digital innovations in education
implications for students, teachers and schools

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presentation to the ‘International Symposium of School Education’
August 2013
Colegio de Bachilleres del Estado de Chihuahua
Chihuahua, Mexico
idealismo
realismo
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THE EDUCATION CRISIS

- 30% of students in the U.S. fail out of high school
- 33% of U.S. college students require remediation
- 46% of U.S. college students do not graduate

1 STUDENT DROPS OUT OF HIGH SCHOOL EVERY 26 SECONDS.
THE CHANGING LANDSCAPE

From the one-size-fits-all model and unprepared students...

...to technology-enabled solutions customized for each student.
THE FUTURE CLASSROOM

The education community is already adopting new technologies which will work together to result in more effective learning solutions.
innovation
transformation
disruption
“The internet isn’t just a powerful tool for communication. It’s arguably the most potent force for learning and innovation since the printing press. And it’s at the center of what is possibly America’s mightiest struggle and greatest opportunity: how to reimagine education for a transformative era”

(Jeb Bush & Rosario Dawson 2013)
Are Schools Getting a Big Enough Bang for Their Education Technology Buck?

By Ulrich Boser  June 14, 2013

Whether it’s a mom-and-pop coffee shop, a Fortune 500 firm, or a health care nonprofit, well-run organizations employ technology as a way to improve their performance. These businesses and organizations think of digital technology as part of larger efforts to boost productivity and improve outcomes. For American companies, leveraging digital solutions has long been a way of doing business, and over the past sixty years, the approach has resulted in average worker productivity climbing by more than 2 percent a year due in large measure to improvements in equipment, computers, and other high-tech solutions.

Educators, however, generally do not take this approach to technology. Far too often, school leaders fail to consider how technology might dramatically improve teaching and learning, and schools frequently acquire digital devices without discrete learning goals and ultimately use these devices in ways that fail to adequately serve students, schools, or taxpayers.

Because of a growing debate concerning spending on education technology, CAP decided to look closely at the issue of how students used technology and the return that educators were getting on their technology investment. In conducting this examination, we relied on one of the richest sources of national student survey data—the National Assessment of Educational Progress, or NAEP—and conducted an analysis of the 2009 and 2011 background surveys. Known as the Nation’s Report Card, the NAEP assessments are administered every two years by the U.S. Department of Education’s National Center for Education Statistics, and the exams serve as a way to benchmark student performance. In addition, we conducted a state-by-state survey of the websites of state departments of education during the first two weeks of February 2013 to see if states had conducted any evaluation of the return on their school-technology investment.
Figure 4: Student uses of ICT

- Find information on the Internet: 36%
- Practice routine skills and procedures: 26%
- Take tests or turn in homework: 17%
- Write or edit stories, reports, or...: 15%
- Analyze data or information: 15%
- Access class resources or online...: 12%
- Collaborate with peers on learning...: 9%
- Create multimedia presentations: 6%
- Use simulations or animations: 5%
- Work with others from outside class: 5%
- Develop simulations or animations: 3%
“computer meets classroom – classroom wins”

(Larry Cuban 1993)
Ancient Greece
The spread of the Greek colonies at 550 BC
* what is actually taking place here?
* what is ‘new’ here? ... what is the same?
* what are the unintended consequences?
* what does this mean for education in the future?
promise#1

‘any time, any place, any pace’ education
promise#2

a ‘new culture of learning’
Connected Learning
Equitable, Social, and Participatory

Connected learning is a model of learning that holds out the possibility of reimagining the experience of education in the information age. It draws on the power of today’s technology to fuse young people’s interests, friendships, and academic achievement through experiences laced with hands-on production, shared purpose, and open networks.

Production Centered
Connected learning prizes the learning that comes from actively producing, creating, experimenting, and designing, because it promotes skills and dispositions for lifelong learning, and for making meaningful contributions to today’s rapidly changing work and social conditions.

Peers
Connected learning thrives in a socially meaningful and knowledge-rich ecology of ongoing participation, self-expression, and recognition. In their everyday exchanges with peers and friends, young people fluidly contribute, share, and give feedback. Powered with possibilities made available by today’s social media, this peer culture can produce learning that’s engaging and powerful.

Interests
Interests foster the drive to gain knowledge and expertise. Research has repeatedly shown that when the topic is personally interesting and relevant, learners achieve much higher-order learning outcomes. Connected learning views interests and passions that are developed in a social context as essential elements.

