International Benchmarking

Benchmarking to International and 21st Century Skills

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Why this matters

If the United States wants to compete in the worldwide market again, "... it would have to adopt internationally benchmarked standards for educating its students and its workers, because only countries with highly skilled workforces could successfully compete in that market."[1]

As we take stock of our country's education and workforce systems, in addition to pockets of excellence, we see some disturbing trends including:

- High dropout rates
- Low on-time graduation rates
- High unemployment for many high school and college graduates
- Increases in businesses that import skilled workers with education needed in critical areas
- Too few highly qualified science, technology, engineering and mathematics (STEM) teachers
- Too few students graduating in STEM areas and pursuing STEM-related jobs.

In July 2008, the Education Commission of the States (ECS) released *From Competing to Leading: An International Benchmarking Blueprint*.[2] This blueprint was created in response to growing concerns about the quality of education U.S. students are receiving and the lack of workforce competitiveness they face, compared with students around the world.

In addition to increasing concerns about the content being taught in our schools and whether or not it is comparable to the content being taught in other high-performing countries, there is the continuing concern from the business and workforce sector about the critical need for "21st century skills" such as:

- Critical thinking and problem solving
- Collaboration and teamwork
- Leadership
- Initiative and entrepreneurialism
- Effective oral and written communication
- Accessing, evaluating and analyzing information
- Creative thinking
- Real-life application of information.

What is more important — teaching content or teaching skills? Do they have equal value? Should 21st century skills be taught separately or in concert with content?

What's Inside

Education Commission of the States

What have we learned?

"In an economy driven by innovation and knowledge ... in marketplaces engaged in intense competition and constant renewal ... in a world of tremendous opportunities and risks ... in a society facing complex business, political, scientific, technological, health and environmental challenges ... and in diverse workplaces and communities that hinge on collaborative relationships and social networking ... the ingenuity, agility and skills of the American people are crucial to U.S. competitiveness."[3]

We have learned that teaching and assessing both content and 21st century skills are critical for student academic success and success in the workplace. The United States ranks below many other countries in providing a world-class education in mathematics and science.

- Along with scale scores, the 2006 PISA uses six proficiency levels to describe student performance in science literacy, with level 6 being the highest. The United States had greater percentages of students below and at level 1 (25%) than the OECD average percentages on the combined science literacy scale (19%).[4]
- In the United States, only 6% of 8th-grade students reached the advanced benchmark for international mathematics standards compared with: 45% for Chinese Taipei, 40% for the Republic of Korea, 40% for Singapore, 31% for Japan, 10% for Hungary, 8% for England and 8% for the Russian Federation.[5]

In the *Highlights from TIMSS 2007* report, released in December of 2008 by the National Center for Education Statistics, Institute of Education Sciences, data shows that while 4th- and 8th-grade students in the United States have made some gains in math since 1995, students in other countries have made much higher gains in comparison. The size of the gap in math scores between the United States and some other countries is cause for concern.[6]

We have learned that benchmarking to world class standards can result in gains. For example, Massachusetts and Minnesota students have worked to benchmark their mathematics standards to international standards or higher rigor. Students in both states recently participated in a special TIMSS study as if they were individual countries. In math, on average, students scored higher than or equal to students in all countries, except Singapore and Taiwan. In Minnesota, 4th-grade students performing at the advanced level doubled from 9% in 1995 to 18% in 2007 — one of the largest gains.[7]

State Progress

A number of states are in the process of benchmarking to international standards and simultaneously, are addressing and assessing 21st century skills.

Massachusetts, New Hampshire, and Utah

Massachusetts, New Hampshire and Utah have agreed to participate in a high-profile effort to establish pilot programs aimed at creating new approaches based on the recommendations generated in *Tough Choices or Tough Times*.[8] The goal: to become more competitive internationally.

Although states are still refining their approaches, each has announced an initial area of focus:

- Massachusetts plans to create a "statewide master teacher contract" that would include new compensation and benefit packages. Massachusetts state law already requires that its academic standards "... be constructed with due regard to the work and recommendations of national organizations, to the best of similar efforts in other states, and to the level of skills, competencies and knowledge possessed by typical students in the most educationally advanced nations."[9]
- New Hampshire will "begin developing a state board examination system designed to make sure students are ready for community college by the end of 10th grade without the need for remedial instruction. Students who pass those exams would be able to earn a two-year degree while completing their high school diploma at the same time." Students also would have the option of remaining in high school and preparing to enter four-year colleges that have high and rigorous admission standards.[10]
- Utah is focusing on creating "high-performance schools and districts" to implement some of the recommendations from The New Commission on the Skills of the American Workforce. Another focus is on providing high school counselors trained to help students make thoughtful decisions about college or work.[11]

