

21st Century Skills Standards

A Partnership for 21st Century Skills epaper

Why do we need 21st century standards?

Standards are an attempt to answer an essential educational question: what knowledge and skills do we want our children to learn? Not surprisingly, standards often engender debate, even conflict. Yet few people would dispute the need to better prepare children to meet the demands of modern life, making the guidance that standards provide very relevant.

Standards drive the critical elements of the American educational system — the curricula that schools follow, the textbooks students read, and the tests they take. Similarly, standards establish the levels of performance that students, teachers, and schools are expected to meet. Over the past two decades, state agencies and educational groups have paid considerable attention to describing what students need to know but without addressing the more complex thinking and technical skills that will govern 21st century life. Today's standards privilege fact-based learning and a few areas of study and have the following limitations:

- Cover only core subjects, when they should also include the life and career, learning and innovation, and information, media and technology skills students need in the 21st century.
- Cover too many superficial topics; they do not promote deep understanding that represent true subject mastery.
- Focus on short-lived memorization of facts, rather than skills of analysis and synthesis that enable lifelong learning.
- Compartmentalize knowledge into subject-specific silos, and discourage students from achieving rich interdisciplinary perspectives and 21st century themes.
- Are measured by standardized high-stakes tests that assess only a small portion of the skills and themes defined in the Partnership for 21st Century Skills' Framework.

The Partnership for 21st Century Skills, working with educators, employers, and government officials across the country, has developed a framework that outlines what students must know for future success. Now states must take the next step and develop 21st century standards to ensure that all the

components of the American public educational system — schools, teachers, curricula, learning materials, and tests — work together to equip children for the competitive, complex, and connected world they will inherit.

What are standards?

Standards set priorities that determine the overall direction of our nation's public schools. But while all states have them, because public education in the United States is chartered at the state level, every state determines its own. Thus, educational standards differ from state to state. Created by state agencies, and often consisting of hundreds of pages of detail, actual standards documents are rarely seen by the general public. But because they function as a guidance system for schools, standards drive decisions about other, more visible, and often controversial educational components, such as curricula, textbooks, and assessments.

While standards typically define essential content knowledge, the Partnership for 21st Century Skills believes standards should go further and also define the skills that contribute to success in modern life, such as life skills, learning and innovation skills, and information, media, and technology skills.

Where did standards come from?

Standards have been an increasingly important part of the educational landscape for the past 25 years. Up until that time, schools for many years had been judged on the basis of *educational inputs*, for example, on the number of books in the library, the number of teachers in a school, or the kinds of degrees those teachers held. The 1983 *A Nation at Risk* report rang alarm bells over the state of U.S. public education, ushering in a new era that sought to measure effectiveness of educational outcomes. In order to measure effectiveness, a system of goals and of ways to measure progress towards those goals was needed. Since that time, states have steadily increased their use of educational standards, a process that has been reinforced and accelerated by the passage of No Child Left Behind in 2001.

What is the current state of standards?

Standards are a potent force in American education today. With the passage of No Child Left Behind, federal money for education is now tied to states' measurement of student achievement. Each state is responsible for determining standards for what constitutes acceptable student performance. Standardized tests, often with high-stakes implications, are then administered to measure how well students perform against those standards.

If the goal were simply for every state to have standards, then the mission has been accomplished, and we could move on to other priorities. If, on the other hand, the goal is having standards that promote the kinds of skills and content knowledge needed to succeed in the 21st century, then we have a long way to go.

Some observers believe the whole effort to attempt to set priorities is doomed to failure. Some critics on both the left and the right object to attempts by “outsiders” or “authorities” to define what their children should learn. Others object to standards defined around grade level, pointing out that children develop at different rates and at different ages. Others oppose educational standards altogether, feeling they can never capture the essence of learning, which they view as unquantifiable. The Partnership for 21st Century Skills, however, believes that we must measure what we value in order to achieve it. And so we call on states to look hard at current standards and ask, *do these standards really represent what our future citizens should know?*

What is the problem with today’s standards?

Today’s accountability systems rely heavily on testing to determine if students have learned what states say they should know. Tests and standards are supposed to work hand in hand. But that alignment is far from reality in most states. As two leaders of the standards movement, Marc Tucker and Judy Coddling (2002/1998), have written, “In many states, the standards themselves are narrow, poorly written, and sometimes just plain wrong. In others, the tests used to measure student progress are only vaguely related to the standards, measure only a small part of what is worth teaching and knowing, are poorly constructed, and, for all these reasons, cannot bear the weight of the consequences that fall on students and teachers when scores are low.”

