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## Measuring Up in a Flat World

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### **Pioneering groups are reforming curriculum to prepare students for the global digital workforce.**

When President James Monroe was crafting the Monroe Doctrine back in 1823 to prevent foreign interests from encroaching on American territory, the notion of a global economy undeterred by regional boundaries would have been viewed as pure science fiction.

The fact is we're there today. An Internet-enabled society has brought with it a rash of competition that is already posing a threat to our position of economic leadership in the world.

How does the future look? According to U.S. employers, not so bright. In November 2006, we reported results from a survey of 400 of the Fortune 500 companies showing startling skill deficiencies in today's graduates in a range of crucial areas (see "[The Workforce Readiness Crisis](#)."

Graduating students who can compete in the digital age is imperative but remains an uphill battle in the absence of a strong national technology policy, empowered education leadership, and ongoing dialogue involving business, community, government, and educators.

Meantime, in pockets around the country, some states, districts, and schools are moving forward with innovative initiatives that aim to prepare students for success in the global digital workplace.

### **A State Steps Forward**

West Virginia's State Superintendent Steve Paine got a wake up call last year when scores on the state's assessment for No Child Left Behind, which showed increased achievement, were at odds with results of the National Assessment of Educational Progress, a country-wide evaluation tool, which registered no progress. If the state's standards did not measure up to national benchmarks, then neither would West Virginia's students.

Paine knew that successful competition was key. West Virginia students needed to master a broad range of skills to compete successfully with other states and worldwide. Tapping into West Virginia Governor Joe Manchin's commitment to education as the cornerstone for economic development and, with support from the state legislature, Paine launched an initiative to refine and align state standards and assessments.

### **Shaping a New Curriculum**

Using a mixture of traditional, digital technology, and 21st century crucial skills, West Virginia has created its own state-level model for a new core curriculum and is currently in the process of designing assessments to measure the new elements.

"We are revising our objectives and creating a new assessment built around more rigorous content standards," says Brenda Williams, executive director for the state's office of technology. "We've incorporated ICT literacy with learning skills standards and core content." The state development team adopted the International Society for Technology in Education's National Education Technology Standards to define ICT literacy and the Partnership for 21st Century Skills' 21st Century Learning Framework as an implementation strategy.

"The revised content standards are much more focused and defined according to performance task and expectation," says Dr. Jorea Marple, assistant state superintendent of schools for curriculum and instruction. "We actually reduced the number of objectives and made them clearer."

For example, a current reading policy states: "develop an outline using prepared notes to write a paragraph." The proposed policy says: "using student-prepared notes, create an outline and use it to develop a written and/or oral presentation using computer-generated graphics (e.g., tables, charts, graphs)."

The proposed standards have been submitted to researchers around the country for feedback, and the next step is to bring teachers into the review process and to help develop resources. Instructional guides for all four content areas will show teachers how to integrate skills into a definable performance task that they can use to measure acquisition of that skill. The state expects to integrate the new standards and assessments by 2009.

### A Starting Point for Accountability

West Virginia and North Carolina are the first two states to incorporate the Partnership for 21st Century Skills' Framework into their curriculum strategy. The Partnership has so far focused on defining and measuring skills crucial to the workplace of today and of the future (see [www.21stcenturyskills.org](http://www.21stcenturyskills.org)). Its latest initiative helps states, counties, and districts develop learning plans and implementation strategies based on its framework: Six Key Elements of 21st Century Learning (see sidebar). In addition to subject mastery, the framework emphasizes learning and thinking skills; information and communications skills; and the life skills that help students become responsible, productive, and self-directed leaders.

In the age of accountability, what gets measured gets priority in the classroom, and most end-of-the-year (summative) state tests only measure core content acquisition. The Partnership supports a balance of assessments — both high-quality standardized tests used for summative reporting as well as high-quality classroom assessments throughout the year to evaluate progress and soft-skills acquisition.

"Nobody is advocating more assessment," said Ken Kay, president of the Partnership for 21st Century Skills. "The question is, 'What kind of assessment?'" Multiple-choice, true/false, and other standardized assessment tools measure subject mastery rather than thinking and decision-making skills. Kay points to the Council for Aid to Education Collegiate Learning Assessment Project ([www.cae.org/content/pro\\_collegiate.htm](http://www.cae.org/content/pro_collegiate.htm)) as a resource for measurement tools that require complex reasoning and written responses rather than multiple choice questions.

