

A 21st century education for 21st century students

This story on the Web

- [Flash page](#)
- [Non-Flash page](#)

IBM in the industry

- [Solutions, news, research](#)

Open education

- [Overview and resources](#)
- [New report: IBM Open Framework](#)

Virtual Schools

-  [Shared services in the public sector](#)

IBM programs in this story

- [SSME](#)
-  [Transition to Teaching](#)

Stay on top of innovation

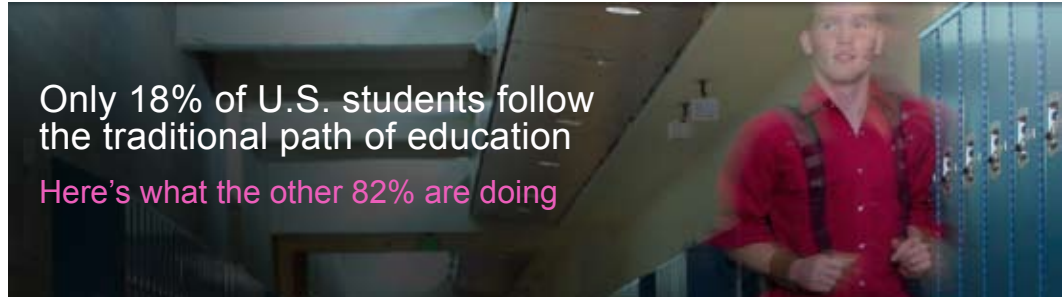
- [More Ideas from IBM](#)

Insights and resources for

- [CIOs](#)
- [Business Executives](#)

Syndication

- [Subscribe via RSS](#)
- [Help with subscribing](#)



Only 18% of U.S. students follow the traditional path of education

Here's what the other 82% are doing

SAME OLD SCHOOL, VERY NEW LEARNING MODELS

Around the world, students are heads down—in schools, colleges and universities. While the institutions may look the same, the model for teaching, learning and skills development is changing before our eyes.

Singular path evolves to multiple choice

For many in the United States, education was once a lock-step march from primary to secondary school, on to college or university, and finally into the workforce. But the statistics today tell a different story:

- One third of high school freshmen will not graduate on time¹
- The U.S. ranks 13th out of 35 countries in terms of high school completion²

In higher education, less than 20% of students will graduate with:

- An associate's degree within three years or
- A bachelor's degree within six years³

A vast majority of students—some 82%—are choosing alternate education routes such as online classes, informal GED programs and virtual schools for their vocational preparation.

How do you quantify an education landscape that is becoming more complex and fragmented at a time when the demand for skilled graduates is growing?

1,3 "American Higher Education: How Does It Measure Up for the 21st Century?", The National Center for Public Policy and Higher Education, Milken Institute (May 2006)

2 Organisation for Economic Co-operation and Development, "Education-at-a-Glance", 2007

EMBRACE THE CHAOS

Improving schools around the world is one of IBM's top social priorities. We believe it is critical to enable the growing number of non-traditional paths of learning so they can become the norm, offering students every possible opportunity to develop the skills they will need to succeed.

Our vision for the next generation of learning is that of an Educational Continuum that provides diverse, interconnected learning experiences throughout a person's entire life-time, starting before kindergarten.

Learning how to share

Such interconnection can be achieved only if the education industry is based on open standards, with the ability for all institutions to share student data, learning programs and technology resources.

Currently more than 10% of educational institutions worldwide use open system technologies, a rate that's growing at about 12% per year.⁴

"The quality of education we deliver is a key determinant of the future we can expect... It's central to world peace, prosperity, and civic development. The more we share, the better the quality of education we'll be able to deliver," said Margaret Spellings, U.S. Secretary of Education, in a 2008 address to U.S. and international college presidents.

4 IDC, "Worldwide Software 2007-2011 Forecast Summary," July 2007

THE STATE'S VIEW OF A STUDENT

Traditional educational tracking and reporting systems are no longer adequate to reflect these non-traditional paths of learning. But data systems are evolving. Through our OPEN-ED framework, IBM is helping states to develop business intelligence systems that offer a 360-degree view of a student and his academic, social services and health records.

