# Technology Specialist
## [27.470]

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### STANDARD 1 – Teaching Methodology

**The technology specialist will effectively plan, deliver, and assess students' mastery of concepts and skills relevant to learning technologies and technological literacy across the curriculum. The technology specialist will apply effective methods and strategies for teaching these concepts and skills to students, educators, and administrators in various educational settings.**

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**Knowledge Indicators** - *The competent technology specialist:*

1A.  understands how to plan, deliver, and assess students' mastery of skills relevant to learning technologies.

1B.  understands the concepts and skills relevant to learning technologies and technological literacy across the curriculum.

**Performance Indicators -** *The competent technology specialist:*

1C.  designs and practices methods and strategies for teaching concepts and skills related to learning technologies, including keyboarding, information access, and delivery tools in classroom, lab, and administrative settings.

1D.  designs and practices methods and strategies for teaching concepts and skills that apply classroom and administrative productivity tools.

1E.  designs and practices methods and strategies for teaching problem-solving principles and skills using technology resources.

1F.  designs and practices methods for teaching hypermedia development and scripting resources in a problem-solving context in a school environment encompassing pre-kindergarten through grade 12 (P-12).

1G.  designs and practices methods and strategies for heterogeneous grouping and collaboration using learning technologies.

1H.  identifies, designs and practices strategies for using learning technologies with diverse populations such as at-risk students and students with disabilities.

1I.  identifies and supports the implementation and revision of computer/technology literacy curriculum to reflect on-going changes in technology.

1J.  designs and implements integrated technology classroom activities that involve teamwork and/or small-group collaboration.

1K.  demonstrates methods for teaching uses of media and on-line tools from sources such as the World Wide Web (Internet), television, audio, print media, and graphics.

1L.  describes student guidance resources, career awareness resources, and student support activities related to computing and technology as a career option for students.

1M.  identifies professional organizations, groups, and resources that support the field of educational computing and technology.

1N.  designs a set of evaluation strategies and methods that will assess the effectiveness of instructional units that integrate computers/technology.

1O.  designs and practices methods for teaching social, ethical, and legal issues surrounding the responsible use of technology.

## STANDARD 2 – Hardware/Software Selection, Installation and Maintenance

**The technology specialist will demonstrate knowledge of selection, installation, management, and maintenance of the infrastructure in a classroom setting.**

2A.     **Knowledge Indicator -** The competent technology specialist understands how to select, install, manage, and maintain the infrastructure of technology in the classroom setting.

**Performance Indicators -** *The competent technology specialist:*

2B.     develops plans to configure computer/technology systems and related peripherals in laboratory, classroom cluster, and other appropriate instructional arrangements.
2C.     identifies and describes strategies to support the development of school/laboratory policies, procedures, and practices related to use of computers and other learning technologies.
2D.     researches, evaluates, and develops recommendations for purchasing instructional software to support and enhance the school curriculum.
2E.     researches, evaluates, and develops recommendations for purchasing learning technology systems.
2F.     designs and recommends procedures for the organization, management, and security of hardware and software.
2G.     identifies strategies for troubleshooting and maintaining various hardware/software configurations.
2H.     identifies and describes network software packages used to operate a computer network system.
2I.     configures a computer system and one or more software packages.

## STANDARD 3 – Research and Theory

**The technology specialist will identify and apply educational and technology-related research, the psychology of learning, and instructional design principles in guiding use of computers and technology in education.**

3A.     **Knowledge Indicator -** The competent technology specialist understands educational and technology-related research, the psychology of learning, and instructional design principles in guiding use of computers and technology in education.

**Performance Indicators -** *The competent technology specialist:*

3B.     summarizes and applies principles and practices of educational research in educational technology.
3C.     summarizes major research findings and trends related to the use of technology in education to support integration of technology in an elementary and/or secondary environment.
3D.     applies theories of learning, teaching, and instructional design and their relationship to the use of technology to support learning.
3E.     describes the social and historical foundations of education, including educational reform efforts, and how they relate to the use of technology in schools.
3F.     identifies research related to human and equity issues concerning the use of computers and related technologies in education.
3G.     designs a research project that includes evaluating the use of a specific technology in a P-12 environment.

