

Teaching 21st Century Skills

An ASCD Action Tool

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Using This Action Tool

This action tool defines the skills and knowledge that students will need for the 21st century and provides tools that you can use with any content to help teach and reinforce those skills. Based on the work of the Partnership for 21st Century Skills, the tools can help you design instruction that breaks down the walls between academic content areas and the application of knowledge so that students can be truly prepared for their lives in the 21st century.

Teaching 21st century skills is not about teaching a specific strategy or tool, but about teaching students a process or way of thinking about what they are learning. The goal is to help students think independently about the content and seek answers to their own questions. The tools and activities in this book can help you guide students through a variety of models and processes that allow them to practice making thinking routine. Through repetition and reflection, students can automate their thinking processes and routines and use them as they encounter new information.

Without students thoughtfully engaging and reflecting, the tools will not result in the kinds of habits of learning and understanding necessary for them to develop. Students must become fluent in their use of these new literacies and ways of thinking. The 21st Century Fluency Project (n.d.), a collaborative initiative sponsored by the infoSavvy Group, describes the type of fluency students should have:

A young learner who is literate in the use of a tool, say a pencil for example, can use it to write, but does so haltingly because a great deal of focus is on the use of the tool. As time goes on, this learner will develop fluency with the use of the pen or pencil. . . . No longer will it be an impediment, instead their thoughts and ideas flow directly to the paper. The use of the tool is transparent. This is the level of proficiency we . . . strive to develop in today's learners.

The key to using the tools in this book effectively is to ensure that the tools

- Reinforce the desired way to think about and process content.
- Align with the desired outcomes for the learning.
- Are clearly presented to students, such as through modeling of how to use the tool.
- Provide opportunities for students to reflect on how the tools helped them process information and learn the content.
- Integrate technology appropriately.
- Allow for collaborative activities, where appropriate, to help students develop life and career skills.

ORGANIZATION OF THIS ACTION TOOL

To explain the foundation on which the tools in this volume were designed, the opening “Rationale” section describes the skills, or literacies, and knowledge that students need to succeed in the 21st century. It also illustrates the relationship among the elements of learning and how educators can integrate them into design learning opportunities.

The tools that follow are designed to help students learn and practice these 21st century skills. The chart on pages 46–49 identifies the 21st century skills to which each tool pertains. As you consider integrating content with these skills, the chart will help you identify appropriate tools for designing instruction and learning opportunities.

Each tool consists of

- A key that identifies to which 21st century skills the tool is linked.
- Directions that provide guidance for implementing the tool in the classroom.
- Tips such as how to introduce the activity, optimal grouping options, follow-up activities, and how the tool can fit into a larger lesson.
- Suggestions for integrating technology. Because the landscape and availability of technology is continuously shifting, the suggestions are generic. Some genres of technology that educators can consider integrating into learning opportunities include the following:

Purpose of Technology	Examples
Search for Information	Variety of search engines and browsers, such as Bing, Google, Yahoo, Ask.com, and Firefox. Also specialized search engines, such as Google Scholar.
Share Information	Social networking sites, such as Twitter and Facebook; e-mail; blogs; message boards; and collaborative editing tools, such as Google Docs.

Purpose of Technology	Examples
Create Multimedia	Microsoft Movie Maker, Creative Commons images, PowerPoint presentations, Wikimedia, Flickr, and Animoto.
Organize Information	Google Wonder Wheel, wikis, Diigo, PageFlakes, social bookmarking, and tags to categorize sites.
Collaborate and Share Information	Wikis, Google Docs, Diigo, message boards, social bookmarking, and Google Sidewiki.
Research Tools	Annotating websites, social bookmarking, Google Wonder Wheel and timelines, and Google Scholar.
Content Aggregators	RSS feeds and Google Reader.
Digital Conversations	VoiceThread, blogs, Twitter, Skype, webinars, videoconferencing, and PLURK.

(The section “Effective Use of Technology” on page 11 in the “Rationale” chapter goes into more detail about the infusion of information, media, and technology skills.)

- Questions that promote metacognition to help develop students’ ability to think about their own learning and thinking processes. You can address the questions during class discussion, in small groups, in student journals, or in a variety of other ways.

To help create a well-rounded set of learning opportunities, start with the instructional planning tools on pages 27–43. With these tools, you can help students develop skills in all of the areas they need for success in the 21st century.

