

# 21<sup>st</sup> Century Skills

## 21st Century Content

Core Subjects

Global Awareness

Civic Engagement

Business, Financial,  
& Economic  
Literacy

## Skills

### Learning & Innovation

Creativity & Innovation

Critical Thinking &

Problem Solving

Communication &

Collaboration

### Information, Media & Technology

Information Literacy

Media Literacy

ICT Literacy

### Life & Career

Flexibility & Adaptability

Initiative & Self-Direction

Social & Cross-Cultural Skills

Productivity & Accountability

Leadership & Responsibility

# 21<sup>st</sup> Century Skills

The 21st Century Workforce Commission's (2001) National Alliance of Business summed up the economic implications for us: "The current and future health of America's 21st century economy depends directly on how broadly and deeply Americans reach a new level of literacy — '21st Century Literacy'."

A report from the 21st Century Literacy Summit (2002) contends that "the explosive growth of technology in every aspect of society offers us a unique opportunity to engage our citizens in economic and civic life." The report further states that to take advantage of this opportunity, we must continually acquire and develop new knowledge and skills. Summit participants noted, "Information and communication technologies are raising the bar on the competencies needed to succeed in the 21st century, and they are compelling us to revisit many of our assumptions and beliefs."

The sheer magnitude of human knowledge, world globalization, and the accelerating rate of change due to technology necessitates a shift in our children's education — from plateaus of knowing to continuous cycles of learning. Therefore, policymakers and educators alike must define 21st century skills, highlighting the relationship of those skills to conventional academic standards. As they do so, they must also recognize the need for multiple assessments to measure these skills within the context of academic standards, evaluating their application to today's technological, global society.

## Digital-Age Literacy

As society changes, the skills needed to negotiate the complexities of life also change. In the early 1900s, a person who had acquired the simple reading, writing, and calculating skills was considered literate. Only in recent years has the public education system expected all students to build on those basics, developing a broader range of literacies (International ICT Literacy Panel, 2002). To achieve success in the 21st century, students also need to attain proficiency in science, technology, and culture, as well as gain thorough understanding of information in all its forms.

**Digital-Age Literacy** includes the following:

**Basic Literacy:** Language proficiency (in English) and numeracy at levels necessary to function on the job and in society to achieve one's goals and to develop one's knowledge and potential in this Digital Age.

**Scientific Literacy:** Knowledge and understanding of the scientific concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity.

**Economic Literacy:** The ability to identify economic problems, alternatives, costs, and benefits; analyze the incentives at work in economic situations; examine the consequences of changes in economic conditions and public policies; collect and organize economic evidence; and weigh costs against benefits.

**Technological Literacy:** Knowledge about what technology is, how it works, what purposes it can serve, and how it can be used efficiently and effectively to achieve specific goals.

**Visual Literacy:** The ability to interpret, use, appreciate, and create images and video using both conventional and 21st century media in ways that advance thinking, decision making, communication, and learning.

**Information Literacy:** The ability to evaluate information across a range of media; recognize when information is needed; locate, synthesize, and use information effectively; and accomplish these functions using technology, communication networks, and electronic resources.

**Multicultural Literacy:** The ability to understand and appreciate the similarities and differences in the customs, values, and beliefs of one's own culture and the cultures of others.

**Global Awareness:** The recognition and understanding of interrelationships among international organizations, nation-states, public and private economic entities, socio-cultural groups, and individuals across the globe.

## Inventive Thinking (& Problem-Solving)

Experts agree: As technology becomes more prevalent in our everyday lives, cognitive skills become increasingly critical. "In effect, because technology makes the simple tasks easier, it places a greater burden on higher-level skills" (International ICT Literacy Panel, 2002, p. 6). The Committee on Workforce Needs in Information Technology (2001) defines *intellectual capabilities* as "one's ability to apply information technology in complex and sustained situations and to understand the consequences of doing so" (p. 18). These capabilities are "life skills" formulated in the context of Digital Age technologies.