## STANDARD 4 – Instructional Design and Product Development

**The technology specialist will develop curricular plans and teaching aids based on local, state and national standards for use of computers and other associated learning technologies, integrating these across subject and content areas.**

4A.     **Knowledge Indicator -** The competent technology specialist understands how to develop curricular plans and teaching aids based on standards for use of computers and other learning technologies (see "National Educational Technology Standards for Teachers" (2000) published by the International Society for Technology in Education, 400 Charnelton Street, Eugene OR 97401-2626; no later editions of or revisions are incorporated).

**Performance Indicators -** *The competent technology specialist:*

4B.     designs and practices methods for teaching at least one modern authoring tool to colleagues and students.
4C.     describes, designs, and practices the characteristics and uses of current authoring environments and evaluates their appropriateness for classroom applications.
4D.     identifies and uses local, State, and national guidelines to develop curricular plans for integrating technology into the curriculum in the P-12 environment.
4E.     applies instructional design principles to the design of screens, text, graphics, audio, and video in instructional products under development.
4F.     describes and practices strategies for testing and evaluating instructional products designed.
4G.     applies instructional design principles to develop substantive, interactive, multimedia, and computer- based instructional products.
4H.     describes, designs, and practices accepted principles of strategic planning to facilitate curriculum design for teaching with computers and related technologies.

## STANDARD 5 – Information Access and Delivery

**The technology specialist will implement information access and delivery resources in P-12 schools to support the curriculum.**

5A.     **Knowledge Indicator -** The competent technology specialist has knowledge of information access and delivery resources in P-12 schools to support the curriculum.

**Performance Indicators -** *The competent technology specialist:*

5B.     identifies and uses information access and telecommunication tools to support research and instruction throughout the curriculum.
5C.     uses and implements distance learning delivery systems, including computer, audio, and video conferencing.
5D.     creates multimedia presentations using advanced features of a presentation tool and delivers them using computer projection systems.

5E.     installs, configures, and uses local mass storage devices and media to store and retrieve information and resources.
5F.     describes issues related to selecting, installing, and maintaining Wide Area Networks for school districts.

## STANDARD 6 – Information Access and Delivery

**The technology specialist will install, customize, and configure the operating systems of computers and computer networks in school settings.**

6A.     **Knowledge Indicator -** The competent technology specialist understands how to install, customize, and configure the operating systems of computers and computer networks in school settings.

**Performance Indicators -** *The competent technology specialist:*

6B.     identifies and describes the major operating systems associated with computing platforms found in P-12 schools.
6C.     identifies and manipulates preferences, defaults, and other selectable features of operating systems commonly found in P-12 schools.
6D.     uses and manipulates networking software to effectively manage the operation of a Local Area network.
6E.     evaluates, troubleshoots, installs, and maintains computer operating systems for classrooms and laboratories.

## STANDARD 7 – Software/Hardware Selection, Installation, and Maintenance

**The technology specialist will identify and implement software in both classroom and administrative environments. He or she will investigate issues related to school/site planning, purchasing, and integration of technology.**

7A.     **Knowledge Indicator -** The competent technology specialist is aware of software in both classroom and administrative environments.

**Performance Indicators -** *The competent technology specialist:*

7B.     identifies and describes software used in classroom and administrative settings, including productivity tools, information access/telecommunications tools, multimedia/hypermedia tools, school management tools, evaluation/portfolio tools, and computer-based instruction.
7C.     investigates and recommends purchasing strategies and procedures for acquiring administrative and instructional software for educational settings.
7D.     describes evaluation criteria for software and identifies reliable sources of software evaluations.
7E.     identifies and implements methods of installation, maintenance, inventory, and management of software libraries.
7F.     develops and implements ethical and legal procedures for maintaining software libraries.
7G.     identifies and classifies assistive technology for students and teachers with special needs and locates sources to assist in their procurement and implementation.

