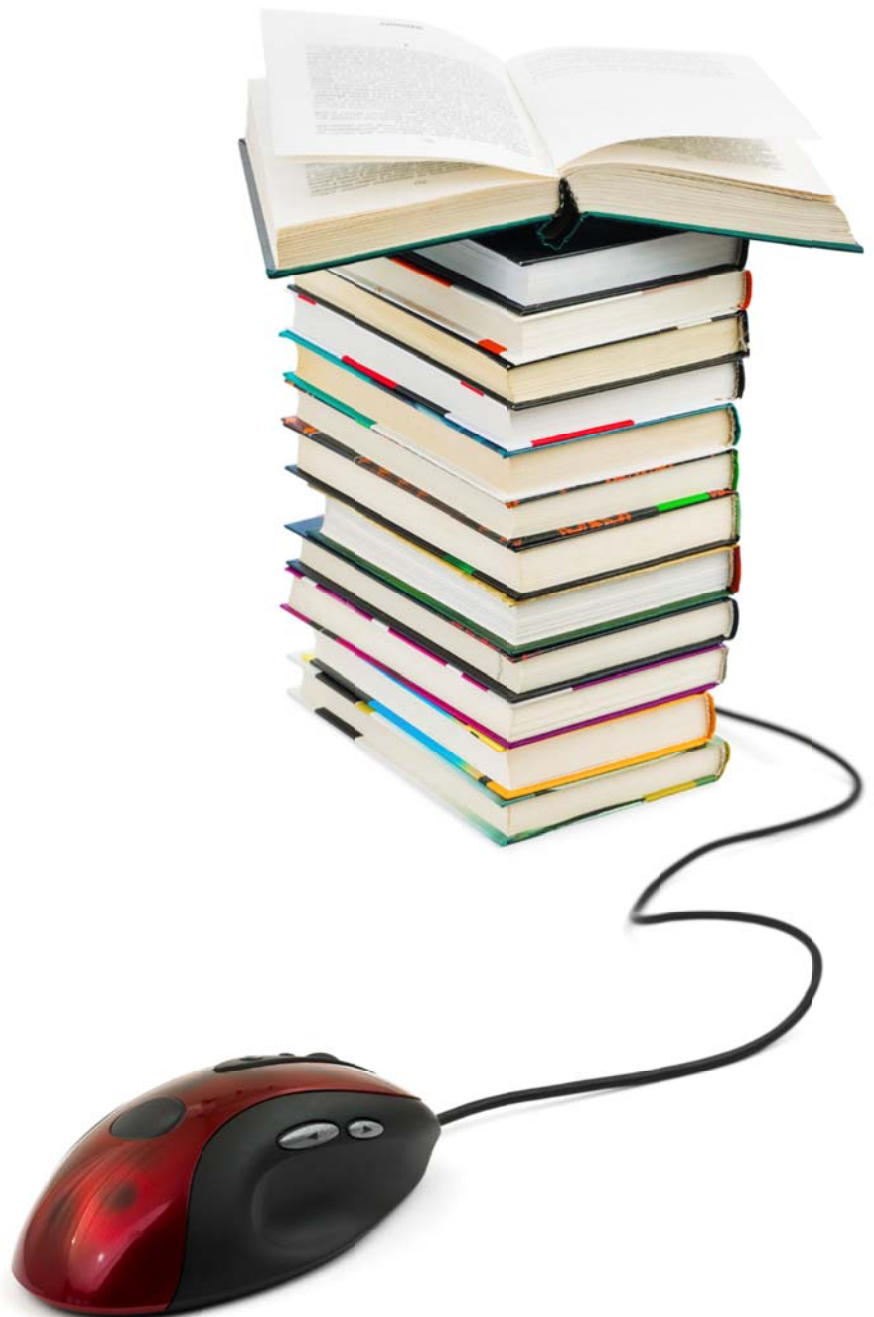


The changing face of education: Emerging tools provide the ability to access, manage, and share digital educational content

By Stephan K. Thieringer
President & CEO
AcrossWorld Education



The great Bengali poet Rabindranath Tagore once famously cautioned, “Don’t limit a child to your own learning, for he was born in another time.” His words resonate clearly in an age characterized by students that live in a digital world - and teachers that are beginning to as well. Embracing his philosophy in this modern setting will lead to a less expensive, higher quality, and more open environment that brings great potential in terms of content, culture, and spirit of mind.

