

## Notes

1. The forums took place on February 8, 2007, in Chicago, Illinois; April 21, 2007, at Duke University in Durham, North Carolina, at Electronic Tectonics: Thinking at the Interface, the first international HASTAC conference; and on May 11, 2007, at the University of California's Humanities Research Institute (UCHRI), in Irvine, California.
2. Learning institutions have made great strides in recent years. See, for example, Jason Szep, "Technology Reshapes America's Classrooms," *New York Times*, July 7, 2008. In our forthcoming book, *The Future of Thinking*, we include an extensive "Bibliography: Resources and Models." Yet there is still significant progress to be made. Learning institutions must reexamine their entire structure and approach to learning before they can truly enter the digital age.
3. Bharat Mehra, Cecelia Merkel, and Ann P. Bishop, "The Internet for Empowerment of Minority and Marginalized Users," *New Media and Society* 6 (2004): 781–802. See also the essays collected in *Civic Life Online: Learning How Digital Media Can Engage Youth*, ed. W. Lance Bennett (Cambridge, MA: MIT Press, 2008).
4. According to the *Guinness Book of World Records*, the title of "oldest" is a matter of dispute but, generally, the order is accepted as: University of Al-Karaouine, in Fes, Morocco (859); Al-Azhar University in Cairo,

Egypt (975); the University of Bologna, Italy (1088); the University of Paris (1150); and Oxford (1167).

5. For an excellent discussion of different access to participation, or what is commonly known as the “digital divide,” from a transnational perspective, see Terry Flew, *New Media: An Introduction* (Melbourne: Oxford University Press, 2008). In the People’s Republic of China, for example, only ten percent of the population has access to the Internet at present, and virtually all communications on the Internet are under surveillance by the government, an issue of both access and censorship. In the United States, Mehra, Merkel, and Bishop, “The Internet for Empowerment of Minority and Marginalized Users,” 782, discuss the roles of educational level, socioeconomic status, income, and race as factors contributing to and also influenced by access to digital technologies.

6. “Wikipedia,” on Wikipedia, <http://en.wikipedia.org/wiki/Wikipedia:About> (March 15, 2008).

7. John Palfrey and Urs Gasser, in *Born Digital: Understanding the First Generation of Digital Natives* (New York: Basic Books, 2008), powerfully make the case for the invisibility of many of these issues to many of those (including the vast majority of students entering college today) who have been raised in a world where digital, participatory learning exists. This is in no way to diminish the fact of the digital divide but to emphasize an epistemological divide separating those who grew up participating in digital culture and those who have learned it in adulthood.

8. Cornelia Dean, “If You Have a Problem, Ask Everyone,” *New York Times*, July 22, 2008.

9. The initial posting of the draft manuscript on the Institute for the Future of the Book’s Web site in January 2007 amassed over 350 registrants. It has since changed considerably to take the comments and suggestions of these registrants into consideration. All comments through March 2008 have been taken into consideration in this publication.

10. For full discussion of authorship in participatory learning (which uses this project as one of its examples) and how participatory learning practices change the stated and unstated premises of peer review, see Cathy N. Davidson, “Humanities 2.0: Promise, Perils, Predictions,” *Publications of the Modern Language Association (PMLA)* 123, no. 3 (May 2008): 707–717.

11. An excellent example of an interactive hybrid is the multiple publication sites for the proceedings of our first HASTAC conference (May 2007). *Electronic Techtonics: Thinking at the Interface*, edited by Erin Ennis, Zoë Marie Jones, Paolo Mangiafico, Mark Olson, Jennifer Rhee, Mitali Routh, Jonathan E. Tarr, and Brett Walters, was published under Creative Commons licensing by Lulu, an open source venture founded by Red Hat CEO Bob Young. The book is available for purchasing as a printed volume or by free digital download. Additionally, a multimedia version is available on the HASTAC Web site ([www.hastac.org](http://www.hastac.org)), and edited talks from the conference appear on the HASTAC YouTube Channel (<http://www.youtube.com/user/video4hastac>). Finally, the interactive data visualization experiment collaboratively produced for the conference has contributed to a nonprofit research Web site, SparkIP (<http://www.sparkip.com>), which also has an online for-profit component. All of these various forms of content creation constitute “publishing” in the digital age.

