

Education 403X: Education's Digital Future
Spring Quarter 2013 / Stanford University

Time	Tuesdays 5:15–7:05 PM	
Location	CERAS 100B	
Faculty	Mitchell Stevens mitchell.stevens@stanford.edu Cubberley 215	Roy Pea roypea@stanford.edu Wallenberg Hall 232
Hours	by appointment	by appointment
CAs	Laura Moorhead lauralm@stanford.edu	Daniel Greene dkgreene@stanford.edu

Purpose

This course provides intellectual context and regular occasion for critical dialogue about transformations in teaching, learning and education facilitated by the expansion of digital media throughout society. Our goals are to: (1) surface and discuss foundational questions about how educational practices and institutions are organized; (2) provide opportunities for the Stanford community to think together about how digital media might change the character of teaching and learning in fundamental ways. Education's digital future will be shaped only very partially by technology. The politics, organization, funding, content and ethics of education and schooling will define that future, and therefore are squarely within the purview of our discussions.

Background: Fall & Winter Quarters

During Fall Quarter we built a broad intellectual foundation pertaining to the histories and contemporary experiences of education's digital expressions. We had serious discussion about questions such themes such as living digitally, the changing relationships between school and work, 'rock star' teachers, digital technologies in K-12, and the political economy of US higher education. In Winter Quarter we explored four broad themes: the changing boundaries between high school and college, credentialing and accreditation, STEM/open source curricular innovations, and gaming to learn. In Spring Quarter we will examine questions related to new forms of college access, deciphering the digital divide, learning analytics and new educational and learning science, and media literacy and youth cultures.

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We will build on the knowledge generated in 403x to date, but will consider a set of discrete themes for which participation in fall and winter quarter is not requisite. For students new to 403x in Spring, overviews of Fall and Winter quarters will be available. Spring themes are the following: (1) deciphering 'the digital divide'; (2) learning analytics and new forms of education research; (3) new forms of college access; and (4) new media literacies and youth cultures. Below we provide a brief overview of these themes and a sampling of questions that will motivate our discussion.

Requirements

Participation. Critical inquiry is a collective enterprise. We aim to create a community of thinkers around central questions regarding the fate and future of education and schooling. Everyone is expected to attend all class meetings, complete all assignments on time, and routinely contribute to class discussions.

Preparatory and response activity: Each week will build on preparatory activity designed to enhance the quality of classroom exchange. You are expected to have completed these activities in advance of each class session, tentatively outlined below. Many of these tasks will be readings, available online. A Piazza web space is being created for 403X and will be used to distribute preparatory material, and for written work and dialogue. We will also draw on several books, the purchase of which is strongly recommended:

Recommended readings: We maintain a growing cache of related readings about teaching and learning digitally, as well as the larger network revolution, at the EDF web site: <http://edf.stanford.edu/>

Written assignments: Some of the preparatory activity for this course will take the form of short written assignments. Details of these assignments, their submission format, and their deadlines will be clearly specified well in advance.

Note: We reserve the privilege to circulate, at our discretion and with attribution, for purposes of instruction and intellectual aggregation, any and all of the written work submitted by students and auditors for this course. In short, we will consider course contributions to be covered under the Creative Commons Attribution-Non Commercial license (<http://creativecommons.org/licenses/by-nc/2.0/>)

Evaluation

This is a one-unit, credit/no-credit course. Evaluation is based on:

- Class attendance (documented at every class session) and participation
- Completion of assigned preparatory activities

Deciphering the Digital Divide

This series of classes will pursue the question of how educational opportunities and learning outcomes are stratified across populations. We will explore how the introduction of digital technologies has the potential to change the patterns by which educational opportunities and learning are distributed both in the US and abroad. While the digital divide and associated concerns have been in the policy lexicon now for many years, recent changes in the geographies of broadband internet access, new technologies for learning, and new models for knowledge delivery around the world give rise to new questions and new capacities for assessing the distributive implications of education's digital future.

April 2 Deciphering the digital divide: What is it, why does it matter?

Roy Pea will provide a historical perspective of how issues of digital divide have been conceived, measured and addressed from a policy perspective over the past three decades – and explain why there will always be a digital divide, based on the business logic of technological innovation.