This potential is being brought to fruition, as educators and students are gaining the ability to easily access, manage, and share digital materials. As the number of users collaborating around content continues to increase, the growing network will provide exponential acceleration that will change the face of education.

Three out of every four high school and middle school students in the United States now have a smart phone¹, and forward-thinking schools such as Hudson High School in New York City have recognized the digital trend by abandoning textbooks in favor of Kindles, iPads, and laptops. In Dedham, Massachusetts, the school system wants to hand out netbooks for students to use throughout high school and even after graduation.² And under one proposal in Florida, all textbooks for students in K-12 will be replaced by “electronic materials” by 2015.³

Against this backdrop, the education industry has attempted to move closer to a collaborative climate, which requires adopting more comprehensive technology to bring content and users together.

Multiple repositories that improve the capability to search for and share materials have contributed important building blocks, but have in many ways duplicated efforts and have fallen short of creating a meaningful community. The leap to a more accessible, easy to navigate complete delivery infrastructure requires a collaborative, blended environment that allows educators to explore new boundaries without wasting time and further replicating efforts. The adoption of national standards enables that approach, and momentum is gathering with 40 states now signed on to the Common Core Standards. Easily discovering the resources most relevant to their needs, improving upon them using their own pedagogical style and materials, and sharing the new iteration with peers on a global platform will bring the “wisdom

of the crowd” to bear on education and allow the best ideas to rise to the top for others to adopt in the context of their own classrooms.

From risk to reward

Nearly 30 years after the landmark report “A Nation at Risk: The Imperative for Educational Reform,” the United States is failing to prepare too many of its students to be competitive in a global economy.

At the time of the report, the U.S. led the world in college completion rates. Today, the former frontrunner ranks 12th among 36 developed nations in the number of 25- to 34-year-olds with college degrees.⁴ Canada, Korea, and Russia now lead the world, while China, India, and other emerging economies are wasting no time in filling as many classrooms as possible - often in highly creative and innovative ways.

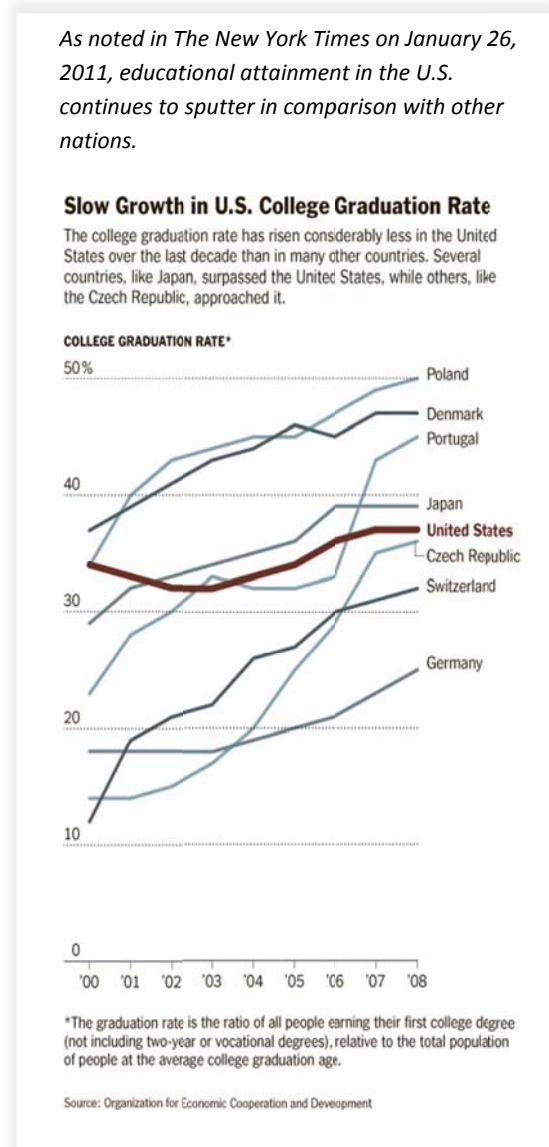
The current political and social milieus make large structural changes difficult, but the move to digital content is rapidly being adopted as a first line of offense in the battle to reclaim ingenuity.

