

# Instructional Technology Standards

## Proposed by the GaPSC Instructional Technology Task Force

### December 2010

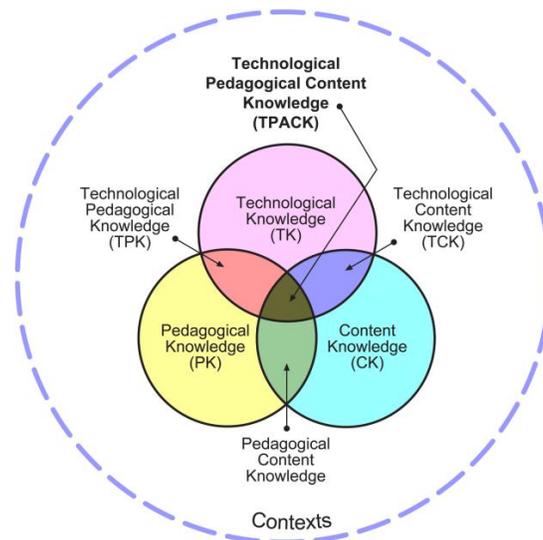
#### Introduction

Instructional technology can be defined as the effective use of technology to support teaching and learning. We often think of digital computer technology when we think of instructional technology; however, instructional technology also includes analog technologies. Regardless of the technologies involved, the primary goal is to select effective and appropriate technologies to use in designing, developing, implementing, managing, and assessing teaching and learning.

The Instructional Technology standards that follow are based on a framework for technology integration known as *Technological Pedagogical Content Knowledge (TPACK)* (Mishra & Koehler, 2006). This framework adds to Shulman's description of pedagogical content knowledge (PCK) by including technology knowledge (T). The Instructional Technology task force values the TPACK model and believes that teaching effectively with technology requires developing expertise in the following three (3) knowledge domains: pedagogy (P), content (C), and technology (T), as well as in the domains that exist between and among them including technological pedagogical knowledge (TPK), pedagogical content knowledge (PCK), technological content knowledge (TCK), and of course, technological pedagogical content knowledge (TPACK), the convergence of the three domains.

#### Intended Audience for these Standards

These standards are designed for teachers who wish to effectively integrate technology into their own teaching practice and for educators who wish to assist other teachers in utilizing technology to improve the teaching and learning process.



## Terminology

**Content Knowledge:** Content knowledge in the field of Instructional Technology includes knowledge of technology operations, concepts, and resources and the evaluation of current and emerging technologies in education.

**Professional Knowledge:** Professional knowledge includes a broad range of areas including leadership theory and practice, organizational change, research and best practices in technology integration, learning theory, professional development, instructional design, and assessment.

**Candidate:** Candidate refers to the educator enrolled in the advanced program.

**Student:** Student refers to P-12 students.

## Standards

### Standard 1: Visionary Leadership

Candidates demonstrate the knowledge, skills, and dispositions to inspire and lead the development and implementation of a shared vision for the effective use of technology to promote excellence and support transformational change throughout the organization.

#### Element 1.1 Shared Vision

Candidates facilitate the development and implementation of a shared vision for the use of technology in teaching, learning, and leadership.

#### Element 1.2 Strategic Planning

Candidates facilitate the design, development, implementation, communication, and evaluation of technology-infused strategic plans.

#### Element 1.3 Policies, Procedures, Programs & Funding

Candidates research, recommend, and implement policies, procedures, programs, and funding strategies to support implementation of the shared vision represented in the school, district, state, and federal technology plans and guidelines. Funding strategies may include the development, submission, and evaluation of formal grant proposals.

#### Element 1.4 Diffusion of Innovations & Change

Candidates research, recommend, and implement strategies for initiating and sustaining technology innovations and for managing the change process in schools.

## **Standard 2: Teaching, Learning, & Assessment**

Candidates demonstrate the knowledge, skills, and dispositions to effectively integrate technology into their own teaching practice and to collaboratively plan with and assist other educators in utilizing technology to improve teaching, learning, and assessment.

### **Element 2.1 Content Standards & Student Technology Standards**

Candidates model and facilitate the design and implementation of technology-enhanced learning experiences aligned with student content standards and student technology standards.

### **Element 2.2 Research-Based Learner-Centered Strategies**

Candidates model and facilitate the use of research-based, learner-centered strategies addressing the diversity of all students.

### **Element 2.3 Authentic Learning**

Candidates model and facilitate the use of digital tools and resources to engage students in authentic learning experiences.

### **Element 2.4 Higher Order Thinking Skills**

Candidates model and facilitate the effective use of digital tools and resources to support and enhance higher order thinking skills (e.g., analyze, evaluate, and create); processes (e.g., problem-solving, decision-making); and mental habits of mind (e.g., critical thinking, creative thinking, metacognition, self-regulation, and reflection).