Readings:

- Pea, R. D. (2001). Technology, equity, and K-12 learning. In R. Noll (Ed). *Bridging the digital divide: California Public Affairs Forum* (pp. 39-51). Sacramento, CA: California Council of Science and Technology.
- Warschauer, M. (2003). Demystifying the digital divide. *Scientific American*, 42-47.

April 9 An overview of educational inequality in the US

Mitchell Stevens provides an overview of the broad corpus of social-science research on the character of inequality in US schooling

Reading:

Greg J. Duncan and Richard J. Murnane, "Introduction: The American Dream, Then and Now." Pp. 1-23 in Duncan and Murnane, editors, Whither Opportunity: Rising Inequality, Schools, and Children's Life Chances (New York: Russell Sage Foundation)

April 16 Workshop: Addressing the digital divide and educational inequalities in new ways

In this session we will work in breakout groups to characterize the range of issues involved in addressing issues of digital divide relating to educational inequalities, and consider design approaches and tradeoffs to addressing them in novel ways.

April 23 Public Forum—Digital divides and educational inequalities

Potential Panelists: Mark Warschauer (UC Irvine), Eszter Hargatai (Northwestern), Wayne Grant (Intel).

Readings:

- Hargittai, E. (2008). The digital reproduction of inequality. In D. Grusky, (Ed.), *Social stratification: Class, race, and gender in sociological perspective*. Boulder, Colorado: Westview Press.
- Warschauer, M., & Matuchniak, T. (2010). New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes. *Review of Research in Education*, 34(179), 179-225.

Learning Analytics, and New Educational and Learning Sciences

Here we explore some of what is new in education and learning research, in light of new capacities to collect and make sense of the massive quantities of user data made available through digitally mediated learning environments. The means to make sense of these data are found at the intersection of the social sciences (the historical cognates of education research) and, increasingly, the computational sciences. We will explore both the growth of new forms of educational data and the meeting of scientific traditions, the types of questions we may now be in a position to explore as a result of these changes, and some of the large ethical questions that attend this mode of inquiry.

April 30 What learning analytics is about and why it matters

Roy Pea with students will provide a panel to explain what underlies the rapidly growing interest in “big data” in the education field with digitally enhanced learning and teaching. The fields of learning analytics (and closely associated educational data mining) are new developments in the world of digital education. With digital curriculum aligned to Common Core Standards in math and English language arts (and soon science), and formative assessments and recommendation engines for learning resources, far more extensive data are available to guide the provision of responsive educational resources and supports for students towards personalized learning.

Reading: TBA

May 7 Opportunities and challenges for multimodal learning analytics

Paulo Blikstein and students will provide a panel to introduce the emerging topic on how multimodal data captured during learning and teaching can enable assessment of complex learning performances such as project-based learning and collaborative learning, and enable better understandings of the contexts in which learning is occurring.

Reading: TBA

May 14 Workshop: Remaking college

What was once called a “traditional” college model of four years of co-present instruction on residential campuses is no longer a tenable or even desirable goal for national public policy. In this session we will work in groups do discuss alternative models of college delivery.

May 21 Public Forum--New forms of college access

This class will examine contemporary dynamics in the ecology of broad-access colleges and universities. In light of the increasing recognition that much of higher education in the U.S. and elsewhere takes place in non-residential institutions such as community and technical colleges, this class brings to light ways in which digital education is currently being deployed and considered in these contexts. The session will feature a panel of experts who will speak to the digital articulations of new forms of college attendance and participation.

New Media Literacies and Participatory Culture

In light of the increasing recognition that much of learning takes place in non-school contexts these sessions will focus on what we know about learning and participation in youth cultures, and in particular around new media.

May 28 The new co-viewing: Why joint media engagement with parents and other adults is important for early childhood learning with new media

Roy Pea will moderate a panel discussion on several LIFE Center related projects on this topic. Participants to include (invited): Carlin Llorente and Savitha Moorthy (SRI International), and Lori Takeuchi (Joan Ganz Cooney Center, Sesame Workshop).

June 4 Public Forum: New media literacies and participatory culture

Invited panelists: Brigid Barron (SGSE), Nichole Pinkard (DePaul University, Elisabeth Soep (Oakland’s NPR Youth Radio)