*Inventive Thinking is comprised of the following 'Life skills':*

**Adaptability and Managing Complexity:** The ability to modify one's thinking, attitude, or behavior to be better suited to current or future environments; and the ability to handle multiple goals, tasks, and inputs, while understanding and adhering to constraints of time, resources, and systems (e.g., organizational, technological).

**Self-Direction:** The ability to set goals related to learning, plan for the achievement of those goals, independently manage time and effort, and independently assess the quality of learning and any products that result from the learning experience.

**Curiosity:** The desire to know or the spark of interest that leads to inquiry.

**Creativity:** The act of bringing something into existence that is genuinely new and original, whether personally (original only to the individual) or culturally (where the work adds significantly to a domain of culture as recognized by experts).

**Risk Taking:** The willingness to make mistakes, advocate unconventional or unpopular positions, or tackle extremely challenging problems without obvious solutions, such that one's personal growth, integrity, or accomplishments are enhanced.

**Higher-Order Thinking and Sound Reasoning:** The cognitive processes of analysis, comparison, inference and interpretation, evaluation, and synthesis applied to a range of academic domains and problem-solving contexts.

## Effective Communication

According to the 21st Century Literacy Summit (2002), "Information and communications technologies are raising the bar on the competencies needed to succeed in the 21st century." (p.4). Both researchers and the business community agree: Effective communication skills are essential for success in today's knowledge-based society. The 1992 SCANS report, for example, lists the following as necessary for success in this area: participating in a team, teaching others new skills, service clients and customers, exercising leadership, negotiating, and working with diverse groups of people (SCANS, 1991, p- 81). Information technology can play a facilitative role in effective communication, but emerging technologies also can present ethical dilemmas. As information and communication technologies become more pervasive in society, citizens will need to manage the impact on their social, personal, professional, and civic lives.

*Effective Communication involves:*

**Teaming and Collaboration:** Cooperative interaction between two or more individuals working together to solve problems, create novel products, or learn and master content.

**Interpersonal Skills:** The ability to read and manage the emotions, motivations, and behaviors of oneself and others during social interactions or in a social-interactive context.

**Personal Responsibility:** Depth and currency of knowledge about legal and ethical issues related to technology, combined with one's ability to apply this knowledge to achieve balance, integrity, and quality of life as a citizen, a family and community member, a learner, and a worker.

**Social and Civic Responsibility:** The ability to manage technology and govern its use in a way that promotes public good and protects society, the environment, and democratic ideals.

**Interactive Communication:** The generation of meaning through exchanges using a range of contemporary tools, transmissions, and processes.

## High Productivity

According to leading researchers, caution should be exercised when attempting to link high-stakes testing and high standards to the creation of a productive workforce (Levin, 2001). Levin's studies in the 1990s led him to conclude that how well students do on current tests in no way correlates to how productive they will be in the workforce.

*High productivity currently is not a high-stakes focus of schools, yet the skills involved in this cluster often determine whether a person succeeds or fails in the workforce:*

**Prioritizing, Planning, and Managing for Results:** The ability to organize efficiently achieve the goals of a specific project or problem.

**Effective Use of Real-World Tools:** The ability to use real-world tools — the hardware, software, networking, and peripheral devices used by information technology (IT) workers to accomplish 21st century work — to communicate, collaborate, solve problems, and accomplish tasks.

**Ability to Produce Relevant, High-Quality Products:** The ability to produce intellectual, informational, or material products that serve authentic purposes and occur as a result of students using real-world tools to solve or communicate about real-world problems. These products include persuasive communications in any media (print, video, the Web, verbal presentation), synthesis of resources into more useable forms (databases, graphics, simulations), or refinement of questions that build upon what is known to advance one's own and others' understanding.