Openly Networked
Connected learning environments link learning in school, home, and community, because learners achieve best when their learning is reinforced and supported in multiple settings. Online platforms can make learning resources abundant, accessible, and visible across all learner settings.

Shared Purpose
Today’s social media and web-based communities provide unprecedented opportunities for caring adults, teachers, parents, learners, and their peers to share interests and contribute to a common purpose. The potential of cross-generational learning and connection unfolds when centered on common goals.

Academic
Connected learning recognizes the importance of academic success for intellectual growth and as an avenue towards economic and political opportunity. When academic studies and institutions draw from and connect to young people’s peer culture, communities, and interest-driven pursuits, learners flourish and realize their true potential.

Active Relevant Real-World Effective Hands-On Networked Innovative Personal Transformative
promise#3 mass ‘connectivity’ between people and information
promise#4

personalisation / individualisation of learning
**School 2.0**

Welcome to the Neighborhood: There is no one path to the school of tomorrow. Technology is rapidly breaking down school walls and letting the world in. Harnessing it is the key in building tomorrow’s school and students. Integrating it into the learning ecosystem is everyone’s responsibility, and will ensure that our students have multiple paths to success.

I’ll get him set up on the podcast. I heard some things I’ll apply in my class.

I can help you set up your classroom blog.

Have you seen this new project? I think you’ll like it.

Our guest expert on nanotechnology from the ACME Co. has just logged in to our virtual classroom. Let’s start our video chat.

Did you hear back from your online mentor?

Yeah, she took a look at my digital portfolio and offered me an internship.

I’ll set this up for your special education students.

Great, I’ll update their online IEPs.

My students are learning languages from around the globe. Talk about authentic learning!

Let’s bring up the feed from the whiteboard along side the camera view. This way our students in the remote site can see the presentations as well.
Welcome to Pearson 21
Pearson 21 is designed to foster understanding and ongoing discussion about 21st century learning. Its purpose is to spur ideas and offer solutions that prepare students for competition in today's global marketplace.

In Practice
See the different ways 21st century learning is taking place in classrooms across the country. Learn more

News & Events
What's new in the world of 21st century learning? Learn more

Expert's Corner
Learn from the best. Industry experts share their views and strategies for 21st century skills and learning. Learn more

Professional Development
Want to get better at building 21st century leaders in your classroom? Take a look at the training options from Pearson. Learn more

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Read the research. Review case studies. See which states are focusing their standards on 21st century learning. Learn more

Pearson Solutions
Start getting better results with Pearson solutions that focus specifically on 21st century teaching and learning. Learn more

Share today's innovations for the classroom of tomorrow visit teachability.com
“in their current forms it might be that schools not longer belong to the order of things in the late modern era, and are about to vanish from the map of human affairs”

(Suoranta and Vadén 2010)
HACKING YOUR EDUCATION

ESCAPE LECTURES. SAVE THOUSANDS. AND
HUSTLE YOUR WAY TO A BRIGHTER FUTURE

CABLE J. STEPHENS
FOUNDER OF UNCOLLEGE.ORG
“education is one of the institutions most deserving of disruption – and the greatest opportunities to come of it”

(Jeff Jarvis 2009)
digital technology will replace the school!
Today's lesson: Boring stuff

Take your pills and focus!

Computers

iPhones

Advertising hoardings

On what?

Buy these

Get your head fizzin'

100s of television channels

Ritalin 10mg Tablets
“the school provides ‘free time’ and transforms knowledge and skills into ‘common goods’, and therefore has the potential to give everyone, regardless of background, natural talent or aptitude, the time and space to leave their known environment, rise above themselves and renew (and thus change in unpredictable ways) the world”

(Jan Masschelein & Maarten Simons 2013)
Digital technology will replace the teacher!
The Traditional Classroom
Teacher's Role: Sage on the Stage
- LECTURE TODAY
- Homework: Reading and questions due tomorrow

The Flipped Classroom
Teacher's Role: Guide on the Side
- ACTIVITY TODAY
- WATCH lecture online tonight!
The Importance of Still Teaching the iGeneration: New Technologies and the Centrality of Pedagogy

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In this essay, Philip and Garcia argue that visions of mobile devices in the classroom often draw on assumptions about the inherent interests youth have in these devices, the capability of these interests to transfer from out-of-school contexts to the classroom, and the capacity for these new technologies to equalize the educational playing field. These overly optimistic portrayals minimize the pivotal value of effective teaching and are implicitly or explicitly coupled with political agendas that attempt to increasingly control and regiment the work of teachers. Through discussing student interest and issues of educational technology in urban schools and highlighting the affordances and limitations of the texts, tools, and talk that teachers might facilitate with these devices, the authors offer a teacher-focused perspective that is sorely missing in the contemporary debates about using mobile technologies in schools.

