

# Opening Universities in a Digital Era

The beginning of the end of the classroom as we know it?

JOHN PALFREY AND URS GASSER

Just like our students, most information is born digital today. Information, regardless of topic, is created, stored and shared in digital form. No one in higher education has determined the full implications of the shift from an analog world to one in which the analog and digital are converged. The promise and the perils associated with these changes are just beginning to take shape. Universities must begin taking advantage of the opportunities and heading off the biggest dangers associated with this digital revolution.

Digital Natives have a very different relationship with information — the building block of “knowledge” that educational institutions seek to impart — than their predecessors a generation ago. Digital Natives were youngsters when the DVD replaced the VCR, if they had been born at all by that point. Digital Natives are a subset of what has been called the millennial generation, born after 1980, with both access to digital technologies and the skills to use them. Research, for them, is more likely to mean a Google search rather than a trip to the library. As university students, they are more likely to Ask Jeeves, or to turn to another friend who happens to be online, than they are to ask a reference librarian for guidance. They rarely buy a print newspaper; they graze through copious amounts of news and other information online. But make no mistake: In the process, they are doing a lot of learning, even if the process seems unfamiliar.

Digital Natives are accessing information, expressing themselves, and learning in new, digitally inspired ways — sometimes good, sometimes not so good. Psychologists, neuroscientists, educational theorists, and other types of experts are focused on understanding these differences and figuring out how to deal with them.

Some very thoughtful teachers and schools are doing worthy experiments that we ought to track — so that we can build upon them when they succeed and learn from them when they fail.

**Digital Natives are a subset of what has been called the millennial generation, born after 1980, with both access to digital technologies and the skills to use them.**

We need to think like scientists about this issue, to study the results as they come in and react to what we learn. We need to find ways to take advantage of these changes, rather than seeking to resist them.

## Opportunities

First, we ought to commit to putting our own scholarship into accessible digital formats that young people are likely to access. Second, we should tap into the way that young people are accessing rivers, as well as oceans, of information. Third, universities ought to encourage the use of new technologies by young people to connect to one another and to ideas across cultural and geographic lines. Fourth, we need to be open to and to support the kinds of experimentation that faculty members are doing on their own. It is in the success or failure of these experiments that we will see clearly the most attractive futures for education.

## Open Access

Universities should commit to make the work of their faculty available freely on the Internet. There is a nascent movement for “open access” to scholarly works that offers great promise in terms of extending the reach of our research and meeting students where they are looking for information. The Duke Law School, for instance, has

for nearly a decade made many of its journal articles freely available online. In 2005, the Duke Law Library created a free, online repository for faculty works. In 2008, the Harvard Law

School faculty voted unanimously in favor of a mandatory (opt-out) policy to make scholarly works freely available online, following the lead of Harvard’s Faculty of Arts and Sciences a few months before. This commitment to sharing scholarship freely online makes sense not just in terms of reaching other scholars around the world and in terms of ensuring preservation of our scholarship, but also in terms of reaching our own students who are often turning to online search engines before they look to specialized research databases.

## Access to Rivers as well as Oceans

Digital Natives experience the vast ocean — and many rivers — of potentially relevant digital information at their fingertips in ways quite different from previous generations. Take, for example, the way in which they interact with news. They rarely read *The New York Times* or their local paper cover-to-cover over coffee in the morning. They don’t rush home to hear the news read by Katie Couric. They get news and information through some kind of high-tech osmosis over the course of a day. They dip into rivers of information that are flowing by.

Static sources of information — books and databases, for instance — remain essential teaching and

research tools. They are like oceans. In our classrooms and our libraries, we should learn to provide access to *rivers* of information, not just oceans, and teach the new skills needed to analyze information that comes in these formats. Increasingly, online “channels” of information are available to teachers, researchers, and students alike. Whether through Weblogs, wikis, specialized RSS feeds, and whatever formats come next, specialists are offering timely, accurate information about topics that we work on in higher education.

The ability to sort through the extraordinary amount of information available in these formats requires new forms of analysis and facility with new research tools. These skills include the ability to perform critical analyses of sources, to triangulate among multiple sources on the same topic, to balance input from multiple types of information (such as Wikipedia, Encarta, and Encyclopaedia Britannica). Reference librarians as well as classroom teachers have a crucial role to play to help students access these rivers and to make sense of them in the educational process.

As a related matter, universities should play a leadership role in preserving the digital heritage of our

students. Students are creators as well as consumers of information, and reliable digital archiving will not happen without affirmative efforts. This

**Static sources of information — books and databases, for instance — are like oceans. In our classrooms and our libraries, we should learn to provide access to rivers of information, not just oceans, and teach the new skills needed to analyze information that comes in these formats.**

archiving effort will include finding ways to preserve records of these rivers of information, just as we seek to preserve books for posterity.

#### Connecting Across Cultures

Digital Natives are making connections with other young people across cultural lines using online technologies. Consider the growing success of hi5, a social network geared to the global youth culture, now among the top 20 most trafficked Web sites in the world. In the past year, hi5 has grown to more than 60 million registered users across North and South America, Europe, and Asia. The premise of the site is to join people across cultures. The idea is to “break down location barriers” to friendships. Social networks online have the promise

to expand the horizons of Digital Natives; so, too, do reliable online news sources, such as Global Voices Online. In the best case, sites like hi5

and Global Voices, combined with face-to-face initiatives like exchange programs and school-year-abroad, could help promote cross-cultural understanding and strengthen networks of people who span diasporas.