ELECTRONIC TOOLS AND RESOURCES

The tools are available for download. To access these documents, visit www.ascd.org/downloads and enter the key code found on page vi. All files are saved in Adobe Portable Document Format (PDF). The PDF is compatible with both personal computers (PCs) and Macintosh computers. The main menu will let you navigate through the various sections, and you can print individual tools or sections in their entirety. If you are having difficulties downloading or viewing the files, contact webhelp@ascd.org for assistance, or call 1-800-933-ASCD.

MINIMUM SYSTEM REQUIREMENTS

Program: The most current version of the Adobe Reader software is available for free download at www.adobe.com.

PC: Intel Pentium Processor; Microsoft Windows XP Professional or Home Edition (Service Pack 1 or 2), Windows 2000 (Service Pack 2), Windows XP Tablet PC Edition, Windows Server 2003, or Windows NT (Service Pack 6 or 6a); 128 MB of RAM (256 MB recommended); up to 90 MB of available hard-disk space; Internet Explorer 5.5 (or higher), Netscape 7.1 (or higher), Firefox 1.0, or Mozilla 1.7.

Macintosh: PowerPC G3, G4, or G5 processor, Mac OS X v.10.2.8–10.3; 128 MB of RAM (256 MB recommended); up to 110 MB of available hard-disk space; Safari 1.2.2 browser supported for MAC OS X 10.3 or higher.

GETTING STARTED

Select “Download files.” Designate a location on your computer to save the file. Choose to open the PDF file with your existing version of Adobe Acrobat Reader, or install the newest version of Adobe Acrobat Reader from www.adobe.com. From the main menu, select a section by clicking on its title. To view a specific tool, open the Bookmarks tab in the left navigation pane and then click on the title of the tool.

PRINTING TOOLS

To print a single tool, select the tool by clicking on its title via the Bookmarks section and the printer icon, or select File then Print. In the Print Range section, select Current Page to print the page on the screen. To print several tools, enter the page range in the “Pages from” field. If you wish to print all of the tools in the section, select All in the Printer Range section and then click OK.



The Framework for 21st Century Learning

Already more than a decade into the 21st century, much has changed since midnight of 1999, when dire predictions were made about computers crashing as the new millennium approached. Since that time, technology has grown and advanced exponentially, giving us tools that bring the world to our fingertips and have made a truly global community.

As educators, what do we need to do to prepare students for this rapidly changing, technology-rich, interconnected global community? What does it mean to be literate in today's world? To efficiently and effectively survive and prosper in the information-laden future, learners will need the crucial skills of choosing, accessing, using, and applying knowledge to innovate, solve problems, and think critically about information.

A number of global initiatives have attempted to define the skills and competencies that students will need to succeed and thrive in the 21st century. One such initiative is the Partnership for 21st Century Skills, a public-private organization of major business and educational entities dedicated to defining a model of learning for this millennium. The partnership has defined a common structure and language that helps us make sense of the vast multitude of factors that we must consider in designing instruction for 21st century learning.

The Partnership for 21st Century Skills ([P21], 2003) identifies six key elements of 21st century learning:

1. It emphasizes core subjects at higher levels of understanding.
2. It emphasizes learning skills, such as information and technology skills, thinking and problem-solving skills, and interpersonal and self-directional skills.
3. It uses 21st century tools, such as digital technology and communication, so that students can “access, manage, integrate and evaluate information, construct new knowledge, and communicate with others” (p. 4) to develop learning skills.
4. Educators teach and students learn in a 21st century context that uses real-world applications and experiences that are meaningful and relevant to students.

5. Educators teach and students learn 21st century content in emerging areas such as global awareness and financial, economic, business, and civic literacy.
6. Teachers use 21st century assessments that measure 21st century skills in both standardized testing and classroom assessments.

The Partnership for 21st Century Skills describes the framework for 21st century learning as “the skills, knowledge and expertise students must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise and literacies” (P21, 2009, p. 1). The old literacies of reading, writing, and arithmetic—also known as the *three Rs*—are certainly still the foundation of learning and success in both school and life. However, a new set of literacies—also known as the *four Cs*—is moving to the forefront as students increasingly live in a global community with new technologies and expectations. The new literacies include

- creativity and innovation
- critical thinking and problem solving
- communication
- collaboration

Technology and social and personal responsibility are also important literacies for the 21st century. These new literacies are defined by the need for students to become thoughtful, intentional, and responsible learners and citizens, and they encompass the skills that students need to succeed in a rapidly changing world.

