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An orientation to the new technologies on campus



Digital natives vs. digital immigrants

Tech teens arrive on campus

Starting college as a freshman once meant making new friends at orientation, waiting in long lines to sign up for classes, buying textbooks at the bookstore. Today, the first generation of digital natives* is arriving on campus, and they have very different habits, learning styles and expectations.

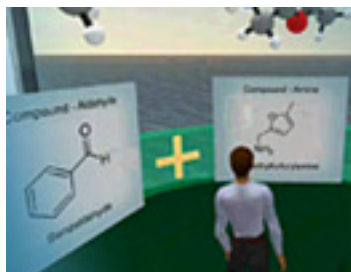
They assume they'll have 24/7 access to online information, games, music and services through their favorite device: phone, laptop, *whatever*. When they arrive on campus, they will have already met a number of fellow freshmen online through a college networking site. They'll register for classes online—not to mention washing machines, parking spaces, and bus service. And while they may buy textbooks, they'll also turn to video conferences, virtual worlds and podcasts for course material throughout the semester.

* **digital native**: a kid who grew up surrounded by technology: the Internet, games, digital music players, cell phones, instant messaging.¹

digital immigrant: someone who was not born into the digital world but adapted to it.²



Differences between digital native students and digital immigrant teachers ³	
Digital native students	Digital immigrant teachers
Prefer receiving information quickly from multiple multimedia sources.	Prefer slow and controlled release of information from limited sources.
Prefer parallel processing and multitasking.	Prefer singular processing and single or limited tasking.
Prefer processing pictures, sounds and video before text.	Prefer to provide text before pictures, sounds and video.
Prefer random access to hyperlinked multimedia information.	Prefer to provide information linearly, logically and sequentially.
Prefer to interact/network simultaneously with many others.	Prefer students to work independently rather than network and interact.
Prefer to learn "just-in-time."	Prefer to teach "just-in-case" (it's on the exam).
Prefer instant gratification and instant rewards.	Prefer deferred gratification and deferred rewards.
Prefer learning that is relevant, instantly useful and fun.	Prefer to teach to the curriculum guide and standardized tests.



Virtual worlds: a parallel universe

Off campus means online

Virtual worlds are immersive 3-D Internet environments that can help us visualize complex phenomenon, such as how the human brain functions. As such, they can be compelling teaching tools.

But virtual worlds are more than visual. They incorporate Web 2.0 interaction capabilities, such as instant messaging, to create highly social, interactive worlds that can bring together people who cannot be in the same location. They can accommodate a vast amount of content, resources, and people [or avatars], providing an ideal medium for distance learning. And since the settings are generic, they can be adapted for a wide variety of subjects.

IBM is using the virtual worlds of Second Life for learning initiatives such as new employee orientation and leveraging that experience to help higher education clients.

 (WMV, 5:15 min, 9.9MB).



Social networking

Intro 101 to Web 2.0

Social networking is here to stay and colleges are sorting out how best to use these Web 2.0 technologies to reach their students, connect different constituents and foster a spirit of community—all while keeping in mind issues related to privacy and security.

Schools such as Allegheny College, PA, University of Pennsylvania⁴ and Eckerd College, Fla,⁵ have created **social networking** sites for incoming freshman, including blogs, profiling and forums, so they can get to know fellow students before they arrive on campus.

Cardiff University, one of Great Britain's leading teaching and research institutions, with a population the size of a small town—about 30,000—is working with IBM to develop a comprehensive **portal** linking current and prospective students, staff, lecturers, alumni and researchers. It will include such networking tools as e-mail, collaborative workspaces, instant messaging and online profiling. Researchers can connect with peers at other universities; students can communicate with professors and network with classmates; and administrators can work with the community at large.

Portals also serve as a virtual extension of the classroom, with audio and video podcasts of lectures and links to class materials.

More than half of the students at Eckerd College travel abroad and each gets a Web site to blog about their adventures; an early blog, including photos, was transmitted by satellite phone from a winter trek to Antarctica.⁶

Many students live and breathe by **instant messaging (IM)**. And colleges are using IM services to disseminate information. In the wake of the Virginia Tech murders, some 70 universities adopted text messaging for emergency communications. In New York, legislation requiring text-messaging systems on campuses across the state is pending. On a lighter note, one college advised applicants of admission via texting. At Stanford University, professors have IM office hours.⁷



Virtual Computing Lab

Rethinking the old computer lab

The “always on” expectations of incoming students and the changing needs of an older, more diverse student body are creating an unprecedented demand for computing resources. At North Carolina State University, managing computer lab capacity had long been a challenge. The developers knew there had to be a better way, and worked with IBM to create a **Virtual Computing Lab (VCL)**.

In simple terms, virtualization separates the computing resources from individual desktops and centralizes them on blade servers. The computing resources are then made available to authorized users via the Internet. A student, teacher or researcher can request resources ranging from a single seat running a K-12 application, to a set of synchronized seats for a senior history class, to high-performance research servers to crunch through a slate of algorithms.

Computing resources can be accessed anywhere, anytime, through any device. But the computing power is managed and distributed centrally using an on demand model, in which idle capacity can be turned over to run other high performance tasks.

Virtual computing means virtuous distribution

Since fall, the VCL has been extended to serve a network of educational institutions across North Carolina, including K-12 school districts in rural, underserved areas, community colleges and universities. Virtualized computing can help a government close the “digital divide,” the tendency of computing resources to settle in higher income areas.

Institutions are taking notice with VCL pilots under consideration at Virginia Tech; University of Maryland/ Baltimore County; East Carolina University, NC; Boston College, MA; Duke University, NC, in the U.S.; and the University of Hyderabad and Amrita Institute/Coimbatore in India, to name a few.

Top 20 Wired Colleges



- 1 Villanova University
- 2 M.I.T.
- 3 Indiana University Bloomington
- 4 Swarthmore College
- 5 Creighton University
- 6 University of Illinois
- 7 Michigan Tech University
- 8 University of Southern California
- 9 Quinnipiac University
- 10 University of Oklahoma
- 11 United States Military Academy
- 12 University of Minnesota Twin Cities
- 13 St. John's University
- 14 Clarkson University
- 15 Temple University
- 16 Stevens Institute of Technology
- 17 Stanford University
- 18 Eckerd College
- 19 Pomona College
- 20 University of Virginia

Source: PCmag.com, 12.20.06

1, 2, 3: On the Horizon , "Digital Natives, Digital Immigrants," Marc Prensky, 2001

4: The 2007 Horizon Report, The NEW MEDIA CONSORTIUM and EDUCAUSE Learning Initiative

5, 6, 7: PCmag.com, "Top 20 Wired Colleges," 12.20.06



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