Ohio

Ohio enlisted support from Achieve, Inc. and McKinsey and Company to benchmark Ohio's K-12 system to world-class systems and identify best practice implications for the state. The resulting report on this effort, *Creating a World-Class Education System in Ohio,* was released in 2007 by Achieve, Inc.[12]

Comparing Ohio's K-12 system against high-performing international systems resulted in seven key recommendations, including the need to:

1. Ensure readiness for college and the global economy by continuing to raise Ohio's standards and improve assessments.
2. Empower principals to function as instructional leaders.
3. Align clear expectations for teachers with evaluation, professional development and consequences.
4. Motivate and holistically support students to meet high expectations by addressing their unique needs.
5. Ensure funding is fairly allocated and linked to accountability.
6. Increase effectiveness of school and district ratings and interventions.
7. Provide all students with access to high-quality, publicly-funded school options.

New York

Assessing 21st century skills is a complex and challenging process. Many testing companies and workforce entities have worked for years to create valid and reliable performance assessments to assess these hard-to-measure skills. While progress has occurred on this front, there is still much work to be done. Creating performance-based assessments or tasks is time-consuming and costly, not only to develop, but also to administer and score.

One example of a school system using performance-based assessments can be found in the *New York Performance Standards Consortium*. Students and teachers focus on work that culminates in four or more final projects in core academic areas: 1) a literary analysis, 2) a science experiment and related research project, 3) an extended mathematics problem-solving project and 4) a research paper in social studies demonstrating the use of argument and evidence.

All projects require students to read, think critically, write, discuss, research, construct an argument and publicly present their knowledge. A set of rubrics accompanies each project-related task.

The consortium's Web site is http://performanceassessment.org/performance/index.html.

Consortium-wide, this process of measuring 21st century skills and using data to fuel change has encouraging results:

- Although the percentage of students receiving free or reduced-price lunch in consortium schools (more than 60%) is higher than average for New York City schools, the schools' dropout rate is 9.9%, compared with 19.3% in New York schools overall.[13]
- 91% of consortium students are accepted into college compared with 63% in the city as a whole.
- According to Martha Foote, the consortium's research director, graduates report that once they get to college they are more competent in writing and revising than their classmates are.[14]

ECS Resources

From Competing to Leading – An International Benchmarking Blueprint
Released by the Education Commission of the States in July 2008
www.ecs.org/html/meetingsEvents/NF2008/resources/ECS-InternationalBenchmarking.pdf

International Benchmarking Toolkit
ECS has just released the *International Benchmarking Toolkit*, a follow up to *From Competing to Leading: An International Benchmarking Blueprint*, released in July 2008. The toolkit is aimed at school district and state levels and contains a wide variety of resources, information, tools and policies for use at any level of engagement the benchmarking process.
www.ecs.org/IB/toolkit.html

Other Resources

Podcast: What it takes to transform public education for a global economy
This podcast was recorded at the University of Delaware conference, Delaware Education for a Global Economy: Making Vision 2015 Work, October 2, 2008. Sir Michael Barber explains the need for public education transformation to address the needs of the new global economy. This podcast provides an excellent history of where U.S. education has been and where it now needs to go:
http://www.ums.udel.edu/podcast/watch?c=162.

Benchmarking for Success: Ensuring U.S. Students Receive a World-class Education
This 2008 report by the National Governors Association, the Council of Chief State School Officers, and Achieve, Inc., provides well-documented information on the critical need to benchmark to international standards.
http://www.nga.org/Files/pdf/0812benchmarking.pdf

How the World's Best-Performing School Systems Come Out on Top
This 2007 report by McKinsey & Company studies 25 of the world's school systems, including ten of the top performers. Find out what the high-performing school systems have in common and what tools and strategies they employed.
http://www.mckinsey.com/clientservice/socialsector/resources/pdf/Worlds_School_Systems_Final.pdf.

Where do we go from here?

Benchmarking to international standards and 21st century skills demands attention in several areas simultaneously:

- Developing improved assessments that will accurately measure both content knowledge and skills attainment is important. This type of assessment is more complex to develop and more time consuming to administer — but yields rich, individual student data that can be used by educators to inform and improve instruction to meet every student's educational needs. All states have worked to develop standards and standards-based assessments. This work serves as the foundation for the next step forward to include 21st century skills standards along with content standards. The original assessment work is not to be discarded. It is work upon which to continue building and improving to reflect the knowledge and skills our students need today.
- Schools need ongoing alignment of instruction, curriculum and assessment — all based on alignment to world-class standards. This work must be continuous with dedicated time assigned for professional development to ensure high-quality results.
- Accountability related to teaching effectiveness and student achievement from all teachers and all students should be required. Accountability systems for evaluating and promoting the attainment of highly effective teaching skills must correspond to student accountability systems that ensure all students have the opportunity to meet state, national and global expectations.
- Teacher preparation programs need to be redesigned to address teacher effectiveness in delivering instruction aligned to world class standards and 21st century skills. Teachers need to be prepared to ensure students not only reach proficiency in content, but also in the skills necessary to succeed in postsecondary education, training and the global economy.