### District Level Adoption

#### Six Key Elements of 21st Century Learning

**Core subjects:** NCLB-identified core subjects.

**21st century content:** emerging content areas such as global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health and wellness awareness.

**Learning and thinking skills:** critical thinking and problem-solving skills, communication, creativity and innovation, collaboration, contextual learning, information and media literacy.

**ICT literacy:** using technology in the context of learning so students know how to learn.

**Life skills:** leadership, ethics, accountability, personal responsibility, self-direction, and so on.

**21st century assessments:** Authentic assessments that measure

Although West Virginia and North Carolina are pioneers in spearheading a state-level push for the integration of 21st century skills, many districts around the country are taking matters into their own hands to raise standards and revise assessments. The Metropolitan School District of Lawrence Township, a medium-size K-12 district (16,000 students) located outside Indianapolis, used the 21st Century Skills Framework to define seven literacies it deems key for its students: technology literacy, basic literacy, information literacy, visual literacy, higher-order thinking skills, self-direction, and cultural competency ([www.ltschools.org](http://www.ltschools.org)).

all five areas of learning.

(For details, go to [www.21stcenturyskills.org](http://www.21stcenturyskills.org).)

Toward that effort, the district ensured that each of its 16 schools has an instructional coach to train teachers to integrate the seven literacies into authentic instruction based on "rigor, relevance, and relationships." After five years of this program, Leona Jameson, director of professional development for the district, estimates that 80 percent of teachers are teaching to the seven literacies.

"Coaches help teachers create a situation for kids to understand and master skills," says Jameson. "They ask teachers, "How is the instruction authentic? How does it meet the standards?" For example, a science teacher using project-based instruction helps students solve a real-world problem to learn the scientific process. The teacher might start with an issue such as water purity and ask students to define what they want to find out and how they will go about doing it. When the project is finished, the students present their results to a panel of experts in the community for authentic feedback and assessment.

An online grading system lets students and parents log in to see grades, attendance, and track their progress. But while the district has the state assessment measures to compare schools, it still lacks the ability to track students beyond graduation to measure the impact on outcomes in higher education and the workplace.

### Global Relevance

Several networks have sprung up to address this lack of articulation between school and work success. The New York-based Asia Society International Studies Schools Network (ISSN) received a Gates Foundation Grant in 2003 to create small secondary schools that prepare students for college or other post-secondary education through knowledge and understanding of world cultures. Beyond that, the ability to communicate in languages other than English, and the capacity to work, live, and learn with people from different cultural and ethnic backgrounds are central goals of the society, which has 10 schools in the United States.

"We created a graduate profile that defines what we believe young people should achieve to be ready for college and global competency," says Executive Director Tony Jackson. This profile maps closely to the Partnership for 21st Century Skills Framework with an added emphasis on cultural awareness and second language proficiency (see "Profile of an International Studies School Graduate," above).

The Asia Society curriculum broadens core subject skills and content for increased relevancy in an international workplace. "For example," says Jackson, "a biology class might focus on the nature of disease, and issues of wellness, exploring the spread of disease, migration trends, and the globalization of transportation, [which increases] human contact."

### Profile of an International Studies School Graduate

#### The Asia Society forms a vision of the 21st century graduate.

- Academically prepared
- Proficient thinker and problem solver
- Culturally aware
- Aware of world events and global dynamics
- Literate for the 21st century
- Collaborative team member
- Effective user of technology
- Socially prepared and culturally sensitive

(For details, visit <http://internationalstudiesschools.org>.)

### Metropolitan Learning Center Expectations for Student Learning

- Effective communication
- Problem solving
- Oral proficiency in a second

The Metropolitan Learning Center (MLC) in Bloomfield, Connecticut, is one member of the Asia Society's network. The public, interdistrict, grade 6-12 magnet school serves 681 students from six school districts in and around Hartford and focuses on the global themes of the society.

language

- Global connections
- Emerging technology
- Content knowledge and enduring understanding
- Essentials learning
- Civic responsibility
- Social skills

The MLC curriculum centers around nine Expectations for Student Learning that go beyond traditional objectives. For example, Effective Communication ESL focuses on the higher-order skills of interpretation, making connections, and taking critical stances to extend textbook content. Rubrics for each ESL define a range of achievement from advanced/exemplary to below basic and include multiple forms of assessment.