#### Thinking Like Venture Capitalists

Since no one yet has found the answer for how best to adapt to the changing mode of learning, universities ought to do what venture capitalists do in times of upheaval: support experimentation by innovators in the knowledge that this approach will yield large returns over time. Individual faculty members who believe in the power of information technologies are undertaking experiments that will guide us to what will

## Digital Definitions

**Blog** — A blog (an abridgment of the term Web log) is a Website, usually maintained by an individual, with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse chronological order.

**Mashup** — In technology, a mashup is a Web application that combines data from more than one source into a single integrated tool; an example is the use of cartographic data from Google Maps to add location information to real-estate data, thereby creating a new and distinct Web service that was not originally provided by either source.

**RSS** — A family of Web feed formats used to publish frequently updated content such as blog entries, news headlines, and podcasts in a standardized format. RSS makes it possible for people to keep up with Web sites in an automated manner that can be piped into special programs or filtered displays.

**Social Media** — An umbrella term that defines the various activities that integrate technology, social interaction, and the construction of words, pictures, videos and audio. Social networking sites like Facebook and MySpace; wikis; multimedia sites like YouTube; microblogs like Twitter and social bookmarking sites like Digg are examples of social media.

**Web 2.0** — A term describing the trend in the use of World Wide Web technology and Web design that aims to enhance creativity, information sharing, and collaboration among users.

**Wiki** — A collection of Web pages designed to enable anyone who accesses it to contribute or modify content. Wikis are often used to create collaborative Websites and to power community or organizational Websites.

– *The Editors*

work and what will not in the future. At Rice University, the Connexions project is an important step toward making open educational resources available to the world, as is MIT's OpenCourseWare. At Harvard Law School, our colleague Jonathan Zittrain has developed teaching tools that offer enormous promise in terms of what to do with Internet connectivity in the higher education classroom. Teachers across many disciplines are using technologies to encourage online creativity and teamwork, crucial skills for students entering the workforce. These types of initiatives point toward new directions for reaching students and improving their digital literacy skills, often while making more scholarship and teaching materials available more broadly in the process.

### Risks

The powerful new skills set that many Digital Natives possess does not come without its dangers, too. For instance, students who multitask constantly during class — a nice way of saying “doing e-mail while the teacher is talking” — are not participating as fully in learning the material or the skills being imparted by the teacher. Students who flit from source to source, without making it through an entire sustained argument, may never grasp the full picture of a topic. These and other very real risks — several of them have already been researched in greater depth — are best mitigated through traditional teaching measures, such as assigning and testing comprehension of longer works, and through sometimes requiring laptops to be closed for the duration of certain classes or in certain settings. Technology should be used in the classroom, and by faculty in their research, only where it enhances pedagogical and research goals. Technology for its own sake makes no sense.

From an educational perspective, the gravest danger associated with the age of Digital Natives is the digital divide and its impact on learning. As scholars like Henry Jenkins and Eszter

Hargittai have argued, this divide is best characterized as the “participation gap” between those students who have access to these technologies and the skills to use them and those who do not. This gap separates the students in rich countries from those in many poor countries. But the gap exists within rich countries, too. As we seek to take advantage of the terrific opportunities presented by digital technologies and the advanced ways that young people are using them, we need to be cognizant of the divides within our student populations and take steps to close those gaps.

### Conclusion

The digital era brings with it far-reaching changes. These changes can and will be good for society, on balance, if we are able to look down the road and around corners and plan ahead accordingly. Those of us in higher education have an enormous

role to play during this transition. Much turns on whether we are able to seize the right opportunities and to mitigate the greatest harms associated with the ways that Digital Natives are interacting with information, institutions, and one another.

---

**John Palfrey and Urs Gasser** are co-authors of a forthcoming book, *Born Digital: Understanding the First Generation of Digital Natives* (New York: Basic Books, 2008). Palfrey is a clinical professor of law and is executive director of the Berkman Center for Internet & Society at Harvard Law School. Gasser is associate professor and director of the Research Center on Information Law at the University of St. Gallen in Switzerland. E-mails: [jpalfrey@cyber.law.harvard.edu](mailto:jpalfrey@cyber.law.harvard.edu), [urs.gasser@unisg.ch](mailto:urs.gasser@unisg.ch). The authors thank **Miriam Simun** for exceptional research assistance and editing.

## WAY TO GO RI

RIHEAA Is Pleased to Introduce  
WaytogoRI.org!

### Free of Charge for All Rhode Island

The website enables users to search for careers that best match their interests. There are descriptions of multiple careers and the tasks involved, average salary, and the education and/or training required.

This is also a great resource to discover the right college for you. All Rhode Island elementary, middle, and high school students, parents, teachers, counselors and administrators can access WaytogoRI.org **free of charge**.

Other Features include:

- Free Test Preparation for SAT's, ACT's and GRE's
- Study vocabulary and math, learn testing strategies, and take practice exams
- Locate Scholarships and other financial aid sources
- Apply for College and Apply for Federal Financial Aid
- Search and compare Schools
- Build your resume and create cover letters
- Practice for Job Interviews

To learn more about RIHEAA and our many services, contact:  
**Kathy Sisson, Program Planner** at  
(800) 922-9855 or [ksisson@riheaa.org](mailto:ksisson@riheaa.org)

[www.riheaa.org](http://www.riheaa.org)



Copyright of New England Journal of Higher Education is the property of New England Board of Higher Education and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.