The anticipation had been brewing. Students knew they were about to receive brand-new Android smartphones. And for school! The moment they had them in their hands, their thumbs moved rapidly as they raced to figure out the phones’ features. The teacher perfunctorily went through the PowerPoint on how to use the phones, the students correcting him on the instructions they found largely irrelevant. The scene of students enthusiastically engaged with mobile phones and clumsily guided by a “relic” of the predigital age perfectly fit Prensky’s (2006) popular narrative of “digital natives” and Rosen, Carrier, and Cheever’s (2010) trendy image of technologically sophisticated and multi-tasking iGen teens. However, these romantic portraits of youth “fully engaged
“Surely the extraordinary achievement of human beings is the ability for un-situated learning. We can learn by being told things – way outside of the times and places (the ‘situations’) where those things are experienced. The challenge is a matter of integrating that teaching which is dismissively termed ‘delivery’ with authentic involvement in the situations being articulated in such delivery.”

(Charles Crook 2008)
digital technology will disconnect students from schools!
digital residents

digital visitors
Do Learners Really Know Best? Urban Legends in Education

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This article takes a critical look at three pervasive urban legends in education about the nature of learners, learning, and teaching and looks at what educational and psychological research has to say about them. The three legends can be seen as variations on one central theme, namely, that it is the learner who knows best and that she or he should be the controlling force in her or his learning. The first legend is one of learners as digital natives who form a generation of students knowing by nature how to learn from new media, and for whom “old” media and methods used in teaching/learning no longer work. The second legend is the widespread belief that learners have specific learning styles and that education should be individualized to the extent that the pedagogy of teaching/learning is matched to the preferred style of the learner. The final legend is that learners ought to be seen as self-educators who should be given maximum control over what they are learning and their learning trajectory. It concludes with a possible reason why these legends have taken hold, are so pervasive, and are so difficult to eradicate.

Mark Twain, speaking about religion and politics, lamented the fact that people's beliefs and convictions are usually second-hand, taken without examination from others who have not themselves examined the questions at issue but have taken them second-hand from other non-examiners. He concludes that these opinions are “not worth a brass farthing” (Twain, 1910/2010). Today, unfortunately, this appears also to be true for education. We hear many claims as to what is wrong with education, what is needed to correct those wrongs, and why this is the case. Many of the claims, regrettably, are based on belief rather than science and have become tenacious urban legends used by instructional designers, curriculum reformers, politicians, school administrators, and advisory groups all vying for position to show how innovative and up to date they can be.

URBAN LEGENDS IN EDUCATION

Most of us have heard about the alligator that attacked a sewer worker in New York City. The story goes that some child's mother threw down the toilet a baby alligator that her child had gotten as a present from the grandparents who were vacationing in Florida. In the warm, wet sewers of New York City it grew to a length of 15 feet and attacked a sewer worker carrying out routine maintenance work. This is a classic example of an urban legend—a story that is held to be true, sounds plausible enough to be believed, is based primarily on hearsay, and is widely circulated as true. But what about the generation of children whose brains have evolved such that they can multitask? The story goes that today’s children...

What follows are three contemporary beliefs about learners and their learning that the authors classify as urban legends. These beliefs, though both popular and pervasive in education and educational policy, do not really concur with the body of research in educational psychology. They are discussed from the perspective of the central idea that learners...
values
* individualization of practice and action
* deinstitutionalization
* reduction of the state
* privatization and marketization
* commodification
* competitiveness
* experimentation – progress through failure
* social justice
* collective and communal values
* equality of opportunity
* equality of outcome
* education as a space for critical thinking
education & technology =
education & technology = a site for vigorous public debate
education & technology = a site for better academic work
education &
technology = a
site for better research and policymaking
idealismo
realismo