12. For more information on the history of the book, see Cathy N. Davidson, ed., *Reading in America: Literature and Social History* (Baltimore: Johns Hopkins University Press, 1989).

13. Robert Darnton, “The Library in the New Age,” *New York Review of Books* 55, no. 10 (June 12, 2008).

14. Comment by Wheat on the Web site for the Institute for the Future of the Book, August 6, 2007 (<http://www.futureofthebook.org/HASTAC/learningreport/i-overview/>).

15. See Lawrence Grossberg, *Caught in the Crossfire: Kids, Politics, and America's Future* (Boulder, CO: Paradigm Publishers, 2005) for a tren-

chant analysis of ways that class and race factor into the lives of youth and merge in U.S. national policy and ideology; and Philomena Essed and David Theo Goldberg, eds., *Race Critical Theories* (London: Blackwell, 2002), for further discussion of how racism inflects these issues. See also Christopher Newfield, *Unmaking the Public University: The Forty-Year Assault on the Middle Class* (Cambridge, MA: Harvard University Press, 2008).

16. See The Education Trust, “Getting Honest about Grad Rates: Too Many States Hide behind False Data,” June 23, 2005 (<http://www2.edtrust.org/EdTrust/Press+Room/HSGradRate2005.htm>).

17. See <http://www.americaspromise.org/APAPage.aspx?id=10354>. *Cities in Crisis: A Special Analytic Report on High School Graduation*, released April 1, 2008, chaired by Alma J. Powell of America’s Promise Alliance and prepared by Editorial Projects in Education Research Center, reveals that “in the metropolitan areas surrounding 35 of the nation’s largest cities, graduation rates in urban schools were lower than those in nearby suburban communities. In several instances, the disparity between urban-suburban graduation rates was more than 35 percentage points.”

18. See The Prison University Project (<http://www.prisonuniversityproject.org/resources.html>) and the Correctional Education Facts from the National Institute for Literacy ([www.nifl.gov/nifl/facts/correctional.html](http://www.nifl.gov/nifl/facts/correctional.html)).

19. See <http://www.hrw.org/english/docs/2008/06/06/usdom19035.htm>. “U.S.: Prison Rates Hit New High,” Human Rights Watch, Washington, DC, June 6, 2008.

20. Former head of the U.S.-based National Telecommunications Infrastructure Administration (NTIA) Larry Irving was among the first to use the term “digital divide” during the Clinton Administration. However, the George W. Bush Administration has focused on growth of access rather than on gaps and divides in its reports, making it very difficult, on a national level, to assess how much of a divide currently exists across socioeconomic levels, within and across races, ethnicities, language and cultural barriers (such as new immigrant communities). For essays that

focus on some of these issues, see Anna Everett, ed., *Learning Race and Ethnicity: Youth and Digital Media* (Cambridge, MA: MIT Press, 2008).

21. John Seely Brown and Douglas Thomas, "The Play of Imagination: Extending the Literary Mind," *Games and Culture* 2 (2007): 149–172.

22. Although many people use the phrase "Net Age" as a shorthand for "Internet Age," we are here using John Seely Brown's particular use of the term to signal both the Internet and networking, the specific combination that O'Reilly calls Web 2.0 and that seems to us a vastly rich model for learning and a specific challenge to most existing forms of learning institutions. See his keynote address, "The Social Life of Learning in the Net Age," presented at the First International HASTAC conference, Electronic Techtonics: Thinking at the Interface, Duke University, April 19, 2007 (<http://www.hastac.org/informationyear/ET/JohnSeelyBrown>).

23. James Boyle, "A Closed Mind about an Open World," *Financial Times* (August 8, 2006).

24. For an excellent analysis of the pedagogical requirements for a digital age, see Steve Anderson and Anne Balsamo, "A Pedagogy for Original Synners," in *Digital Youth, Innovation, and the Unexpected*, ed. Tara McPherson (Cambridge, MA: MIT Press), 241–259.

25. Since 1994, Alan Liu has been the "weaver," as he says, of The Voice of the Shuttle: Web Page for Humanities Research (<http://liu.english.ucsb.edu/the-voice-of-the-shuttle-Web-page-for-humanities-research/>).