In short, the framework for 21st century learning is built on a base of academic subject knowledge that students apply appropriately through the essential skills of creativity and innovation, critical thinking and problem solving, and communication and collaboration. It is not a question of old versus new literacies; it’s about carefully integrating the two to provide instructional opportunities that result in graduates who are college- and career-ready.

21ST CENTURY CONTENT KNOWLEDGE: EXPANDING ON THE THREE RS

The Partnership for 21st Century Skills’ framework for 21st century learning is composed of core content knowledge, interdisciplinary themes, and skills that should be intertwined into a comprehensive set of learning opportunities. Students need to not only master the subject matter, but also learn how to use and communicate that knowledge.

All students should have a solid grounding in academic knowledge. In addition to the three Rs of subject-area knowledge, which are foremost in creating an academic foundation, students need a well-developed base of knowledge in areas such as

- world languages
- arts

The Framework for 21st Century Learning

- economics
- science
- geography
- history
- government and civics

However, students will lose interest and not retain knowledge if they don't learn content along with application and deep understanding. By applying the other two components of the framework, interdisciplinary themes and skills, students gain a deeper and more enduring understanding of the subject matter.

Interdisciplinary themes and skills allow students to recognize the interrelationship of ideas and make connections across academic subjects. When students create bridges of understanding among academic content, they move their understanding to higher levels and build lifelong habits and skills that cut across all content areas.

The Partnership for 21st Century Skills (2009) identifies the following interdisciplinary themes that span all content areas and that we should deliberately weave into the fabric of instruction:

- global awareness
- financial, economic, business, and entrepreneurial literacy
- civic literacy
- health literacy
- environmental literacy

In addition to these themes, teachers need to consider the connections among academic content when they design and deliver instruction.

21ST CENTURY SKILLS: THE FOUR CS

The 21st century requires us to create a generation of thinkers, learners who think creatively to solve problems and who collaborate with others at home and in the workplace. The ability to learn and create new ideas is essential for the 21st century.

“Workers must be equipped not simply with technical know-how but also with the ability to create, analyze and transform information and to interact effectively with others,” (p. 3) remarked former Federal Reserve Board Chairman Alan Greenspan (2000) in encapsulating how we need to prepare students.

The 21st century skills that the Partnership for 21st Century Skills outlines—the four Cs—collectively address the kind of needs that Greenspan described, and teachers should

integrate these skills into every subject area. For these 21st century skills, students should be able to do the following:

1. CREATIVITY AND INNOVATION

Think Creatively

- Use a wide range of idea creation techniques (such as brainstorming)
- Create new and worthwhile ideas (both incremental and radical concepts)
- Elaborate, refine, analyze and evaluate their own ideas to improve and maximize creative efforts

Work Creatively with Others

- Develop, implement, and communicate new ideas to others effectively
- Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work
- Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas
- View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes

Implement Innovation

- Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur

2. CRITICAL THINKING AND PROBLEM SOLVING

Reason Effectively

- Use various types of reasoning (inductive, deductive, etc.) that are appropriate to the situation

Use Systems Thinking

- Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems

Make Judgments and Decisions

- Effectively analyze and evaluate evidence, arguments, claims and beliefs
- Analyze and evaluate major alternative points of view
- Synthesize and make connections between information and arguments
- Interpret information and draw conclusions based on the best analysis
- Reflect critically on learning experiences and processes

3. COMMUNICATION

- Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts
- Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions.
- Use communication for a wide range of purposes (e.g. to inform, instruct, motivate and persuade)
- Utilize multiple media and technologies, and know how to judge their effectiveness *a priori* as well as assess their impact
- Communicate effectively in diverse environments (including multilingual)

4. COLLABORATION

- Demonstrate ability to work effectively and respectfully with diverse teams
- Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal
- Assume shared responsibility for collaborative work, and value the individual contributions made by each team member

Source: From P21 Framework Definitions (p. 3–4), by the Partnership for 21st Century Skills, 2009. Copyright 2009 by Partnership for 21st Century Skills. Reprinted with permission.

The four Cs are not new areas of focus for classrooms or even new goals for education. However, their importance in framing instruction and learning has increased dramatically. In a world in which information flows instantaneously to a global audience, never before have communication and collaboration been so vital. And creativity and critical thinking are paramount in a global economy that rewards innovation and in which routine tasks can be automated, but thinking cannot.