Part of this misalignment stems from the sheer volume of material that most standards documents deem essential. Because content standards are created by subject matter experts, there is a tendency for each discipline to prioritize its subject area over others. Historians favor history, scientists weigh in on the side of science, and English teachers want students to spend their time reading and writing. When you add it all up, the amount of material crammed into most standards documents is daunting. Researchers at the Mid-Regional Educational Research Lab (MCREL) have determined that it could take as much as 22 years of schooling to adequately cover the content identified in typical standards (Marzano & Kendall, 1998).

If a state’s content standards are too vast, teachers don’t know what to focus on or where to direct their students’ efforts. And this then leads back to the

challenges of testing. Test makers cannot assess everything in the standards, so they often employ a sampling strategy—tests some curricular objectives one year, others the next year, and some never at all. As W. James Popham (2006) observes, "...teachers then are obliged to guess which curricular aims will be assessed in a given year. Not surprisingly, many guess wrong."

These mile-wide, inch-deep standards don't promote student learning either. As Linda Darling-Hammond (2002) points out, U.S. mathematics standards typically cover far more topics than those in countries that have higher levels of achievement on international tests. In Japan, she notes, students might study four or five mathematics concepts intensely over a school year. American students, instead, typically spend a week on a given topic. Deep mastery never occurs, so basic concepts like fractions are repeated year after year, frustrating students and teachers alike.

Yet while they span too many content topics, today's standards fail to address other knowledge and skills that are critical to success in the 21st century. Despite increased accountability and the growth of standards-based reform, there's ample evidence that American students need better preparation for the future than they're getting from today's schools. Business leaders worldwide are speaking out on the need to ensure continued competitiveness in the new global economy. The 2006 "Are They Really Ready to Work?" report showed that employers are concerned about the lack of "applied skills" of those entering the workforce. A recent ACT report (ACT, 2007) identified state standards as a major contributor to the gap between what U.S. high schools are teaching and what colleges want incoming freshman to know. Current standards, according to ACT's president and COO, Cynthia Schmeiser, "are trying to cover too much ground ... As a result, key academic skills needed for success in college get short shrift."

What is the relationship between standards and accountability?

Accountability means holding schools responsible for what they do. Accountability should be more than just a report card, though; it should also be a guidance system that provides useful information to improve teaching and learning. But because tests are the most visible component, for many people, tests have become synonymous with accountability. This leads to what might be called "reform by testing."

It is important to understand that while standards and tests can help define priorities and measure progress, they cannot turn schools around on their own. "Test scores are information for an assessment system — they are not the system itself" (Darling-Hammond, 2002). A test is like a stopwatch that gives an athlete information about her performance. A standard can be likened to her goal of running a 4-hour marathon. Both are useful, but unless accompanied by ample training, good nutrition, and strong coaching, just

having a goal and a stopwatch will not help her to reach her personal best. So it is with standards and tests — they must be accompanied by excellent teaching, solid curricula, and strong organizational supports in order to create a better school system.

True accountability, says Darling-Hammond (2002), occurs when states “use standards and authentic assessments ... to improve teaching and provide needed supports, not as arbiters of rewards and sanctions for students and schools.” Darling-Hammond (2002) has found that well-prepared teachers, well-designed curricula that support critical thinking, and learning environments designed to meet students’ individual needs are key elements in an effective accountability system. All these elements must work together to provide opportunities for what Darling-Hammond calls, “authentic learning, where student actively engage in tasks that that ask them to organize knowledge and create products,” in other words, tasks that develop 21st century skills, and that are measured by 21st century assessments.

What kinds of standards are there?

While state standards are created by educators under the aegis of a state’s department of education, like other policy instruments, their creation is subject to influence by a number of non-governmental forces. Professional disciplinary associations, teacher unions, non-governmental policy groups, and foundations all weigh in on the topic, issuing reports, white papers, and standards frameworks that promote their views. One of the challenges of the current system is the lack of an objective arbiter to weigh the various merits of these disparate views against one another. Most states tend to err on the side of inclusion with the result that far too many subject topics are covered, while important interdisciplinary topics are missing. Below is a list of the different kinds of standards common today.

- **State Standards:** In the United States today, the only standards that have legal clout are those set by state departments of education. The creation of state standards is a complex and often lengthy process, usually involving consultation with educators, discipline-focused associations, policy groups, and other stakeholders. Districts and schools look to these standards to determine their curricula, select textbooks, and set educational priorities.
- **National Standards:** In most developed countries, centralized ministries of education set standards for the whole nation. In the U.S., however, states are responsible for public education. Though some national educational groups may call their standards documents “national,” they are largely guidelines, as no prevailing national standards now exist. As the American population becomes more mobile and the economy more global, many people are calling for the

creation of national standards to consistently define knowledge and skills across the country.