There are three crucial steps that the educational world must embrace to initiate meaningful change in education:

1. Sharing the wealth of knowledge

Across the U.S. and around the world, cooperative networks of schools are sharing curriculum, lesson plans, and other content in the nascent migration to Open Educational Resources (OER). For a fraction of the cost of purchasing expensive textbooks and other materials, schools can connect, collaborate, and innovate by maximizing resources that fellow educators have found effective.

But just as the Internet was an overwhelming, disorganized chasm of information prior to advanced search tools, OER is merely a collection of materials without a platform that enables effective searching and sorting. Educators must put to use tools that are properly developed, user-friendly and that enable them to quickly “find & discover” educational assets. They will



then benefit from the ability to discover assets at a level much more granular than in the past, accessing specific, targeted materials that will contribute to their classroom. Instead of stale lessons being delivered year after year, students will enjoy constantly refreshed material enhanced by peer reviews.

The review process among immediate colleagues may already be a staple of good practice, but the potential is expanding as states continue to adopt the Common Core Standards. This lays the foundation for collaboration beyond school buildings and even beyond state borders; the technology will be the tie that binds these knowledge networks of schools.

2. Going beyond the search: creating the new curricula

The open source movement fundamentally altered the world of IT, and education is now on the cusp of a similar transition. Using this technology, school systems and teachers must have access to a simple and effective mechanism to gain access to full courses, course modules, syllabi, lectures, streaming videos – material that is virtually without limits or borders. After one teacher posts a lesson plan that was successful in their classroom, others can analyze, critique, revise, and recommend the plan to others.

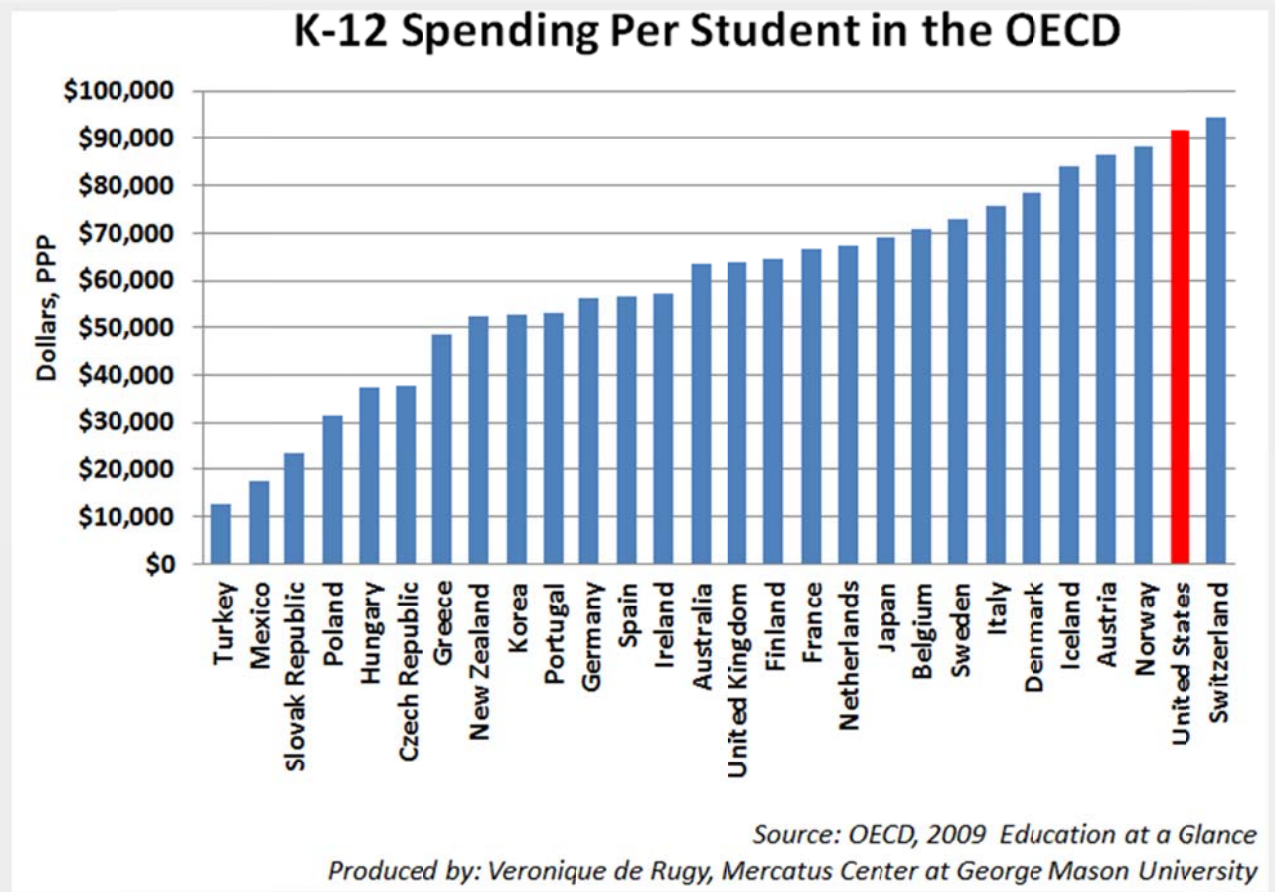
As a jeweler may use a variety of disparate yet complementary stones to create a piece of artwork that is far more than the sum of its parts, so too should teachers be able to mix and match from freely available educational resources. Many materials a teacher has used previously – including those found on YouTube, Wikipedia, and elsewhere on Web 2.0 sites – can be combined with those discovered in the virtual OER marketplace.

