learning needs.

TF-I.B. Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies. Candidates:

1. Model appropriate strategies essential to continued growth and development of the understanding of technology operations and concepts.

Technology Facilitation Standard II. (TF-II)

Planning and Designing Learning Environments and Experiences. Educational technology facilitators plan, design, and model effective learning environments and multiple experiences supported by technology. Educational technology facilitators:

TF-II.A. Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners. Candidates:

1. Provide resources and feedback to teachers as they create developmentally appropriate curriculum units that use technology.
2. Consult with teachers as they design methods and strategies for teaching computer/technology concepts and skills within the context of classroom learning.
3. Assist teachers as they use technology resources and strategies to support the diverse needs of learners including adaptive and assistive technologies.

INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION (ISTE)
Educational Computing and Technology Standards for
Technology Facilitation Initial Endorsement

TF-II.B. Apply current research on teaching and learning with technology when planning learning environments and experiences. Candidates:

1. Assist teachers as they apply current research on teaching and learning with technology when planning learning environments and experiences.

TF-II.C. Identify and locate technology resources and evaluate them for accuracy and suitability. Candidates:

1. Assist teachers as they identify and locate technology resources and evaluate them for accuracy and suitability based on district and state standards.
2. Model technology integration using resources that reflect content standards.

TF-II.D. Plan for the management of technology resources within the context of learning activities. Candidates:

1. Provide teachers with options for the management of technology resources within the context of learning activities.

TF-II.E. Plan strategies to manage student learning in a technology-enhanced environment. Candidates:

1. Provide teachers with a variety of strategies to use to manage student learning in a technology-enhanced environment and support them as they implement the strategies.

TF-II.F. Identify and apply instructional design principles associated with the development of technology resources. Candidates:

1. Assist teachers as they identify and apply instructional design principles associated with the development of technology resources.

Technology Facilitation Standard III. (TF-III)

Teaching, Learning, and the Curriculum. Educational technology facilitators apply and implement curriculum plans that include methods and strategies for utilizing technology to maximize student learning. Educational technology facilitators:

TF-III.A. Facilitate technology-enhanced experiences that address content standards and student technology standards. Candidates:

1. Use methods and strategies for teaching concepts and skills that support integration of technology productivity tools (refer to NETS for Students).
2. Use and apply major research findings and trends related to the use of technology in education to support integration throughout the curriculum.
3. Use methods and strategies for teaching concepts and skills that support integration of research tools (refer to NETS for Students).
4. Use methods and strategies for teaching concepts and skills that support integration of problem solving/ decision-making tools (refer to NETS for Students).
5. Use methods and strategies for teaching concepts and skills that support use of media-based tools such as television, audio, print media, and graphics.
6. Use and describe methods and strategies for teaching concepts and skills that support use of distance learning systems appropriate in a school environment.
7. Use methods for teaching concepts and skills that support use of web-based and non web-based authoring tools in a school environment.

TF-III.B. Use technology to support learner-centered strategies that address the diverse needs of students. Candidates:

1. Use methods and strategies for integrating technology resources that support the needs of diverse learners including adaptive and assistive technology.

INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION (ISTE)
Educational Computing and Technology Standards for
Technology Facilitation Initial Endorsement

TF-III.C. Apply technology to demonstrate students' higher order skills and creativity. Candidates:

1. Use methods and facilitate strategies for teaching problem solving principles and skills using technology resources.

TF-III.D. Manage student learning activities in a technology-enhanced environment. Candidates:

1. Use methods and classroom management strategies for teaching technology concepts and skills in individual, small group, classroom, and/or lab settings.

TF-III.E. Use current research and district/region/state/national content and technology standards to build lessons and units of instruction. Candidates:

1. Describe and identify curricular methods and strategies that are aligned with district/region/state/national content and technology standards.
2. Use major research findings and trends related to the use of technology in education to support integration throughout the curriculum.