In January, **California**, with the largest student population in the U.S. (six million plus), chose IBM to develop a data system that will collect, maintain and report statewide information about pupil assessments, enrollment, teacher assignments and other elements that will be used to track graduation and dropout rates, provide appropriate student services and better measure student performance over time. Each public school student now has an assigned Statewide Student Identifier number that enables longitudinal tracking.

IBM and Cognos are working with **Texas'** Region 10 Education Service Center on a data/business intelligence system to gain insights and do comparative analysis of its academic programs. Taking it one step further, Region 10 is planning to share student data with the University of Texas at Dallas to provide a single view of students as they transition from K-12 to higher education. It would provide feedback to school districts about the success of their graduates.

When report cards fail

Kids today routinely shoot and publish videos on YouTube, maintain multimedia blogs and create their own Web sites. A hard-copy report card seems like a relic from another era. While state governments and educational systems are trying to manage data records across a multitude of systems over time, students themselves are looking for ways to create a digital record of their accomplishments.

An ePortfolio allows a student to capture sample work such as an animation video or radio interview, aggregate and manage these artifacts, and “publish” public views of the portfolio depending on the recipient. An ePortfolio can legitimize some of the non-traditional paths of learning, providing proof of accomplishment.

Rhode Island is one of the first states to mandate an e-Portfolio for every high school student. IBM and rSmart are helping the state implement a system using an open source application, Sakai, and its ePortfolio capabilities.

LINKING THE CLASSROOM TO THE WORKPLACE

The demand for skilled graduates in business, technology and social sciences is intensifying. Throughout the next decade, the U.S., Europe, Japan, China and India will face a shortfall of 32 million technically specialized professionals.⁵

The skills profile for these workers in an Internet-driven service economy assumes a competence in technology. But creativity and innovation top the list, which also includes critical thinking, digital citizenship and information retrieval.⁶

Finding your inner mathematician

IBM is helping school systems broaden basic science, math, engineering and technology (STEM) skills at every age with resources for teachers to integrate STEM into their curricula.

The **Transition to Teaching** program addresses a critical shortage of math and science teachers by supporting our most experienced employees—approximately 100 today—to become fully accredited teachers in their local communities after they leave the company. Six graduates are already teaching in the classroom.

Working with higher education institutions around the world, we’re developing the **Services Science Management and Engineering** (SSME) discipline, the next generation of computer science.

5,6 National Technology Education Standards, 2007

VIRTUAL SCHOOLS FILL REAL GAPS

States are increasingly looking to create virtual schools in a shared-services model to consolidate e-learning programs for students. IBM is working with **North Carolina Virtual Public School** to offer high school students courses online that aren’t available in their local schools. Students can enroll in advanced placement and foreign language classes, and even in community and state college courses so they can graduate high

school with college credits under their belt. If they fail a course, they can repeat it online. Online learning can fill in curriculum gaps and offer students more routes to graduation.

Outside the U.S., online learning is helping to cross the economic divide in China. **Blue Sky**, China's first learning portal for basic education, runs on pure open source technology. IBM is rolling out the platform to 15 primary and middle schools. It provides tools for distance learning and facilitates the creation and sharing of content. The goal is to close the gap between the well-developed Eastern region and rural Western China, so that "under the same Blue Sky we have the same opportunities."

Imagining a 21st century education

- Every student's record and portfolio of work follows him from school to the work place and back
 - People routinely learn outside the classroom from a variety of education providers
 - Governmental leadership has the data and tools to align learning programs with workforce development initiatives
 - Lifelong learning is integral to careers
 - Services, processes and data are shared securely between educational systems
-



SEND US YOUR FEEDBACK:

We're interested in hearing what you think about this article. Do you have a question, comment, suggestion or story idea to pass along? Please e-mail [Ideas from IBM](#).

IBM Corporation

New Orchard Road, Armonk, NY 10504