eExecutives eLearning eBusiness

Creating eLearning Environments
From the Convergence of
Computing, Communication, and Cognition

Jack M. Wilson

CEO, UMassOnline

Vice President, University of Massachusetts

Professor of Management

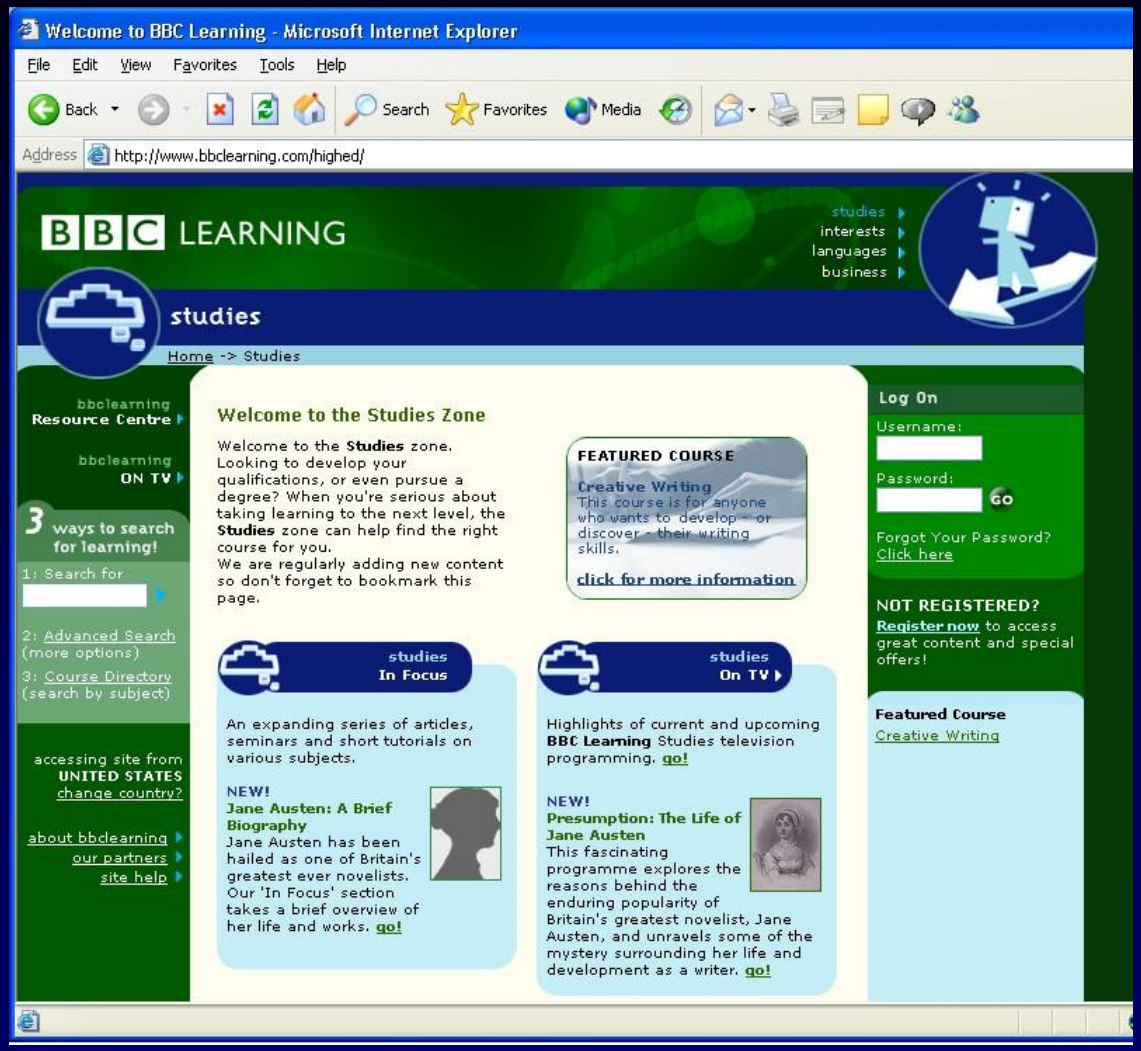
What shapes my views?