Technology Facilitation Standard IV. (TF-IV)

Assessment and Evaluation. Educational technology facilitators apply technology to facilitate a variety of effective assessment and evaluation strategies. Educational technology facilitators:

TF-IV.A. Apply technology in assessing student learning of subject matter using a variety of assessment techniques. Candidates:

1. Model the use of technology tools to assess student learning of subject matter using a variety of assessment techniques.
2. Assist teachers in using technology to improve learning and instruction through the evaluation and assessment of artifacts and data.

TF-IV.B. Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning. Candidates:

1. Guide teachers as they use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
- 2.

TF-IV.C. Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity. Candidates:

1. Assist teachers in using recommended evaluation strategies for improving students' use of technology resources for learning, communication, and productivity.
2. Examine and apply the results of a research project that includes evaluating the use of a specific technology in a P-12 environment.

Technology Facilitation Standard V. (TF-V)

Productivity and Professional Practice. Educational technology facilitators apply technology to enhance and improve personal productivity and professional practice. Educational technology facilitators:

TF-V.A. Use technology resources to engage in ongoing professional development and lifelong learning. Candidates:

1. Identify resources and participate in professional development activities and professional technology organizations to support ongoing professional growth related to technology.
2. Disseminate information on district-wide policies for the professional growth opportunities for staff, faculty, and administrators.

TF-V.B. Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning. Candidates:

1. Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.

INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION (ISTE)
Educational Computing and Technology Standards for
Technology Facilitation Initial Endorsement

TF-V.C. Apply technology to increase productivity. Candidates:

1. Model advanced features of word processing, desktop publishing, graphics programs, and utilities to develop professional products.
2. Assist others in locating, selecting, capturing, and integrating video and digital images in varying formats for use in presentations, publications and/or other products.
3. Demonstrate the use of specific-purpose electronic devices (such as graphing calculators, languages translators, scientific probeware, or electronic thesaurus) in content areas.
4. Use a variety of distance learning systems and use at least one to support personal/ professional development.
5. Use instructional design principles to develop hypermedia and multimedia products to support personal and professional development.
6. Select appropriate tools for communicating concepts, conducting research, and solving problems for an intended audience and purpose.
7. Use examples of emerging programming, authoring or problem solving environments that support personal/professional development.
8. Set and manipulate preferences, defaults, and other selectable features of operating systems and productivity tool programs commonly found in P-12 schools.

TF-V.D. Use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning. Candidates:

1. Model the use of telecommunications tools and resources for information sharing, remote information access, and multimedia/hypermedia publishing in order to nurture student learning.
2. Communicate with colleagues and discuss current research to support instruction, using applications including electronic mail, online conferencing, and web browsers.
3. Participate in online collaborative curricular projects and team activities to build bodies of knowledge around specific topics.
4. Design, develop, and maintain Web pages and sites that support communication between the school and community.

Technology Facilitation Standard VI. (TF-VI)

Social, Ethical, Legal, and Human Issues. Educational technology facilitators understand the social, ethical, legal, and human issues surrounding the use of technology in P-12 schools and assist teachers in applying that understanding in their practice. Educational technology facilitators:

TF-VI.A. Model and teach legal and ethical practice related to technology use. Candidates:

1. Develop strategies and provide professional development at the school/classroom level for teaching social, ethical, and legal issues and responsible use of technology.
2. Assist others in summarizing copyright laws related to use of images, music, video, and other digital resources in varying formats.

TF-VI.B. Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities. Candidates:

1. Assist teachers in selecting and applying appropriate technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
2. Identify, classify, and recommend adaptive /assistive hardware and software for students and teachers with special needs and assist in procurement and implementation.

TF-VI.C. Identify and use technology resources that affirm diversity. Candidates:

1. Assist teachers in selecting and applying appropriate technology resources to affirm diversity and address cultural and language differences.

TF-VI.D. Promote safe and healthy use of technology resources. Candidates:

INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION (ISTE)
Educational Computing and Technology Standards for
Technology Facilitation Initial Endorsement

1. Assist teachers in selecting and applying appropriate technology resources to promote safe and healthy use of technology.

TF-VI.E. Facilitate equitable access to technology resources for all students. Candidates:

1. Recommend policies and implement school/classroom strategies for achieving equitable access to technology resources for all students and teachers.

