Educating for global competitiveness

Five policies for meeting the education challenge

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To meet global competition, it is often argued, a nation must spend more on education. While that is true, what is even more important is how the money gets spent. We believe there are five guiding principles for evaluating 21st century educational policies.

From Boston to Bangalore to Beijing, education is the engine of economic growth. Whether we are discussing poverty alleviation, anti-terrorism or innovation, the discussion must begin with education.

There is legitimate concern in both Europe and the US that our education systems are not fully preparing students and communities to thrive in today's knowledge-based economy. Indeed, if communities and countries want to prosper on the road ahead, we must support bold, innovative and transformative education policies and practices.

In the political debate over education policy, "bold" often gets translated into "expensive." Certainly, governments must increase their investment in education at all levels – primary through lifelong learning. While endowments and competition are important factors in the success of higher education systems, other success factors include the openness and diversity of institutions, each with very different missions, as well as the freedom and resources for university professors to pursue their academic interests. This culture of innovation and creativity is at the heart of the system's success.

Wrong models for the information age

The economic crisis has slashed endowments and budgets across the board, but the fundamental issue has always been how that money gets spent. With a few shining exceptions, the practical result has been an increasingly mediocre university system. While the US system, with its declining taxpayer support and commensurately skyrocketing tuition, is not an acceptable alternative, what is indisputable is that competition in education creates world-class institutions, just as competition in business creates world-class companies.

Most of our schools in Europe and the US are using an industrial factory model on an agrarian calendar trying to meet the needs of an information age. We are trapped in old models designed for a very different time. Our arguments are too often about finding funding rather than fundamentally redesigning the educational system. We expend too much energy testing the outcomes of outdated models and too little energy trying new technologies.

Governments and stakeholders must examine the policies, programs and practices in education systems and ask the hard questions about whether they are improving or expanding learning and, more importantly, how one even knows. In the 19th century, countries that wanted to compete in the industrial economy founded and funded secondary schools, tertiary schools, community colleges and adult-training courses.

Today, education still matters for economic competitiveness. As the 2008-2009 World Economic Forum recently underlined in its Global Competitiveness Report, "Lack of basic education can therefore become a constraint on business development, with firms finding it difficult to move up the value chain by producing more sophisticated or value-intensive products."

"Quality higher education and training is crucial for economies that want to move up the value chain beyond simple production processes and products. In particular, today's globalizing economy requires economies to nurture pools of well-educated workers who are able to adapt rapidly to their changing environment."

Now, as the creative economy continues to emerge, we need to ask: What now should we initiate and fund?

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Education is struggling to deliver what is needed

Governments, industry and educators on both sides of the Atlantic have raised alarms about the inadequacies of their educational institutions in addressing the needs of the 21st century work force. In the US, many are concerned with the deficiencies in science, technology, math and engineering education; they are calling for expansive legislation to address K-16 education reform, research and immigration issues. Similar concerns exist in most EU countries: Many are struggling to devise and gain the acceptance of reform programs by their educational establishments.

What are the necessary skills for the 21st century?

SAS is a global company with more than 11,000 employees worldwide in more than 400 offices around the globe. In our experiences as business managers and leaders, we've learned that determined students need at least three essential skills to succeed: intelligence, creativity and courage.

There is something about the confluence of these skills that holds the promise of making a difference for students, communities and countries.

How do the three skills relate? Intelligence – and more precisely intelligent analytics – need to be allied to creativity and endowed with courage.

1. Intelligent analytics

Intelligence is not defined in the classic sense; it's defined as the tough-minded tools for living and learning, the ability to absorb information and assess its sources, and the skills to synthesize, analyze and use it to make decisions. More and more schools are looking to build these broader skill sets in their students' use of information from data mining to analytics to decision making. They need this intelligence – particularly analytical and critical-thinking skills – to be able to live in a world awash in information.

The *Harvard Business Review* referred to this skill set as the ability to "compete on analytics." The phrase comes from the work of Tom Davenport at Babson College, who analyzed a host of companies from Amazon.com to Marriott Hotels that are using analytics to make a major difference in how they compete and win in the marketplace.

Some would argue that analytical skills have always been essential for science, technology, engineering and math. To reach the highest levels of each, one needs to be able to analyze data, learn and adapt. Now, because of the daily processing of massive amounts of information, these skills may represent the difference between success and failure.

2. Allied to creativity

Students and citizens also need the creativity skills to be able to process and produce with this information. As social theorist Richard Florida argues, every person has a creative or artistic side. It is unleashing this creativity in the context of analytical ability that holds powerful promise. Unfortunately, this need for creative stimulation often gets lost in the hue and cry to make more scientists and mathematicians.

3. Endowed with courage

The final step, however, is courage to take action; to dive into the sea of transformation that is flooding our worlds. The hard work begins in boldly engaging difficult conversations, involving broad constituencies and moving toward thoughtful solutions. In the IT business, we know that we will fail without a hard turn in R&D, a change in sales strategy or a new approach to cost containment.