In addition, appropriate resources can be “pushed” to educators based on individual histories and preferences including subject matter, quality, and assets frequently used and recommended by peers. A well-organized, user-friendly platform to capture content and support continuously evolving curricula will bring a new spirit of innovation and collaboration to the classroom.

3. Beating the budget

Education is expensive, and in an era of recession-induced budget cuts and rising demands, schools are continually being asked to do more with less. The trend is underscored by recent developments in Wisconsin, Rhode Island, Texas, and around the nation, where school systems experienced massive cutbacks.

Districts must seek ways to restructure their budgets, and OER should play an important role. New technology will yield significant savings by replacing expensive textbooks – some of which may be outdated the moment they are published – with resources that are constantly being updated, refined, and improved upon to provide curricula and lessons from some of the world’s



leading minds.⁵

Textbooks are so costly that many districts classify them as a capital expense alongside a new roof, boiler, or tennis court. A set of textbooks teaching the crucial STEM skills - science, math, engineering, and technology - can run between \$600 and \$800 per student, with a lifespan of only a few years.

A district the size of the Boston Public Schools must spend between \$8.4 million and \$11.2 million per year just to keep current STEM skills textbooks in the backpacks of their 56,000 students⁶, and that is before factoring in supplemental materials such as lab supplies. The cost of implementing and using OER, on the other hand, is significantly less and becomes a sound long term investment that is flexible enough to evolve with the times.

Cross-cultural collaboration

Collaboration using digital content is gaining traction in a number of areas, and it is worth noting the role it may play in one of the fastest growing educational systems in the world.

India cannot build schools fast enough. As one of the world’s most promising economies, the region – along with other frontier, developing, and even mature nations – recognizes that

education is a leading, if not the dominant, socio-economic driver. But along with a lack of physical structures to house the schools, India suffers from a severe lack of resources to fill them. Teachers are not properly trained, books are scarce, and curricula and lesson plans are not sufficient to meet the demand.

OER is being deployed as an instrumental piece of the puzzle. The Public Health Foundation of India (PHFI), for example, built and operates three Indian Institutes of Public Health around the nation and has plans to raise that number to 14 within six years.

PHFI is making its mark in large part due to its innovative approach to sharing information, best practices, and curricula through OER. While the effort is only five years old, its mission and methods are recognized as having tremendous potential. The foundation is backed by the World Bank, World Health Organization, Bill and Melinda Gates Foundation, and the Wellcome Trust, and has academic links to 30 international schools of public health around the world.

