Informatics Research Workforce II – Innovative Technologies for Online Teaching

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Overview

- Drawing upon experience leading one of the largest distance learning programs in the informatics field, will discuss future directions for online teaching, including the use of massive open online courses (MOOCs) and other potentially disruptive innovations

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Distance learning – a personal journey

- 1999 – "Why can't we take OHSU courses online?" (OHSU students)
  - Increasingly frequent requests led us to develop single course, Graduate Certificate program, and ultimately master's degree
- 2005 – "We need to train one physician and one nurse in each US hospital." (Charles Safran)
  - "Re-packaging" introductory course led to 10x10
- 2009 – "To improve the quality of our health care while lowering its cost, we will make the immediate investments necessary to ensure that within five years, all of America's medical records are computerized." (Barack Obama)
  - HITECH $118 million investment in workforce
  - Provided resources to add internships, career advising, and more
- 2013 – Dealing with change and disruptive innovation in face of declining resources for academic health science centers

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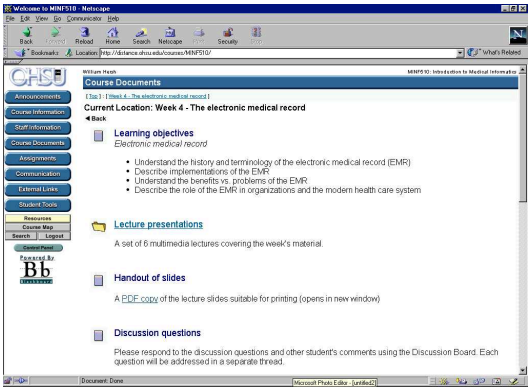
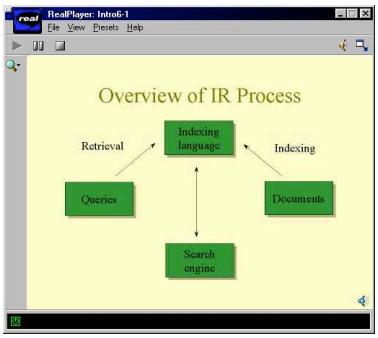
Early technologies, mostly accessed via dialup modem





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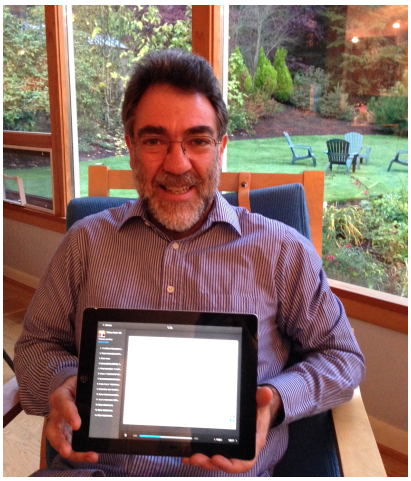
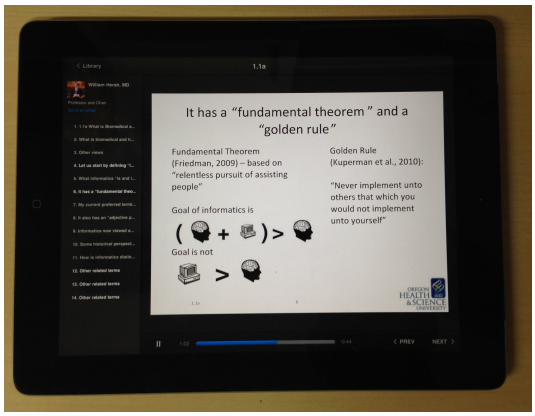
Now accessed ubiquitously





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Pedagogic methods have withstood test of time

- Traditional classrooms can be replicated
  - Narrated lectures
  - Online discussion forums
  - Readings
  - Assessments
- And innovated upon
  - Virtual projects
  - Remote internships and practicums

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Also learned there are terms to describe what we have been doing

- Virtual communities – our online students keep connected among themselves and with us both virtually and in person
- Flipped classroom – heavy use of online materials in on-campus classroom
- Mastery learning – for some courses, replace time with demonstration of competencies

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Conclusions after almost a decade and a half

- Almost any learning experience can be replicated online
  - Medical educators beware!
- Works best for motivated adult learners, most of whom are seeking professional (as opposed to academic) advancement of their careers
  - ACGME approach to clinical informatics fellowships misguided?
- Cost of delivering an online educational program is no cheaper and requires no less faculty time than on-campus programs
  - Unless there is disruptive innovation

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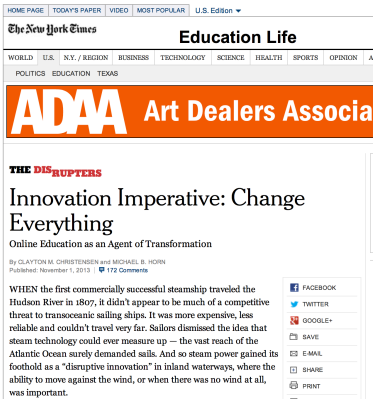
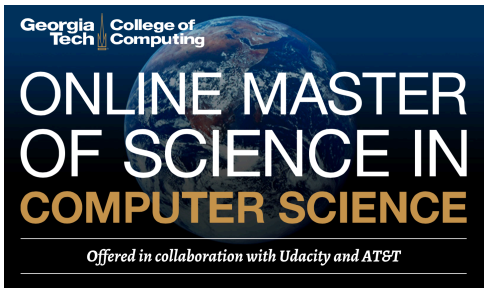
But I worry: will I succumb to disruptive innovation?



http://www.nytimes.com/2013/11/03/education/edlife/online-education-as-an-agent-of-transformation.html



http://www.omscs.gatech.edu

Not to worry yet; we work in the two industries that have defied disruptive innovation, healthcare and higher education

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Potential disruptive innovators

- Massive online open courses (MOOCs)
  - Business model not (yet) clear
  - Probably work best for basic over specialized courses
  - Opportunity to achieve economies of scale in higher education
  - Experience to date is massive enrollment with large attrition but still substantial numbers completing (Breslow, 2013)
- Low-cost degrees and other programs
  - $10,000 bachelor's degree in Texas
  - $6600 master's in computer science from Georgia Tech (Lewin, 2013)

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But education is about more than courses

- At OHSU, for tuition and fees comparable to other programs, get
  - Cutting-edge curriculum based on solid foundation
  - Faculty who are international leaders in research and practice
  - Internship/practicum experience
  - Career development and advising
  - Connections to industry and others

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Can we adopt these innovations for the informatics research workforce?

- Education of researchers more heterogeneous and interdisciplinary than of professionals
- May still achieve economies of scale by sharing of materials and faculty/student collaboration across universities
- Experience of ONC health IT curriculum project (Mohan, 2013) – content can be creative collaboratively but (some) editorial control and maintenance still required

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