In the US, the Partnership for 21st Century Skills has developed a vision for learning in which students focus on core subjects including math, science and foreign language. In addition, other content must be included and cover topics such as global awareness, finance, economics, business and entrepreneurial literacy. There needs to be a strong emphasis on learning and thinking skills – critical thinking and problem solving: communication, creativity and innovation, collaboration, contextual learning, information and media literacy, e-skills and life skills.

As part of teaching critical thinking and problem solving, as well as fostering entrepreneurial literacy, educators must teach young people to take risks. And policymakers have to create a landscape that rewards those who take risks and makes failure an acceptable cultural and financial option.

Policies for meeting the challenge

We need to take a step back and focus on policy and practice that will build a lifelong learning system for the 21st century. Our policy must be focused on the goals of student access and success, workforce readiness, research and development infrastructure, global literacy and essential disciplines.

Moreover, we have to throw out our attachments to the way we have always done things in education. Our focus on practice needs to be driven by two tough-minded questions: (1) Does this practice improve or advance learning? (2) How do we know?

Five priorities will help deliver the desired answers:

1. Ensure access to education and training:

- Make education and training widely available anytime and anywhere (on-site, online and just-in-time). We need to be open to supporting new models, different providers, and broad-based primary, secondary, postsecondary and business partnerships that increase educational access.
- Communities and policymakers must foster lifelong learning by providing flexible and varied educational opportunities, and access to the necessary knowledge and skills at any point in an individual's lifetime.
- Invest in pre-primary education programs, which have historically provided the best return on investment. The earlier a child learns to read, the better. All other learning hinges on the development of that one skill.
- Ensure access to higher education for all by providing the economically disadvantaged with government-supported financial aid.
- Ease transferability of students in higher education – both from country to country and from discipline to discipline.

2. Continually assess education performance in relation to goals, that is, learning and earning:

- Create strong accountability and transparency in our education systems.
- Put accountability systems in place that will provide educators with insights on what happens to students after they complete their educations, transfer to other universities or take jobs. Discern whether these students have the necessary skills to gain and maintain employment.
- Support policy that rewards evidence-based educational transformation.
- Enable governments and educators with the tools that will allow them to gather data, analyze that data and create policies based on firm knowledge of which policies will create desired outcomes.

3. Implement consistent policies that will ensure workforce availability:

- Enact a "human capital" tax credit for employers who provide training and education for workers. This will have the dual effect of lowering the public cost for training and education while providing an incentive to employers to commit to lifelong learning.
- Develop a curriculum that supports essential disciplines like science, technology and engineering while addressing the emerging need for global literacy.
- Provide scholarship assistance, teacher institutes and mentoring programs to encourage more participation from those with experience in business or civil society to become teachers.
- Create a labor policy that has enough flexibility to allow for necessary worker redeployment.
- Provide a tax structure that rewards companies for engaging in R&D activities.

4. Advance innovative research and development:

- Concentrate government funding on basic research.
- Ensure research results are open and available to the public through online databases that would allow access by companies and academics alike.
- Allow university researchers to license and retain the intellectual property they create in order to found a commercial venture.

5. Promote social, state and global business/education partnerships:

- Work together to enhance the use of technology in learning and to develop the information technology skills necessary for the workplace. Ensure that computer and technology skills become a part of the education and lifelong learning curricula.
- Provide incentives for business to participate in school mentor programs, "adopt a school" programs or community-based initiatives.
- Embrace best practices from other regions of the world that have hard data to substantiate results.
- Foster a culture of innovation and reward risk-taking at all levels.

Educate for creativity

We must help in creating innovative educational institutions of the 21st century where technology infuses every part of the curriculum, where creativity and in-

novation are fostered in every discipline, and where students and educators are constantly striving to solve problems through original thinking.

It is the creation of new ideas and solutions that, ultimately, will lead to new industries and jobs for the 21st century. The productivity and competitiveness of every nation depend on it.

Research suggests that spending on preprimary education brings the greatest return on investment, followed closely by spending on primary schools. But if money were the answer, we would have already been able to calculate how much it would cost to optimally educate a student.

Our area of focus needs to be on fostering and growing creative capital. When we talk about creative capital, we're talking about people. Creative employees pioneer new technologies, give birth to new industries and power economic growth. Today, as we talk about maximizing performance, be it educational or corporate, we must keep in mind that people – and the creative capital they represent – are a critical part of the equation. The creative economy is here to stay, and societies that best educate for creativity will have a crucial advantage in the ever-increasing competition for global talent.

ONLINE
SAS education customers:
www.sas.com/success/indexByIndustry.html#0800

Outspoken on education reform, SAS founder and CEO **Jim Goodnight** sees education as critical to the success of people, organizations and nations. Goodnight holds a doctorate in statistics from North Carolina State University, where he was a faculty member from 1972 to 1976. His passion for learning has since led him to endow several NCSU professorships and make education the focus of SAS' philanthropy.

An award-winning leader, author, speaker, and consultant, Catalyze Learning International CEO **Mark David Milliron**, has championed innovation and excellence in education nationally and internationally. Milliron previously served as Vice President of the Education Practice with SAS.