## STANDARD 8 – Instructional Program Development

**The technology specialist will develop an instructional program based on local, State, and national standards for the use of computers and other associated learning technologies, integrating these plans across subject and content areas.**

8A.     **Knowledge Indicator -** The competent technology specialist understands how to develop an instructional program based on local, State, and national standards for the use of computers and other associated learning technologies, integrating these plans across subject and content areas.

**Performance Indicators -** *The competent technology specialist:*

8B.     describes and analyzes accepted principles of strategic planning to facilitate curriculum design for teaching with computers and related technologies.
8C.     identifies and uses local, State, and national guidelines to develop curricular plans for integrating technology in the P-12 environment.

## STANDARD 9 – Staff Development

**The technology specialist will demonstrate knowledge of issues and models related to leadership in staff development. The technology specialist will identify resources, plan, and design staff development activities to support professional growth in learning technologies.**

**Knowledge Indicators -** *The competent technology specialist:*

9A.     has knowledge of issues and models related to leadership in staff development.
9B.     understands how to design staff development activities that support professional growth in learning technologies.

**Performance Indicators -** *The competent technology specialist:*

9C.     plans and designs staff development programs.
9D.     describes and identifies resources for staff development.
9E.     plans and customizes staff development based on differing audiences, including school and district decision makers and the larger school community.

## STANDARD 10 – Facilities and Resource Management

**The technology specialist will demonstrate knowledge of issues related to facilities and resource management.**

10A.   **Knowledge Indicator -** The competent technology specialist understands the issues related to facilities and resource management.

**Performance Indicators -** *The competent technology specialist:*

10B.   describes and uses budget planning and management procedures related to educational computing and technology facilities and resources.
10C.   identifies funding sources available at local, State, and/or national levels and collaborates on development of a grant proposal.
10D.   plans, develops, implements, and evaluates strategies and procedures for resource acquisition and management of technology-based systems, including hardware and software.
10E.   identifies, describes, and analyzes procedures related to basic troubleshooting, preventive maintenance, and procurement of system-wide technological maintenance services.
10F.   describes and maintains current information involving facilities planning issues related to computers and related technologies.
10G.   designs and develops policies and procedures concerning staffing, scheduling, and security for managing computers/technology in a variety of instructional and administrative school settings.

## STANDARD 11 – Managing the Change Process within Educational Reform Efforts

**The technology specialist will demonstrate knowledge of strategies for and issues related to managing the change process as part of overall educational reform efforts in schools and districts.**

11A.   **Knowledge Indicator -** The competent technology specialist has knowledge of strategies for and issues related to managing the change process as part of overall educational reform efforts in schools and districts.

**Performance Indicators -** *The competent technology specialist:*

11B.   evaluates school and district technology plans and recommends improvements.
11C.   discusses issues relating to building collaborations, alliances, and partnerships involving educational technology initiatives.
11D.   demonstrates knowledge of effective group process skills.
11E.   discusses and develops issues related to local education reform efforts and recommends building-level changes and professional development strategies (such as block scheduling, cross-subject units of instruction, etc.) to facilitate the integration of technology into all content areas.
11F.   uses evaluation findings to recommend modifications in technology implementations.

## STANDARD 12 – Professional Development

**The technology specialist will participate in professional development experiences that allow him or her to observe the use of technology to support instruction, the management of technological resources in educational settings, and the evaluation of effectiveness of technological resources in teaching and learning; and to apply technological resources to support instruction in classroom settings.**

**Knowledge Indicators -** *The competent technology specialist:*

12A.   understands the value of professional development experiences in observing the use of technology.

12B.	has knowledge of how to manage, evaluate, and apply technological resources to support instruction in classroom settings.

**Performance Indicators -** *The competent technology specialist:*

12C.	observes and compares methods and strategies used in educational technology in a variety of authentic educational settings (i.e., elementary, middle, secondary, adaptive/assistive classrooms, labs).
12D.	develops and teaches a series of lessons that apply technological resources to support instruction.
12E.	documents and assesses a significant site-based activity involving experiences in instructional program development, staff development, facilities and resource management, or managing change related to technology use in schools.
12F.	documents and assesses experiences in implementing a P-12 building-based LAN (Local Area Network) and/or WAN (Wide Area Network) with Internet connectivity.