### **Element 2.5 Differentiation**

Candidates model and facilitate the design and implementation of technology-enhanced learning experiences making appropriate use of differentiation, including adjusting content, process, product, and learning environment based upon an analysis of learner characteristics, including readiness levels, interests, and personal goals.

### **Element 2.6 Instructional Design**

Candidates model and facilitate the effective use of research-based best practices in instructional design when designing and developing digital tools, resources, and technology-enhanced learning experiences.

### **Element 2.7 Assessment**

Candidates model and facilitate the effective use of diagnostic, formative, and summative assessments to measure student learning and technology literacy, including the use of digital assessment tools and resources.

### **Element 2.8 Data Analysis**

Candidates model and facilitate the effective use of digital tools and resources to systematically collect and analyze student achievement data, interpret results, communicate findings, and implement appropriate interventions to improve instructional practice and maximize student learning.

### **Standard 3: Digital Learning Environments**

Candidates demonstrate the knowledge, skills, and dispositions to create, support, and manage effective digital learning environments.

#### **Element 3.1 Classroom Management & Collaborative Learning**

Candidates model and facilitate effective classroom management and collaborative learning strategies to maximize teacher and student use of digital tools and resources.

#### **Element 3.2 Managing Digital Tools and Resources**

Candidates effectively manage digital tools and resources within the context of student learning experiences.

#### **Element 3.3 Online & Blended Learning**

Candidates develop, model, and facilitate the use of online and blended learning, digital content, and learning networks to support and extend student learning and expand opportunities and choices for professional learning for teachers and administrators.

#### **Element 3.4 Adaptive and Assistive Technology**

Candidates facilitate the use of adaptive and assistive technologies to support individual student learning needs.

#### **Element 3.5 Basic Troubleshooting**

Candidates troubleshoot basic software and hardware problems common in digital learning environments.

#### **Element 3.6 Selecting and Evaluating Digital Tools & Resources**

Candidates collaborate with teachers and administrators to select and evaluate digital tools and resources for accuracy, suitability, and compatibility with the school technology infrastructure.

#### **Element 3.7 Communication & Collaboration**

Candidates utilize digital communication and collaboration tools to communicate locally and globally with students, parents, peers, and the larger community.

### **Standard 4: Digital Citizenship & Responsibility**

Candidates demonstrate the knowledge, skills, and dispositions to model and promote digital citizenship and responsibility.

#### **Element 4.1 Digital Equity**

Candidates model and promote strategies for achieving equitable access to digital tools and resources and technology-related best practices for all students and teachers.

#### **Element 4.2 Safe, Healthy, Legal & Ethical Use**

Candidates model and facilitate the safe, healthy, legal, and ethical uses of digital information and technologies.

### **Element 4.3 Diversity, Cultural Understanding & Global Awareness**

Candidates model and facilitate the use of digital tools and resources to support diverse student needs, enhance cultural understanding, and increase global awareness.

## **Standard 5: Professional Learning & Program Evaluation**

Candidates demonstrate the knowledge, skills, and dispositions to conduct needs assessments, develop technology-based professional learning programs, and design and implement regular and rigorous program evaluations to assess effectiveness and impact on student learning.

### **Element 5.1 Needs Assessment**

Candidates conduct needs assessments to determine school-wide, faculty, grade-level, and subject area strengths and weaknesses to inform the content and delivery of technology-based professional learning programs.

### **Element 5.2 Professional Learning**

Candidates develop and implement technology-based professional learning that aligns to state and national professional learning standards, integrates technology to support face-to-face and online components, models principles of adult learning, and promotes best practices in teaching, learning, and assessment.

### **Element 5.3 Program Evaluation**

Candidates design and implement program evaluations to determine the overall effectiveness of professional learning on deepening teacher content knowledge, improving teacher pedagogical skills and/or increasing student learning.

## **Standard 6: Candidate Professional Growth & Development**

Candidates demonstrate the knowledge, skills, and dispositions to engage in continuous learning, reflect on professional practice, and engage in appropriate field experiences.

### **Element 6.1 Continuous Learning**

Candidates demonstrate continual growth in knowledge and skills of current and emerging technologies and apply them to improve personal productivity and professional practice.

### **Element 6.2 Reflection**

Candidates regularly evaluate and reflect on their professional practice and dispositions to improve and strengthen their ability to effectively model and facilitate technology-enhanced learning experiences.

### **Element 6.3 Field Experiences**

Candidates engage in appropriate field experiences to synthesize and apply the content and professional knowledge, skills, and dispositions identified in these standards.