To learn more about benchmarking to international standards and 21st century skills, and about becoming involved with these efforts in your own school, district, community or state, please read the ECS Resources and Other Resources listed in the center section of this publication.

Additional key resources that will help you take the next steps in benchmarking to international and 21st century skills are included below:

Engage your students and your colleagues by taking sample ***Dare to Compare*** assessments that have been created by using ***TIMMS***, ***NAEP*** and ***CivEd*** questions to see how you compare to high international standards.
Sample assessments can be found in the following subject areas and grades:

- Math – grades 4, 8 and 12
- Science – grades 4 and 8
- Civics – grades 4, 8 and 9
- Geography – grades 4, 8 and 12
- Economics – grade 12
- History – grades 4, 8 and 12.

http://nces.ed.gov/timss, or http://nces.ed.gov/nceskids/eyk/ (direct link to test).

Other sample assessments come from the ***TIMSS Challenge in Math and Science***. These online assessments provide sample TIMSS assessments in math and science, for grades 3, 4, 7, 8 and 12.
www.edinformatics.com/timss/timss_intro.htm.

Measuring Skills for the 21st Century
This 2008 report by Education Sector makes the case for integrating 21st century skills into teaching and assessment to respond to demands and changes in the workforce and to improve student learning.
http://www.educationsector.org/usr_doc/MeasuringSkills.pdf.

Endnotes

[1] National Center on Education And The Economy, *Tough Choices or Tough Times,* (Washington D.C.: The New Commission on the Skills of the American Workforce, 2007), Executive summary available at: http://www.skillscommission.org/pdf/exec_sum/ToughChoices_EXECSUM.pdf.

[2] Education Commission of the States, *From Competing to Leading: An International Benchmarking Blueprint*, (Denver: ECS, July 2008), http://www.ecs.org/html/meetingsEvents/NF2008/resources/ECS-InternationalBenchmarking.pdf.

[3] Partnership for 21st Century Skills, *21st Century Skills, Education & Competitiveness: A Resource and Policy Guide*, 1 (Tucson: Partnership for 21st Century Skills, 2008), http://www.21stcenturyskills.org/documents/21st_century_skills_education_and_competitiveness_guide.pdf.

[4] Stephane Baldi, Patricia J. Green, Deborah Herget, et al, *Highlights From PISA 2006: Performance of U.S. 15-Year-Old Students in Science and Mathematics Literacy in an International Context*, 11-12 (Washington D.C.: U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, December 2007), http://nces.ed.gov/pubs2008/2008016.pdf.

[5] S. Brenwald, P. Gonzales, L. Jocelyn, et al, *Highlights From TIMSS 2007: Mathematics and Science Achievement of U.S. Fourth- and Eighth-Grade Students in an International Context* (NCES 2009-001), 16 (Washington D.C.: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, 2008), http://nces.ed.gov/pubs2009/2009001.pdf.

[6] Ibid

[7] Ibid

[8] Linda Jacobson, "Three States to Pilot Education Overhaul," *Education Week*, 30 October, 2008, 13, http://www.edweek.org/ew/articles/2008/10/29/11workforce.h28.html?tmp=1650296561.

[9] Massachusetts General Laws Title XII. Education, Chapter 69, 1D.

[10] Jacobson, 13.

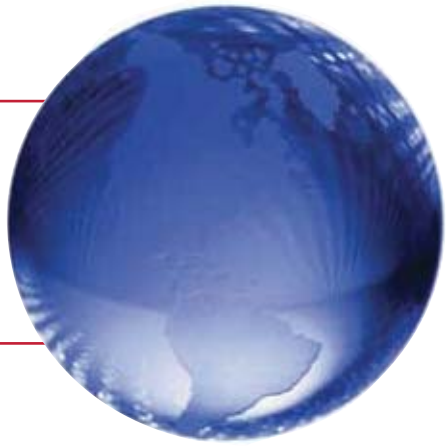
[11] Jacobson, 13.

[12] Achieve, Inc., *Creating a World-Class Education System in Ohio,* Inc., 4 (Washington D.C.: Achieve, Inc., 2007), http://www.achieve.org/files/World_Class_Edu_Ohio_FINAL.pdf.

[13] Martha Foote, "Keeping Accountability Systems Accountable," *Phi Delta Kappan*, 88(5), 2007.

[14] L. Olson, "An Alternative Approach to Gauging Readiness," *Education Week, 25*(33), 28, 2006.

For a complete version of ECS' *International Benchmarking Toolkit*, along with the accompanying Web site, please visit: www.ecs.org/IB/toolkit.html



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