# 21<sup>st</sup> Century Skills

## Definitions and Descriptions

### GLOBAL AWARENESS

Students need a deeper understanding of the thinking, motivations, and actions of people from different cultures and countries in order to successfully navigate and respond to communities and workplaces extending beyond their neighborhoods. Key elements of Global Awareness include a student's ability to:

- Use 21<sup>st</sup> century skills to understand and address global issues
- Learn from and work collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue in personal, work, and community contexts
- Master non-English language skills as a tool for understanding other nations and cultures

### CIVIC LITERACY

Students need to understand, analyze, and participate in government and in community, both globally and locally, in order to shape the circumstances that impact their daily lives. Key elements of Civic Literacy include a student's ability to:

- Be an informed citizen to participate effectively in government
- Exercise the rights and obligations of citizenship at local, state, national, and global levels
- Understand the local and global implications of civic decisions
- Apply 21<sup>st</sup> century skills to make intelligent choices as a citizen

### FINANCIAL, ECONOMIC, AND BUSINESS LITERACY

There is a growing demand on people to understand business processes, entrepreneurial spirit, and the economic forces that drive today's economy. Key elements of Financial, Economic, and Business Literacy include a student's ability to:

- Make appropriate personal economic choices
- Understand the role of the economy and the role of business in the economy
- Apply appropriate 21<sup>st</sup> century skills to function as a productive contributor within an organizational setting
- Integrate oneself within and adapting continually to our nation's evolving economic and business environment

### LEARNING SKILLS: INFORMATION AND COMMUNICATION SKILLS

Students need to think critically, analyze information, comprehend new ideas, communicate, collaborate, solve problems, and make sound decisions. Some critical elements of these thinking and learning skills are:

- Creativity and intellectual curiosity. Developing, implementing and communicating new ideas to others, staying open and responsive to new and diverse perspectives.
- Information and media literacy skills. Analyzing, accessing, managing, integrating, evaluating and creating information in a variety of forms and media. Understanding the role of media in society.
- Communication skills. Understanding, managing and creating effective oral, written and multimedia communication in a variety of forms and contexts.
- Self-direction. Monitoring one's own understanding and learning needs, locating appropriate resources, transferring learning from one domain to another.

### LEARNING SKILLS: THINKING AND PROBLEM-SOLVING SKILLS

Students need to think critically, analyze information, comprehend new ideas, communicate, collaborate, solve problems, and make sound decisions. Some critical elements of these thinking and learning skills are:

- Critical thinking and systems thinking. Exercising sound reasoning in understanding and making complex choices, understanding the interconnections among systems.
- Problem identification, formulation and solution. Ability to frame, analyze and solve problems.

## **LEARNING SKILLS: INTERPERSONAL AND SELF-DIRECTIONAL SKILLS**

Students need to think critically, analyze information, comprehend new ideas, communicate, collaborate, solve problems, and make sound decisions. Some critical elements of these thinking and learning skills are:

- Interpersonal and collaborative skills. Demonstrating teamwork and leadership; adapting to varied roles and responsibilities; working productively with others; exercising empathy; respecting diverse perspectives.
- Self-direction. Monitoring one's own understanding and learning needs, locating appropriate resources, transferring learning from one domain to another.
- Creativity and intellectual curiosity. Developing, implementing and communicating new ideas to others, staying open and responsive to new and diverse perspectives.
- Social responsibility. Acting responsibly with the interests of the larger community in mind; demonstrating ethical behavior in personal, workplace and community contexts.
- Accountability and adaptability. Exercising personal responsibility and flexibility in personal, workplace and community contexts; setting and meeting high standards and goals for one's self and others; tolerating ambiguity.

## **INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) LITERACY**

Technology has become an essential tool for the realization of learning and thinking skills in today's knowledge economy. Key elements of ICT Literacy include use of ICT in service of:

- Information and media literacy skills. Analyzing, accessing, managing, integrating evaluating and creating information in a variety of forms and media. Understanding the role of media in society.
- Communication skills. Understanding, managing and creating effective oral, written and multimedia communication in a variety of forms and contexts.
- Interpersonal and self-direction skills. Becoming more productive in accomplishing tasks and developing interest in improving own skills.