- Founding CEO of UMassOnline
- Experience at Rensselaer implementing
  - Studio Classrooms, Student mobile computing (laptop), Professional and Distance Education
- Founding LearnLinc Corporation (sold Feb. 2000)
- NAS/NRC Committee on Information Tech.
- NAS/NRC Physics Decadal Overview
- Pew Center for Academic Transformation ($8.8 M)
- LLEEP: Tech. Enhanced Entrepreneurship Ed.
- National Learning Infrastructure Initiative
- Lots of visits, speeches, writing, reading, and visitors

UMassOnline

- UMassOnline will end fiscal year 2003 with
  - over $12 million in revenues
  - 11,139 enrollments from “new” students
  - an annual growth of nearly 50%
  - 38 (and growing) degree and certificate programs
  - Serving the educational needs of students in Massachusetts, New England, and the U.S.
  - Over 500% growth in inquiries through portal
  - 55% of inquiries from outside Massachusetts.
  - 8% of inquiries from outside the U.S.

BBCLearning.com



studies with U.S. Universities

Degree and Certificate Programmes

Earn an accredited degree or certificate **entirely online** from these top US universities:

PENNSTATE World Campus

Penn State World Campus
Earn an MBA online, an associate's degree in hotel management, or certificates in Web design, communications and more from Penn State University's World campus.

