

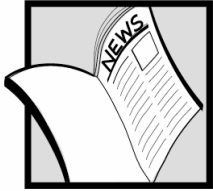


Stanford Center for Professional Development
Stanford University

Choices and Challenges

Lessons Learned in the Evolution of Online Education

Dr. Andy DiPaolo
Executive Director, SCPD



News Items

- **Stanford, Yale and Oxford create an independent, not-for-profit alliance-- AllLearn-- to develop distance learning programs.**

September 2001

- **MIT will spend \$100 million to post course materials online for free worldwide access.**

April 2001



- **IBM and Microsoft work with universities to develop company-specific online graduate degrees.**

June 2001

- **European Commission adopts \$13.3 billion plan to promote online university education.**

April 2001



- **NextEd partners with 25 higher education institutions to deliver online education throughout Asia via the Global Education Alliance.**

September 2001

- **U.S. Open University to close after spending \$20 million.**

April 2001



- **Universitas 21, an international network of universities, moves forward with Thomson Learning to deliver online education worldwide.**

November 2001

- **New York University shuts down its virtual university spinoff company.**

November 2002



- **University of Phoenix enrolls over 130,000 students with nearly 60,000 in online degree programs. Now the largest provider of online degrees in North America.**

March 2003

- **Barnes and Noble University enrolls 200,000 online students.**

December 2002

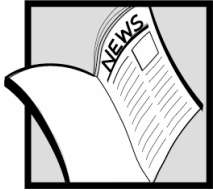


- **Harcourt Higher Education, a for-profit, online, degree-granting college closes after spending \$10 million.**

September 2001

- **International cyber university involving 19 colleges from California to Thailand aims to open next year.**

April 2002



- **U.S. Army's \$600 million university partnership – eARMYU – boosts e-learning industry.**

January 2002

- **State University of New York online enrollments at 20,000 students, up 34% in one year.**

January 2003



- **After losing millions, Columbia University will close Fathom, its online-learning venture.**

April 2002

- **Corporations link online learning and university partnerships to business strategy.**

November 2002



- **Sloan Foundation contributes over \$30 million to 47 universities for developing asynchronous learning networks.**

January 2002

- **High Tech billionaire pledges \$100 million for free Ivy League-quality online university.**

March 2000



Where are we headed?

- **Access to learning independent of:**
 - **Time**
 - **Economic status**
 - **Distance**
 - **Physical disability**
- **Move instruction, not people to:**
 - **Save time**
 - **Enhance teaching**
 - **Lower cost**
 - **Improve learning**
 - **Offer accessibility**
 - **Provide choice**

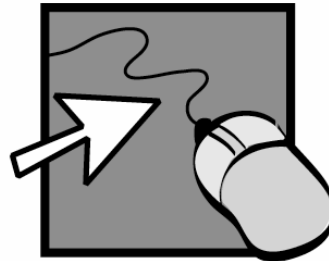


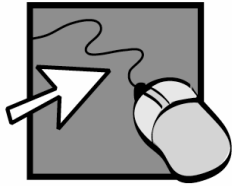
“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.”

Alvin Toffler
“Rethinking the Future”

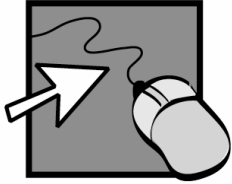


What Do Online Learners Want?

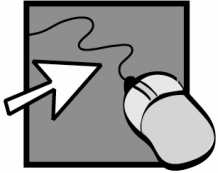




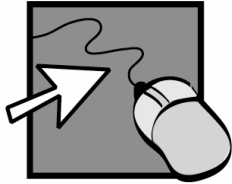
- **Assume responsibility for increasing personal market value. Busy yet anxious to learn.**
- **Access to learning independent of time and distance. Time and availability is more important than cost.**
- **Convenience and flexibility with a range of course and program delivery options and multiple avenues for learning.**



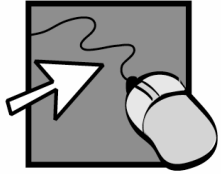
- **A choice of synchronous, asynchronous, and blended learning options.**
- **Well-designed, engaging, intellectually challenging and continuously updated courses which facilitate the transfer of learning to direct application.**



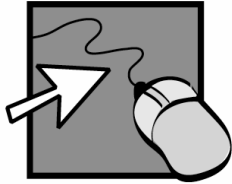
- **A wide range of online degree, professional certification and credentialing options – not just random online courses – with flexible completion times.**
- **Emphasis on active, goal-oriented, scenario-based learning using real, vivid and familiar examples. “Learning pull” vs “teacher push” preferred.**