26. Alan Liu has circulated a useful and levelheaded set of guidelines he issues to students in his undergraduate college classes about consulting Wikipedia for formal coursework purposes. See <http://www.english.ucsb.edu/faculty/ayliu/courses/wikipedia-policy.html>.

27. Perhaps the best article available on the advantages and, candidly, the shortcomings of Wikipedia as a collaborative knowledge site and, differently, as a reference work is the entry on "Wikipedia" on Wikipedia (<http://en.wikipedia.org/wiki/Wikipedia>).

28. For an extended discussion of the new models of mind and brain necessary to envision a new, collaborative, horizontal pedagogy, see Cathy N. Davidson's forthcoming *The Rewired Brain: The Deep Structure of Thinking for the Information Age* (to be published by Viking Press in 2010). In more practical terms, E. O. Wilson, the noted biologist, has been leading a major online undertaking in collaboration with others to provide a comprehensive, open source, online catalog of knowledge about every known biological species. It is, as the home page announces, "an ecosystem of Web sites that makes all key information about all life on Earth accessible to anyone, anywhere in the world." Calling for contribution from any concerned person, the project organizers nevertheless have stringent oversight constraints on the quality of contribution, looking to domain experts as content editors. See Encyclopedia of Life (<http://www.eol.org/index>).

29. For an excellent discussion of the value system implicit in open source culture, see Christopher M. Kelty, *Two Bits: The Cultural Significance of Free Software* (Durham, NC: Duke University Press, 2008). On networked individualism and society, see Barry Wellman, Anabel Quan-Haase, Jeffrey Boase, Wenhong Chen, Keith Hampton, Isabel Isla de Diaz, and Kakuko Miyata, "The Social Affordances of the Internet for Networked Individualism," *Journal of Computer-Mediated Communication* 8, no. 3 (April 2003). Available at: <http://jcmc.indiana.edu/vol8/issue3/wellman.html>.

30. HASTAC has taken an active role in exploring a variety of electronic publishing forms. In addition to helping to support Kelty's online version of *Two Bits* (as a free download that can be remixed and commented on) and to publishing the first draft of this book on a collaborative writing site, HASTAC has published the proceedings of its first annual conference with Lulu.com, a self-publishing site that allows users to purchase a book or to download for free as well in a multimedia form. The "proceedings" of the second conference combine multimedia (audio-video) as well as multi-authored live blogging of talks, exhibits, and events as an online archive of the event. Each of us is engaged in

ongoing discussions with various academic presses about contemporary electronic publishing initiatives as the future direction of academic publishing.

31. Elizabeth Gudrais, "Unequal America: Causes and Consequences of the Wide—and Growing—Gap between Rich and Poor," *Harvard Magazine* (July–August 2008) (<http://harvardmagazine.com/2008/07/unequal-america.html>); Claudia Goldin, *The Race between Education and Technology* (Cambridge, MA: Belknap Press, 2008); Bill Readings, *The University in Ruins* (Cambridge, MA: Harvard University Press, 1996); Mark Gibson and Alec McHoul, "Interdisciplinarity," in *A Companion to Cultural Studies*, ed. Toby Miller (Oxford: Basil Blackwell, 2006); David Theo Goldberg, "Enduring Occupations," in *The Threat of Race* (Oxford: Wiley-Blackwell, 2008); and David Theo Goldberg, *The Racial State* (Oxford: Basil Blackwell, 2002).

32. This is the title for the keynote address that John Seely Brown delivered at the first international conference of HASTAC, Electronic Technologies: Thinking at the Interface, April 19, 2007, at the Nasher Museum of Art at Duke University. A Webcast is available at [www.hastac.org](http://www.hastac.org). Some schools, including public schools, are just coming online which seek to institutionalize these newly emergent models of networked learning practices.

33. Henry Jenkins, *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century* (New York: New York University Press, 2006), 257.

34. Many of the contributors to the Institute for the Future of the Book Web site used (often cryptic) usernames in order to register and thus could not be identified in terms of their institutional connections. This does not make their comments any less valuable and is instead a natural product of digital collaboration. We attempted to contact users and ask permission to use their real names and institutional affiliations. Where we received no response, we have used the name or pseudonym they used on the IFB site.