(For details, visit [www.crec.org/magnetschools/schools/met.](http://www.crec.org/magnetschools/schools/met.))

Recently recognized as an ISSN exemplary school, MLC has graduated two classes (it was founded in 1999). According to Principal Anne McKernan, almost all of the students have been accepted to college, with at least 80 percent going to four-year schools. And though this is one measure of success, adapting the graduate profile of ISSN to its curriculum and measuring its success beyond college is a work in progress. It created a rubric about global connectedness that defines skills such as being socially prepared and culturally sensitive and is now grappling with how to assess them. To help enable MLC and other schools in its network find ways to measure global skills, ISSN is working with the Consortium for Policy Research in Education ([www.cpre.org](http://www.cpre.org)) to establish assessment tools.

### Success Beyond Graduation

At least one organization, the progressive New Technology Foundation (NTF), which has 25 schools across the country and 10 more in the works, is taking the first steps toward determining the effectiveness of its program in preparing students for higher education and the workplace. A survey of graduates from the first NTF school, New Technology High School in Napa, California, found that 89 percent of the responding alumni attended a two-year or four-year college/university or professional or technical institute. Most (92 percent) of the respondents have applied some or a great deal of what they learned during high school to their postsecondary education or career.

Clearly, more work needs to be done for conclusive evidence of the program's effectiveness for the workplace. But the student-centered nature of the curriculum has been a unique and groundbreaking contribution to public education.

### New Technology High School Learning Outcomes

- Technology literacy
- Citizenship and ethics
- Critical thinking
- Career preparation
- Collaboration
- Written communication
- Oral communication
- Curricular literacy

### Empowering Students

Founded in 1996, New Technology High School is one of the earliest experiments in education focusing on skills needed for the digital world of work. High schools in the New Technology Foundation network offer a truly student-centric learning environment in which the standards are written in language for the students. For example, the learning outcome for oral communication says: "Oral communication skills are very useful in school and are of particular importance when entering and advancing in a career. In an interview and on the job, you will need to present information and ideas effectively." The standard then goes on to define specific objectives.

The learning outcomes are embedded into projects and used for grading. Students create a digital portfolio to demonstrate their progress, including work samples, grades, collaboration scores, and commendations. "They have a report card for each course that shows each learning outcome from the kid's point of view,"

says Bob Pearlman, director of strategic planning for the New Technology Foundation. "This is assessment for learning rather than school accountability." The curricular literacy outcome (one of nine) includes succeeding in standardized tests as one measure of a student's abilities.

"People talk about personalization," says Pearlman, "but that's not possible unless kids are acting on their own juices, have their own tools, and an environment and a framework to orient them."

### **The Next Wave of Reform**

As policy makers consider reauthorization of No Child Left Behind legislation in the coming year, those schools, districts, and states taking the first steps toward integrating 21st century skills represent the pioneers in the next wave of education reform. Issues such as how to define and measure the new essential skills, whether to standardize them nationally, and how to determine their impact on workplace success remain very much works in progress. "It's crucial to teach kids the critical thinking skills they need to adapt and compete in the future," says Paine. "Because borders and boundaries are a thing of the past."

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### **Frameworks for Implementation**

#### **Asia Society International Studies Schools Network**

<http://internationalstudiesschools.org>

#### **ISTE National Educational Technology Standards**

[www.iste.org/template.cfm?Section=NETS](http://www.iste.org/template.cfm?Section=NETS)

#### **New Technology Foundation**

[www.newtechfoundation.org](http://www.newtechfoundation.org)

#### **Partnership for 21st Century Skills**

[www.21stcenturyskills.org](http://www.21stcenturyskills.org)

### **Resources**

#### **Achieve: Rising to the Challenge: Are High School Graduates Prepared for College and Work?**

[www.achieve.org](http://www.achieve.org)

#### **Consortium for Policy Research in Education**

[www.cpre.org](http://www.cpre.org)

#### **Council for Aid to Education Collegiate Learning Assessment Project**

[www.cae.org/content/pro\\_collegiate.htm](http://www.cae.org/content/pro_collegiate.htm)

#### **National Assessment of Educational Progress (NAEP)**

<http://nces.ed.gov/nationsreportcard>

#### **National High School Center: Report on Key Practices and Policies of Consistently Higher Performing High Schools**

<http://betterhighschools.org>