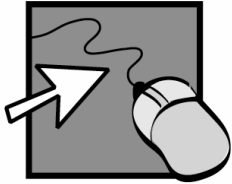
- **Short modules - “bite-sized chunks of education” - which can be bundled into an interactive learning experience.**
- **Reliable delivery to any internet platform with consistent navigation and 24/7 technical support.**



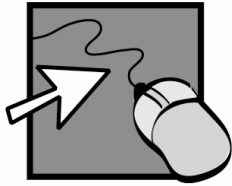
- **Provisions for tele-advising, tele-coaching and tele-mentoring.**
- **Participation in a “connected learning community” by active engagement with instructors, tutors, peers and experts.**



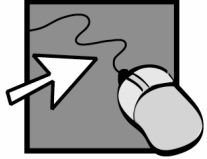
- **Access to providers with established brand names representing quality, competency, reputation and a recognized customer base.**
- **To customize the learning activity based on personal experience and assessment of knowledge gaps.**



- **To control the scope, sequence and pacing of learning. Impatient with inefficient methods.**
- **To sample courses and review evaluations before registering.**
- **World-wide access to information and the training to find and evaluate it.**



- **To collaborate by working in geographically dispersed learning groups.**
- **To receive outstanding support services with a focus on “student as customer.”**



- **Continuous, prompt, and meaningful forms of feedback.**
- **Competitive pricing.**
- **Ongoing educational renewal with commitment from providers to support continuous learning.**



“Motorola no longer wants to hire engineers with a four-year degree. Instead, we want our employees to have a 40-year degree.”

***Christopher Galvin
President and CEO of Motorola.***



Higher Education Online



“A Market in Transition”



The Higher Ed View

- **3700 universities in U.S. with 15 million students.**
- **84% of four-year colleges will offer internet delivered courses in 2003, a 62% increase since 2000.**
- **In 2002 over 70% offered online classes to external audiences with a focus on business, engineering, science and healthcare.**
- **Online learning enrollments growing 33% annually and expected to hit 5 million by 2005.**

Source: Eduventures, Think Equity Partners



The Higher Ed View

- **More than 60% of corporate universities have alliances with institutions of higher education, increasing to 85% in 2003.**
- **By 2004, 2.2 million degree-seeking students in U.S. will be enrolled in online courses. CAGR of 33%**
- **Online degree granting programs generated \$1.75 billion in revenue for institutions in 2002-2002.**
- **Global demand for higher education online forecast to reach 45 million online students by 2025.**

Source: Eduventures, Think Equity Partners



The Online Education Landscape

- **Higher education collaborations.**
- **Higher education for-profit spinoffs.**
- **Higher education/corporate partnerships.**
- **Corporate university spinoffs.**
- **Corporations, publishers, associations, entrepreneurs and alliances.**



Online Education Collaborations

- **Illinois Virtual Campus**
- **Florida Virtual Campus**
- **Missouri Learner's Network**
- **Michigan Virtual University**
- **Western Governors University**
- **Penn State World Campus**
- **UMass Online**



Online Education Collaborations

- **Kentucky Virtual University**
- **SUNY Learning Network**
- **Southern Regional E-Campus**
- **Virginia Virtual University**
- **Ohio Learning Network**
- **Worldwide Universities Network**
- **Global University Alliance**



University For-Profit Spinouts

- NYU Online *
 - Fathom/Columbia*
 - Duke Corporate Education
 - Babson Interactive
 - National University
 - eCornell
 - UMUC Online *
 - GW Learning Solutions
 - Virtual Temple *
- * failed



“Higher education institutions will lose an increasing share of the growing post-secondary education market to other, non-traditional providers.”

Source: Gartner Group



From a Venture Capital Prospectus

Education:

- **Is the most fertile new market for investors in many years.**
- **Presents the opportunity for very large scale activities.**
- **Has many disgruntled current users.**



From a Venture Capital Prospectus

- **Generates a large amount of revenue and its market is increasing and becoming global.**
- **Poorly run, low in productivity, high in cost, and relatively low technology utilization.**
- **Existing management is sleepy after years of monopoly and is ripe for takeover, remaking and profits.**



“Although the gold rush attitude and the corporate cowboys of a few years ago have subsided, there is still enough good news to make online higher education attractive to entrepreneurs.”