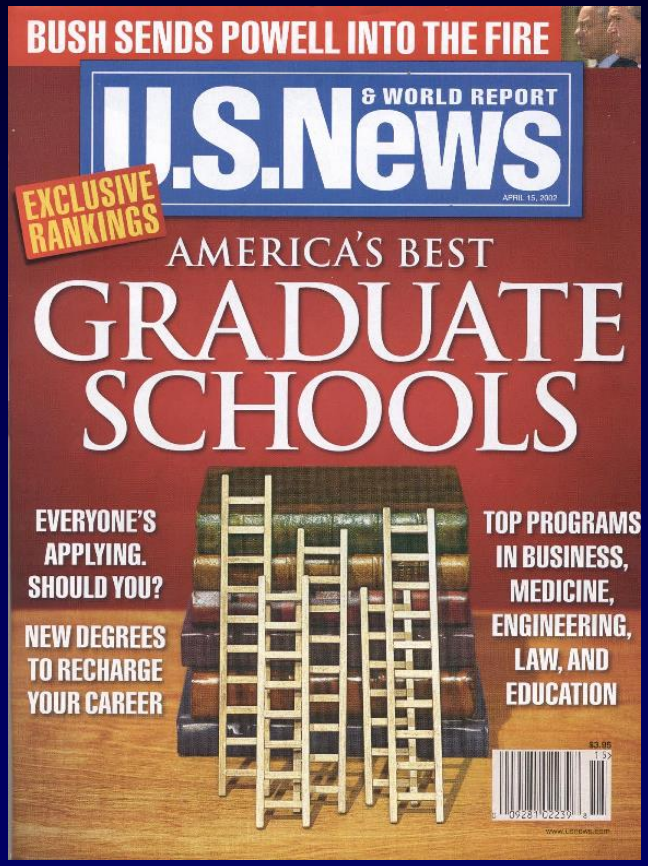
UCLA EXTENSION

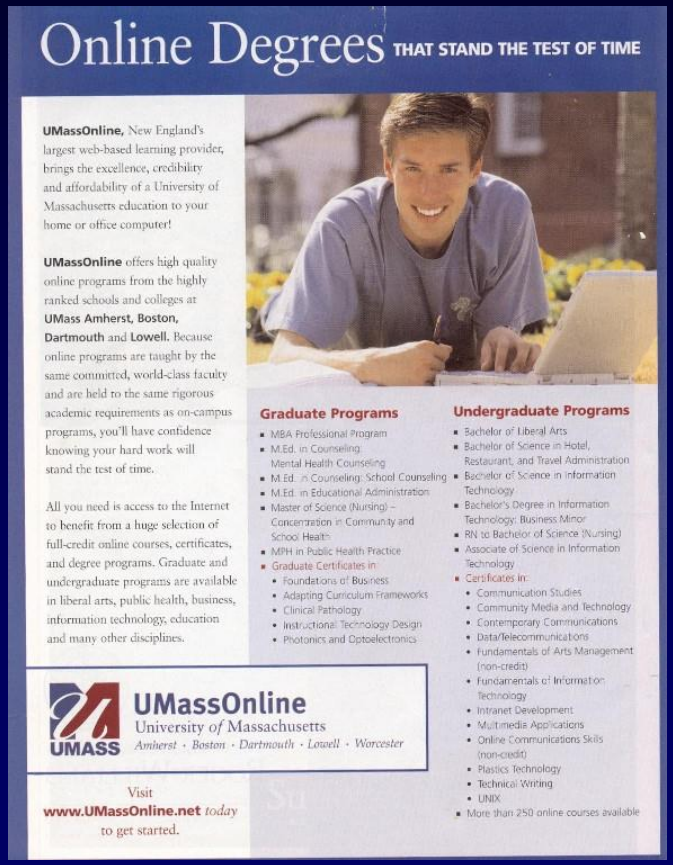
UCLA Extension
Improve your management skills with business certificate programmes, including accounting and finance, from the Extension program of University of California at Los Angeles.