- **Global Standards:** Unlike the U.S., most countries create educational standards at the national level, therefore what global standards exist function largely as policy recommendations or means of comparing student performance across nations. One of the best of these global comparisons is PISA, or Programme in International Student Assessment, created by the Organisation for Economic Co-operation and Development, and administered every three years to representative 15-year-olds in the major industrialized nations. Widely praised for its assessment of analytical, information, and communication skills. PISA provides a comparative measure of how well students in participating countries are prepared for full participation in society.
- **Content Group Standards:** Perhaps the best-known standards documents are those developed by the leading discipline-focused organizations, such as the National Council of Teachers of Mathematics, the National Research Council (science), and the National Council for the Social Studies. These groups produce standards frameworks, which states use to construct their own content standards. These frameworks are designed for local adaptation, and are frequently consulted by educational authorities when developing or revising state standards. Among the standards documents these groups have created are the following:
 - *Standards for Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics and Principles and Standards for School Mathematics (National Council of Teachers of Mathematics)*
 - *Science Education Standards and Taking Science to School: Learning and Teaching Science in Grades K-8 (National Research Council)*
 - *Standards for the English Language Arts (National Council of Teachers of English)*
 - *Standards for the Assessment of Reading and Writing (International Reading Association and National Council of Teachers of English)*
 - *Expectations of Excellence: Curriculum Standards for Social Studies (Council for the Social Studies)*
 - *Information Power: Nine Information Literacy Standards for Student Learning (American Association of School Librarians)*
- **Professional standards:** This category consists of standards created by professional organizations for the purpose of establishing credentials, generally on a voluntary basis. The National Board of Professional Teaching Standards, for instance, has created a rigorous voluntary program to establish high-quality teaching standards and elevate the professionalism of teachers.

While they do not issue independent standards, major educational policy groups and foundations are influential in the standards process as well. The Thomas B. Fordham Foundation, for example, which supports the enforcement of rigorous content standards and assessments, issues an annual report that evaluates individual state standards according to the foundation's traditionalist criteria, and provides comparisons of state performance versus the National Assessment of Educational Process. Achieve, a policy group affiliated with the National Governors Association and leading business groups, is the lead sponsor of the American Diploma Project, a coalition of 29 states dedicated to aligning K–12 curriculum, standards, assessments, and accountability policies with the demands of college and work. The Mid-continent Research for Education and Learning (McREL) is another source of information on standards. In addition to serving as the Regional Education Laboratory for Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota, and Wyoming, McREL has a special focus on standards and has developed a number of publications, resources, and technical services useful by any state.

Why are standards so contested?

Throughout history, Americans have viewed public education as a formative process in which children acquire knowledge as well as values important to the functioning of our democratic society. Yet while most people agree on the importance of public education, they may hold different ideas about the goals of education. Because these understandings are rooted in deeply held convictions, conflicts over educational goals resist easy resolution or compromise.

For example, some believe schools should emphasize rigorous content and enforce high standards for all students, while others believe schools should focus on the diverse needs of the individual child and emphasize cognitive and social processes, sometimes known as “learning how to learn.” Marshall Smith (1995), an early and thoughtful expert on standards, calls attention to the ways this debate can degrade into simple dualisms around the following:

- **Goals** — Should schools strive to teach meaning or focus on skill development?
- **Assessment** — Should students demonstrate learning through performances that demonstrate their mastery of the materials or through short-answer tests?
- **Methods** — Should constructivist (child-centered) or didactic (teacher-centered) instructional practices prevail?
- **Motivation** — Should students be motivated through cooperation or competition?

- **Knowledge** — Should schools focus on basic skills or on higher-order thinking?

We might add to Smith's list one of the oldest educational tugs-of-war – between those who argue for excellence (ensuring high standards and high performance) and those who argue for equity (ensuring fairness and equality of opportunity). With the advent of high standards for all as the governing principal of its educational system, the United States is undertaking one of the boldest of all educational endeavors in history by seeking excellence and equity at the same time.

How do we reconcile these views?

To succeed in the 21st century, all students will need to perform to high standards *and* acquire mastery of core subject material. All students also will need to gain the cognitive and social skills that enable them to deal with the complex problems of our age. The Partnership for 21st Century Skills Framework emphasizes life and career skills, learning and innovations skills, information, media and technology skills as well as core subjects and 21st century themes. Knowing facts without knowing what do with them is pointless. As leading standards scholars Resnik and Hall (1998) put it, "What we know now is that just as facts alone do not constitute true knowledge and thinking power, so thinking processes cannot proceed without something to think about."