Technology Facilitation Standard VII. (TF-VII)

Procedures, Policies, Planning, and Budgeting for Technology Environments. Educational technology facilitators promote the development and implementation of technology infrastructure, procedures, policies, plans, and budgets for P-12 schools. Educational technology facilitators:

TF-VII.A. Use the school technology facilities and resources to implement classroom instruction.

Candidates:

1. Use plans to configure software/computer/technology systems and related peripherals in laboratory, classroom cluster, and other appropriate instructional arrangements.
2. Use local mass storage devices and media to store and retrieve information and resources.
3. Discuss issues related to selecting, installing, and maintaining wide area networks (WAN) for school districts.
4. Model integration of 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. Utilize methods of installation, maintenance, inventory, and management of software libraries.
6. Use and apply strategies for troubleshooting and maintaining various hardware/software configurations found in school settings.
7. Use network software packages used to operate a computer network system
8. Work with technology support personnel to maximize the use of technology resources by administrators, teachers, and students to improve student learning.

TF-VII.B. Follow procedures and guidelines used in planning and purchasing technology resources. Candidates:

1. Identify instructional software to support and enhance the school curriculum and develop recommendations for purchase.
2. Discuss and apply guidelines for budget planning and management procedures related to educational computing and technology facilities and resources.
3. Discuss and apply procedures related to troubleshooting and preventive maintenance on technology infrastructure.
4. Apply current information involving facilities planning issues and computer related technologies.
5. Suggest policies and procedures concerning staging, scheduling, and security for managing computers/technology in a variety of school/laboratory/classroom settings.
6. Use distance and online learning facilities.
7. Describe and identify recommended specifications for purchasing technology systems in school settings.

TF-VII.C. Participate in professional development opportunities related to management of school facilities, technology resources, and purchases. Candidates:

1. Support technology professional development at the building/school level utilizing adult learning theory.

INTERNATIONAL SOCIETY FOR TECHNOLOGY IN EDUCATION (ISTE)
Educational Computing and Technology Standards for
Technology Facilitation Initial Endorsement

Technology Facilitation Standard VIII. (TF-VIII)

Leadership and Vision. Educational technology facilitators will contribute to the shared vision for campus integration of technology and foster an environment and culture conducive to the realization of the vision. Educational technology facilitators:

TF-VIII.A. Use the school technology facilities and resources to implement classroom instruction.

Candidates:

1. Discuss and evaluate current research in educational technology.

TF-VIII.B. Apply strategies for and knowledge of issues related to managing the change process in schools. Candidates:

1. Discuss the history of technology use in schools.

TF-VIII.C. Apply effective group process skills. Candidates:

1. Discuss the rationale for forming school partnerships to support technology integration and examine an existing partnership within a school setting.

TF-VIII.D. Lead in the development and evaluation of district technology planning and implementation. Candidates:

1. Participate in cooperative group processes and identify the processes that were effective.
2. Conduct an evaluation of a school technology environment.
3. Identify and discuss national, state, and local standards for integrating technology in the school environment.
4. Describe curriculum activities or performances that meet national, state, and local technology standards.
5. Discuss issues related to developing a school technology plan.
6. Discuss the elements of and strategies for developing a technology strategic plan.
7. Examine issues related to hardware and software acquisition and management.

TF-VIII.E. Engage in supervised field-based experiences with accomplished technology facilitators and/or directors. Candidates:

1. Examine components needed for effective field-based experiences in instructional program development, professional development, facility and resource management, WAN/LAN/wireless systems, or managing change related to technology use in school based settings.

SUPPORTING EXPLANATION - Technology Facilitation (TF) Standards

Standards for the Technology Facilitation Program are designed to communicate expectations for the performance of candidates who will serve as building/campus-level Technology Facilitators and whose major responsibility will be to help classroom teachers apply technology to support student learning. This responsibility takes many forms within the varying environments across educational systems.

The TF program standards are aligned with the six National Educational Technology Standards for Teachers, but through two additional standards extend the performance expectations of each candidate to reflect preparation for serving as mentor, coordinator, or technology integration specialist, assisting the teachers in their efforts to support student learning and professional growth with technology.