American Council on Education



Online Education Entrepreneurs

- **University of Phoenix • NextEd**
- **Cardean University • Kaplan Colleges**
- **Jones International • Concord Law**
- **Capella University • Thomson Learning**
- **Sylvan • eCollege**



Online Education Entrepreneurs

- **Pearson PLC**
- **Dow Jones U**
- **ElementK**
- **Global Education Network**
- **NETg**
- **EDT Learning**
- **DigitalThink**
- **DeVry Institutes**



Online Education Entrepreneurs

- **Hungry Minds**
- **Click2learn**
- **Smart Force**
- **Cognitive Arts**
- **McGraw Hill Learning Network**
- **Powered, Inc.**
- **FT Knowledge**
- **Thing**
- **e-Higher Education**
- **Strayer**



Online Education Entrepreneurs vs. Higher Education

- **Focus on student needs and competition.**
- **Nimble, flexible, responsive, and speedy to market.**
- **Commercial grade marketing, sales, design and production skills.**



Online Education Entrepreneurs vs. Higher Education

- **Larger investments, more resources.**
- **Applies incentives and rewards to attract faculty and experts.**
- **No university bureaucracy.**



Choices and Challenges in Delivering Online Education



The Stanford Online Case



Stanford University

- Recognized as offering outstanding education and research programs.
- Research volume: \$523+ million annually



- Students:
6,591 undergrad
7,553 graduate
- Faculty:
1,595



“I have seen great value in offering my course to industry students, but I need it to be as easy and transparent as possible.”

**Professor Kos Ishii
Stanford University**



“What our engineers and managers are saying is that the demands of their jobs are such that they can’t get away from work. Since they are working 60 hours a week, any education they get has to be at their convenience and available online .”

Manager of Engineering Education
AMP, Inc.



The Stanford Challenge

- **Balance the need to strengthen Stanford industry relationships by offering career-long education while accommodating the interests and capacity limitations of faculty.**



Bridging Stanford and Industry



**Stanford University
Curriculum**



Industry Education



**Academic
Programs**

**Professional
Education**



Stanford Center for Professional Development



- Collaborates with Stanford faculty and industry experts.
- Design and deliver academic and professional education programs to engineers, scientists, managers and executives using a variety of elearning technologies.



SCPD Distance Education Portfolio

- **250 graduate courses leading to Master's Degrees in engineering, computer science, technology management and biosciences.**
- **28 certificate programs**
- **50 professional education courses**
- **26 research seminars**
- **50 courselets under development**
- **10,000 new program hours produced annually in digital form**



SCPD Customers

Top 30 in 2002

- Sun Microsystems
- Cisco Systems
- General Motors
- Lockheed Martin
- Agilent
- Intel
- Hewlett Packard
- Oracle
- Synopsys
- Nvidia
- Ford
- NASA-Ames
- IBM
- LLNL
- Space Systems/Loral
- United Technologies
- Xilinx
- Nat'l Semiconductor
- Cadence Design
- Altera
- Applied Materials
- NUS America
- Toyota
- Compaq
- AMD
- Microsoft
- Juniper Networks
- Adobe Systems
- Cypress Semiconductor
- Electronics for Imaging

Total = 420



SCPD Delivery Systems

- Five TV channels
- Two-way video
- Satellite
- Videotape
- Multimedia
- Online
- On campus
- Corporate sites
- Blended approaches