Instruction that supports 21st century skills requires a rich variety of teaching methods — direct, project-based, group, self-directed, and everything in between — to ensure that all students achieve their potential. Learning takes place in a rich variety of contexts and should be assessed in a rich variety of ways. Educators, families, testing companies, and policymakers need to work together to develop 21st century assessment systems that enable comparability, uphold equitable and fair standards, promote multiple ways to demonstrate understanding, and provide the resources needed to improve — not just measure — the performance of students, teachers, and schools.

What should 21st century standards look like?

While we must leave the task of standards writing to others, we can outline the principles that states should use in developing 21st century standards to guide our nation's schools.

21st century standards should:

- **Focus on 21st century skills and content.** Students need to know *how* as well as *what* in order to participate fully in the modern world.
- **Give students the context of the topics they are studying.** Students want to know *why* a given topic is relevant, as well as understand *how* to inscribe the topic in an overarching personal construct.
- **Promote deeper engagement with core subjects through analysis and synthesis, not merely descriptive or memorized facts.** In a world of facts at our fingertips, depth of knowledge matters more than breadth.
- **Build understanding across disciplinary categories through 21st century themes.** Meaningful problems are usually complex and boundary-spanning.
- **Engage students with the real world data, tools, and experts they will encounter in college, on the job, and in life.** Students learn best when actively engaged in solving meaningful problems.
- **Go beyond content knowledge to identify other 21st century educational support systems.** Coherent curricula, powerful professional development opportunities, and engaging learning environments are essential to a 21st century education system.
- **Allow for multiple measures of mastery.** The richness of 21st century learning requires a matching range of assessments, from standardized tests to technology-enhanced, classroom, and performance-based assessments.
- **Use accountability as an indicator of progress, rather than a system of sanctions, to guide systemic improvement of students, teachers, and schools.**

How do states create and implement 21st century standards?

- 1) **Expand the conversation.** Invite higher education, business, community leaders, and families into the conversation. Ask them what they expect from your state's students. Prepare your constituencies for a shift in expectations as a result of these new expanded standards.
- 2) **Make hard choices – less can be more.** Endless lists of ever-smaller content must be cut down to size. Fewer topics will enable deeper student understanding. Priorities must center on the skills and knowledge students need for success in the 21st century.
- 3) **Measure what we value.** Create “tests worth teaching to” (Resnick, 1987) that assess the 21st century knowledge and skills that students need and that parents, employers, and society expect of them.

- 4) **Provide good professional development.** As with any new system, educators will need guidance and support in using 21st century standards. Provide authentic and ongoing professional development opportunities for teachers and leaders to use standards to improve teaching and learning in their schools.
- 5) **Nurture 21st century communities.** Create professional learning communities among teachers, school leaders, families, and other stakeholders to promote the change process and provide an environment for adults to experience 21st century learning firsthand.
- 6) **Don't make standards stand-alone.** Strong standards are just one important element of a systemic approach to creating a 21st century educational system. Curricula, leadership structures, instructional practice, and school-family-community relationships must all be considered as essential components in the change process.
- 7) **Partner up.** Building 21st century standards is not as simple as creating basic skills standards (which are not easy either). We are still learning how to define, teach, and assess the essential skills that students need for life in the 21st century. The Partnership for 21st Century Skills doesn't have all the answers, but it can help you frame the questions and connect you with others to create the answers. That's the 21st century way of learning, after all.

Where can states find out more?

Educational Associations and Organizations

- Achieve, Inc.'s American Diploma Project (www.achieve.org)
- American Association for the Advancement of Science (www.aaas.org)
- American Library Association/American Association of School Libraries (www.ala.org)
- International Reading Association (www.reading.org)
- International Society for Technology in Education (www.iste.org)
- National Center for History in the Schools (nchs.ucla.edu)
- National Council for Geographic Education (www.ncge.org)
- National Council for the Social Studies (www.ncss.org)
- National Council of Teachers of English (www.ncte.org)
- National Council of Teachers of Mathematics (www.nctm.org)

- National Research Council (www.nationalacademies.org/nrc)
- National Science Board (www.nsf.gov/nsb)
- National Science Teachers Association (www.nsta.org)
- Mid-Continent Research for Education and Learning (www.mcrel.org/standards/)
- Programme for International Student Assessment (www.pisa.oecd.org)

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