The future of education

It is an exciting time to be in an American classroom. With billions of dollars from the “Race to the Top” initiative and private philanthropy pouring into schools, education officials at all levels must drive innovation at a pace rarely seen before.

The timing is critical. Today’s students are tomorrow’s workforce, and they will be competing directly with geopolitical rivals. If schools in India and China are taking advantage of the tremendous educational and cost benefits provided by OER, the challenge is not about whether American schools can afford to adopt these approaches. It is rather about whether they can afford not to -- and that is a question every educator should ask of their administration, their colleagues, and of the students themselves.

Otherwise, they relegate their students to an education limited by the constraints of the 20th century in a world that is desperately calling out for citizens with 21st century skills. Children in the cosmopolitan cities of the world have always had access to great works of art, science, and the humanities in their own backyards. Today, children in smaller and rural communities must have the same opportunity; rich, beautiful, engaging educational materials that can be accessed in seconds.

The use of these modern tools can shine an entirely new light on Tagore’s teaching methods. Knowing that experience is the best teacher, he would teach his students about trees while sitting on grass mats in an orchard. Educators of today can and should bring that philosophy back.

Examining the vast secrets of the cosmos on paper, for example, pales in comparison to watching a live feed from the Hubble telescope. When students can enjoy more direct access to the multitudinous beauty of the Horsehead Nebula, it engages them in a manner far more inspirational than even the most stimulating astronomy text. The technology exists today on a

scale and budget that makes it possible for each individual to capture that level of excitement about the part they play in the classroom.

Indeed, as OER brings a more collaborative spirit to the system, educators and students will likely find their roles shifting to accommodate that level of engagement. Shared content will point schools towards a culture of learning through facilitation, turning education from a linear system to a relationship in which students are mapping their own course. Educators will become facilitators empowered by the tools with which they work, and they will steer children through the world of accessible resources. The proverbial gauntlet has been thrown by the educational demands of a global market -- the resources exist, the technology exists, and teachers and students alike are poised to lead the next generation to an educational renaissance.

About the Author

Stephan K. Thieringer is the president & CEO of AcrossWorld Education, an international education company that empowers institutions and organizations to harness the value of Open Educational Resources. Prior to co-founding AcrossWorld, Mr. Thieringer was the COO of Giunti Labs.

Thieringer was a finalist of the prestigious Massachusetts Technology Leadership Council's "CXO of the year" award 2008. A leader and visionary in the movement for ubiquitous information access, Thieringer is a global strategy advisor of The Open Knowledge Initiative™ (O.K.I.), an executive committee member of the Open Educational Resources in Cancer consortia (OERC), as well as a member of the U.S.-India Business Council Executive Committee for Education. Mr. Thieringer also serves on the academic advisory board for Notehall India.

A frequent and popular speaker on topics related to knowledge and information access, digital asset management, and mobile learning, Thieringer has been featured in, and has contributed to, a number of regional, national and global business publications and educational journals nationwide and globally. Most recently, in February 2011, Mr. Thieringer was a featured speaker at INFOCOM 10-11 in Kolkata, India alongside key delegates from the education and communication sectors. The U.S. India Business Council's Higher Education mission on occasion of President Obama concluded in Delhi in November 2010 which included Thieringer as an active leader. Stephan resides in Massachusetts and is a citizen of Germany. He received his MBA from the University of Lucerne (Switzerland) in 1986, and holds a *honoris causa* doctorate in education.

Endnotes

¹ *The smart-phone, safe-school paradox*, The Times of Trenton, Michael Nitti, January 30, 2011.

² *School goal: netbooks for students*, Boston.com, Johanna Saltz, December 2, 2010.

³ *Florida looks at taking school textbooks completely digital by 2015*, St. Petersburg Times, Marlene Sokol and Jeffrey Solochek, February 17, 2011.

⁴ *Once a Leader, U.S. Lags in College Degrees*, New York Times, Tamar Lewin, July 23, 2010.

⁵ See, for example, the Massachusetts Institute of Technology's Open Courseware Initiative.

⁶ *Boston Public Schools at a Glance 2009–2010*, Boston Public Schools.