UMASS

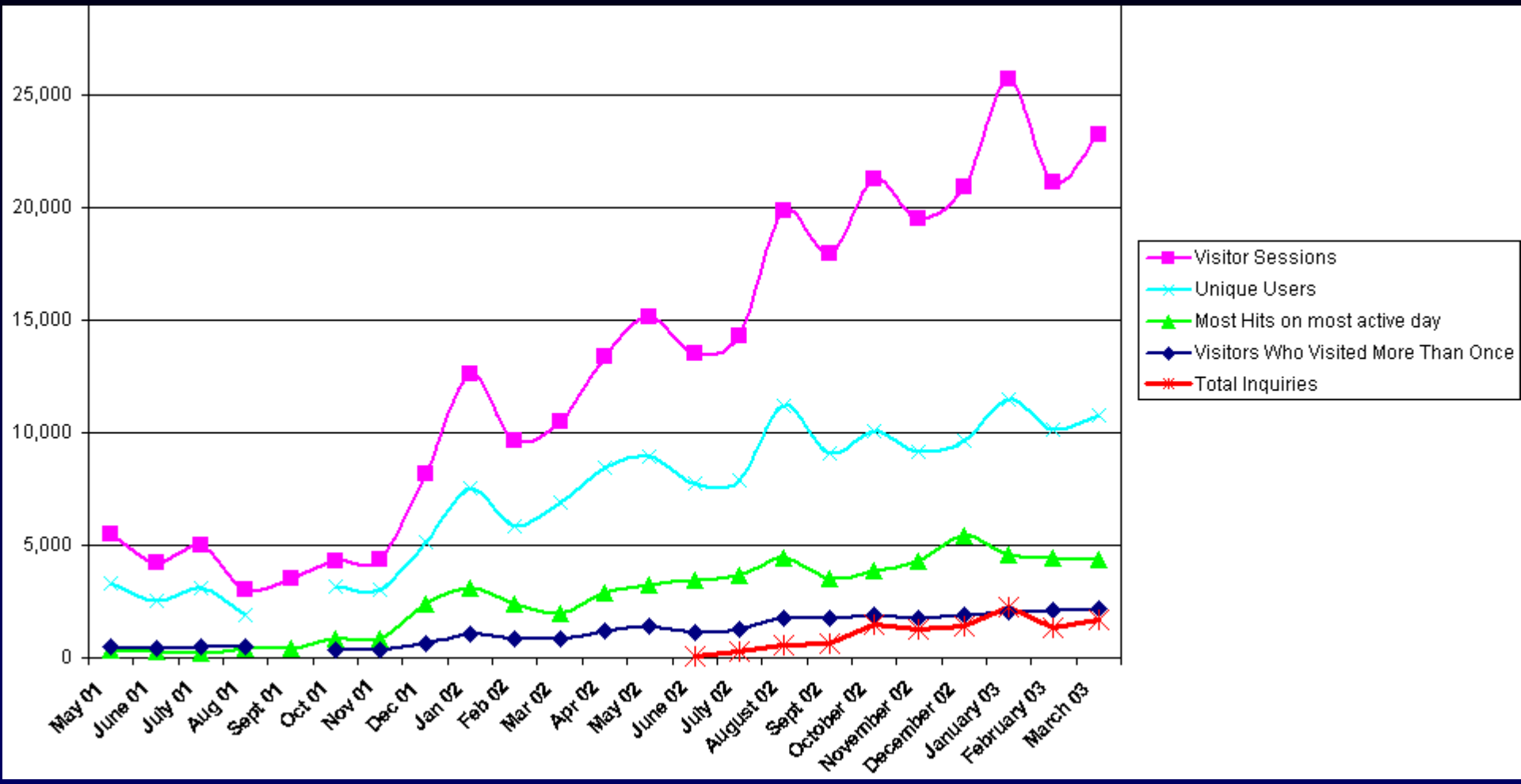
UMass Online
Choose from 25 leading undergraduate and graduate degree and certificate programmes in business, communications, science and more from the University of Massachusetts.