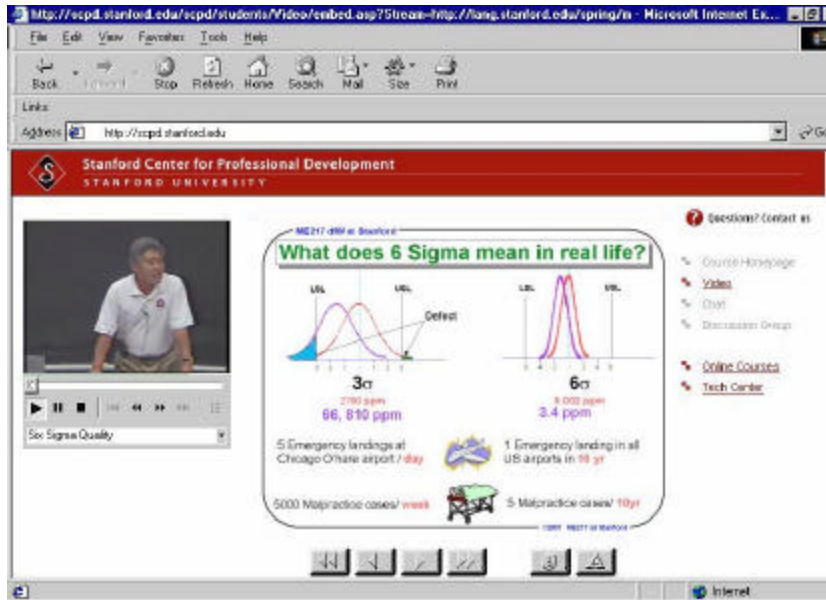


Stanford Instructional TV Network
Stanford Online





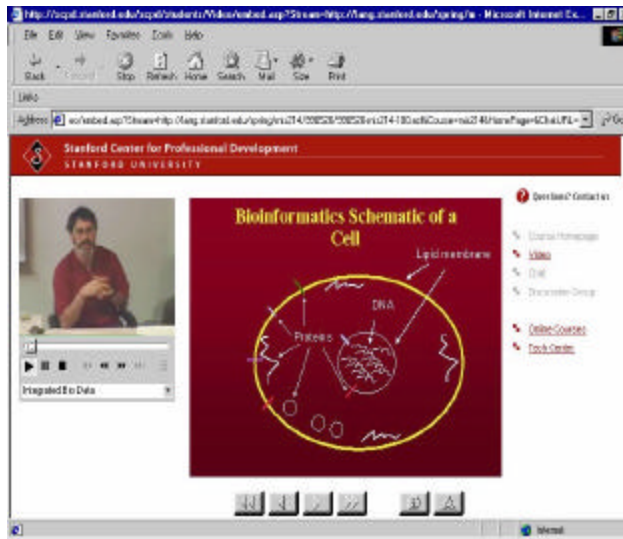
Stanford Online



- Delivers academic and professional education courses worldwide.
- Pioneered at Stanford, became award winning, recognized model.



Stanford Online



- Over 1500 online courses since 1997.
- Courses updated quarterly to maintain currency.
- Approach is transparent to faculty.
- Provides 24/7 technical support.



Online Education



**“Lessons Learned at
Stanford and Elsewhere”**



Lessons Learned

- **Online learning attracts students who would not otherwise have taken courses.**
- **Convenience and choice is critical for students at all levels.**
- **Best for motivated, disciplined, self-directed, mature students.**



Lessons Learned

- **Greatest online opportunities for universities are in professional education and corporate development especially in the “skilled sectors.”**
- **Equal emphasis in developing an online program needs to be placed on business, pedagogy and technology.**



Lessons Learned: Business

- **Online initiative needs to be consistent with institution's mission, strengths and areas of distinction.**
- **Must begin with a clear, worthy strategic mission and keep it close to core faculty. Use traditional academic structures to accelerate development.**



Lessons Learned: Business

- **Design online education initiative as a way to extend and enhance - not replace - academic programs. Develop a “focused niche” or “micro-market” approach to meet a market need and try to have program appeal to multiple audiences.**
- **Aim for the “sweet spot” -- intersection of audience needs and wants, faculty interests, university strengths and what people will pay for.**



Lessons Learned: Business

- **Think course-to-certificate-to-degree progression. Interdisciplinary programs matched to research initiatives are highly valued.**
- **Recruit best faculty by offering incentives and rewards. Address faculty concerns regarding ownership of intellectual property and increased demands and impact on workload.**



Lessons Learned: Business

- **Start small: pilot and test with existing students, alumni and focus groups. Experiment, adapt, improve. Think scalability. Use the “build it once, use it often” approach.**
- **Develop financial model that covers costs and investments and delivers revenue to sponsoring departments and faculty in order to show direct benefit in participating. Also point out non-revenue values.**



Lessons Learned: Business

- **Consider joint ventures for development, management, marketing and distribution of online courses but be careful around the business/university clash of cultures and values.**
- **Build strong e-student service support teams which provide “personal” contact and act as student guides and advocates. Ideally, this is a one-stop service.**



Lessons Learned: Business

- **Exceed student expectations in order to generate enthusiasm in the program. Consider the “surprise and delight” factor in student services.**
- **Online students want more than branding and image - they want credentials from an organization with a recognized reputation that will continue to exist.**
- **Strong brands with weak programs will diminish the reputation of the university.**



Lessons Learned: Pedagogy

- **It's not the content. Online students want access to degrees, certificates, classes faculty, fellow students, TA's and experts. Need to create a "community of learners" with synchronous and asynchronous interactions and teaming.**
- **Create mechanisms for faculty and academic development support.**
- **Online Education does not need to be "edutainment."**



Lessons Learned: Pedagogy

- **Provide students with electronic access to learning resources, tools and facilitators.**
- **Focus on small class sizes.**
- **Build in automatic grading and feedback wherever possible.**
- **Consider blending online and on-site activities.**



Blending: An Evolving Model

- **Pre-class online activities.**
- **Cohort group meets face-to-face.**
- **Asynchronous and live online sessions.**
- **Additional face-to-face sessions.**
- **Online post-evaluations.**
- **Continuing online discussions forums.**



Lessons Learned: Pedagogy

- **Develop rigorous assessment program on access, learning, cost effectiveness, learner satisfaction, and faculty satisfaction.**
- **Develop “bite-sized” chunks – small, self-contained units such as courselets.**



Stanford Online Courselets

- **Self-contained, integrated set of learning materials designed as an online custom tutorial.**
- **Fills knowledge gaps for learners.**
- **Offers self-tests and indexing to determine placement.**
- **Made available for use at other universities and industry education.**



Lessons Learned: Technology

- **It's not about technology, it's about serving learners.**
- **Create or outsource to obtain uniform course format that allows for optimum interaction, easy course development, interoperability and scaling.**
- **Administrative and technical support needed 24X7.**
- **Assess student's ability to use technology and build in training options.**



The Promise and Peril of Online Education



“What Does the Future Hold?”



**“I skate to where the puck
is going to be, not where it
has been.”**

Wayne Gretzky



- **It's here! Online education has been successfully implemented- with mixed elements of hype and reality- and its continued evolution in all sectors of education around the world is irreversible.**



- **Online education - as the intersection of learning activities, learning resources and enterprise systems - recognized as an essential function of universities and corporations.**
- **Minimal distinction between on-site and off-site students through networked learning communities.**



- **Focus of online education shifts from teaching to learning with students having more control of place, pace and modality.**
- **The student as consumer will establish program value.**



- **A shift from “just-in-case” to “just-in-time” to “just-for-you” education.**
- **Education and training organizations not rooted in time and place. Learning accessible from anywhere and available at all times via personal, portable, unified appliances. The future is M-learning!**



- **Technologies will support common standards for greater interoperability. Seamless solutions and invisible technology will be the norm.**
- **Online education winners will be those packaging complete end-to-end solutions- not simply offering courses.**
- **Degree programs further customized and aligned with corporate strategies.**



- **Continuum of seamless online education from high school...
to undergrad programs
to graduate programs
to professional education
to life-long enrichment
...creating a dynamic learner profile and
online educational portfolio.**



- **Market volatility and shakeout continues with alliances between higher education, professional associations, publishers, government, libraries, museums, and high tech companies.**
- **For-profit providers will gain additional share of higher education markets- but there will be fewer of them.**



- **More competition with fewer geographic monopolies for educational delivery.
An educational free market is evolving.**
- **Strong movement in outsourcing to application service providers.**



- **Evolution of non-traditional universities characterized by:**
 - **Assessment engines.**
 - **Customized curriculum maps.**
 - **Knowledge/skill modules.**
 - **Variable pacing.**



- **Short residencies.**
- **Distributed cohort groups.**
- **Competency certification.**
- **Intelligent tutoring using natural language communication.**



- **Prescriptive guidance and dynamically assembled content based on learner profile and preference specifications.**
- **Adaptive learning technologies with prediction of future education needs.**
- **Collaborative learning around problems and solutions.**



- **Emphasis on experiential, non-linear, scenario-based learning with simulations, immersion learningware, 3D and virtual environments.**
- **Unbundling of the design, development, delivery and management of education becomes a common practice.**



- **Accelerated development in the creation of reusable, sharable and platform-independent learning objects.**
- **Independent producers sell courses and award credits to the end-user, bypassing traditional institutions.**



- **Faculty members become increasingly independent of colleges and universities in the delivery of online education.**
- **Programs offered over an entire career evolve as a means to create institutional loyalty and leverage new relationships.**



“The scarce resource today is not bandwidth, but people who can create and innovate in the knowledge age.”

R. Birnbaum
“How Academic Leadership Works”



Presentation Slides

- <http://scpd.stanford.edu>
- Click “About SCPD”
- Slides on right side



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