U.S. News and World Report

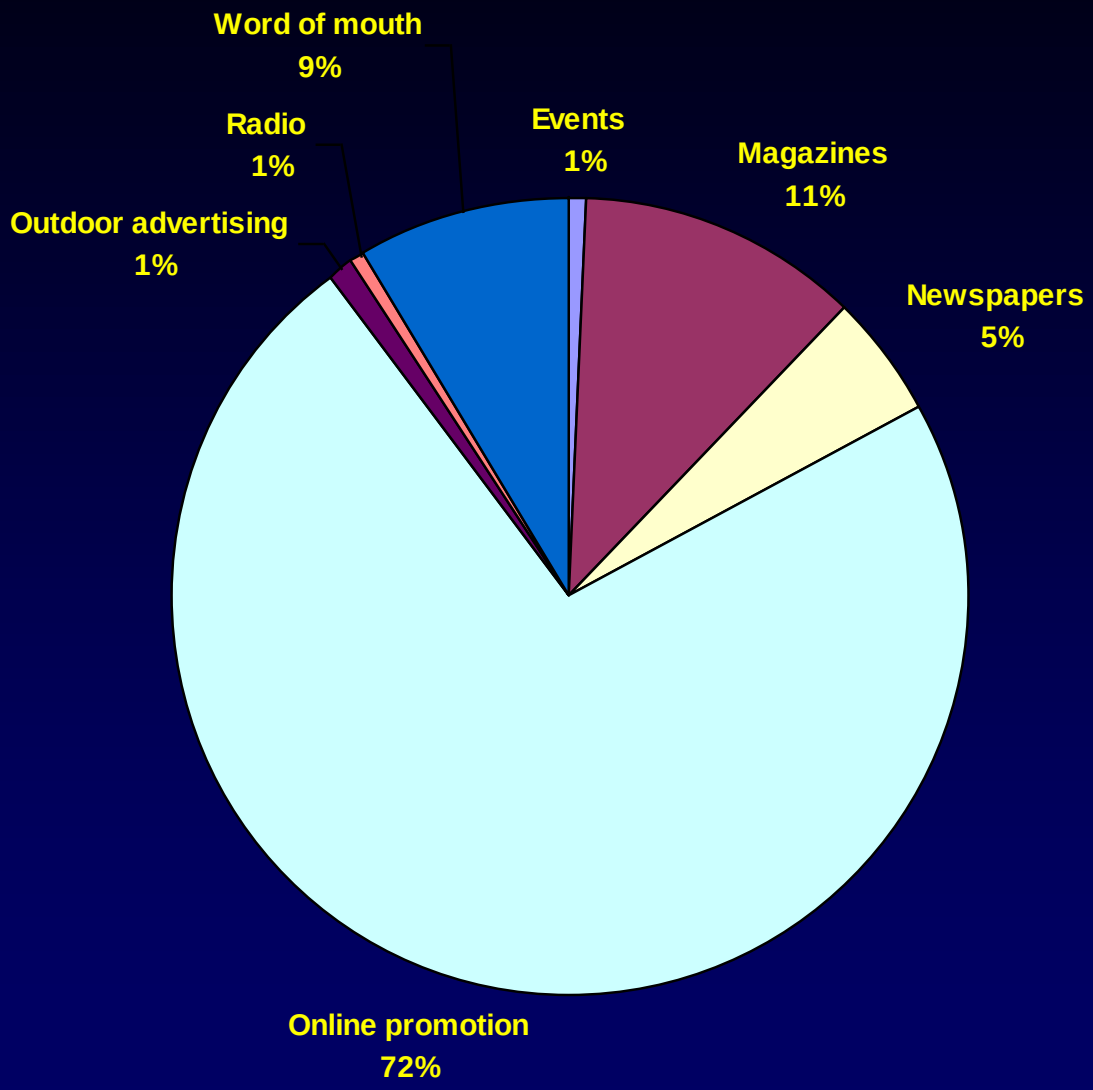




Portal Traffic



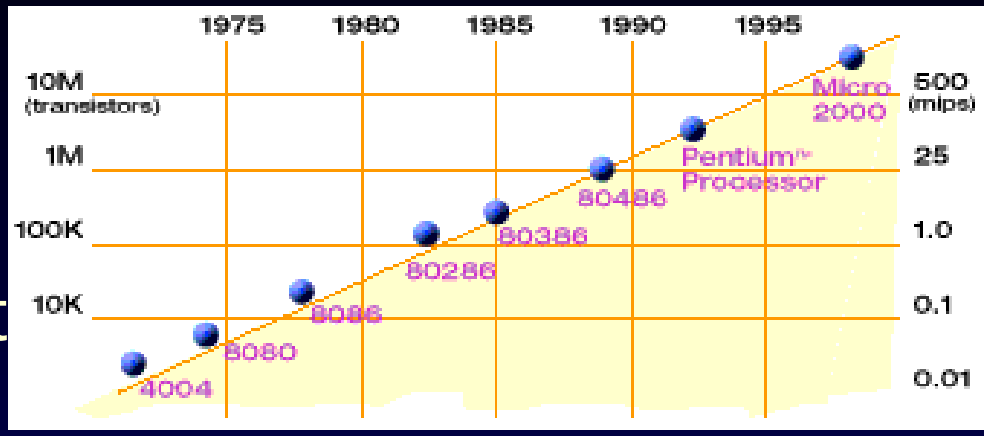
Inquiries by Source



RSVP at Rensselaer

- 12 Years +
- '93 Telecon "Best Distance Learning Program"
- '96 USDLA Industry-University Collaboration
- 1066 Students in Credit/Degree Courses(S99)
- Several hundred more in short courses
- Bringing education to the workplace
  - (GM, IBM, Lockheed Martin, AT&T, Lucent, Con Ed, GE, UTC, Pratt &Whitney, Ford, Intel,Applied Materials, Matsushita, Bugle Boy, Albany International, Key Bank, +++++)
  - US, Canada, Mexico, Europe, Japan, China

Wilson's Favorite Laws!



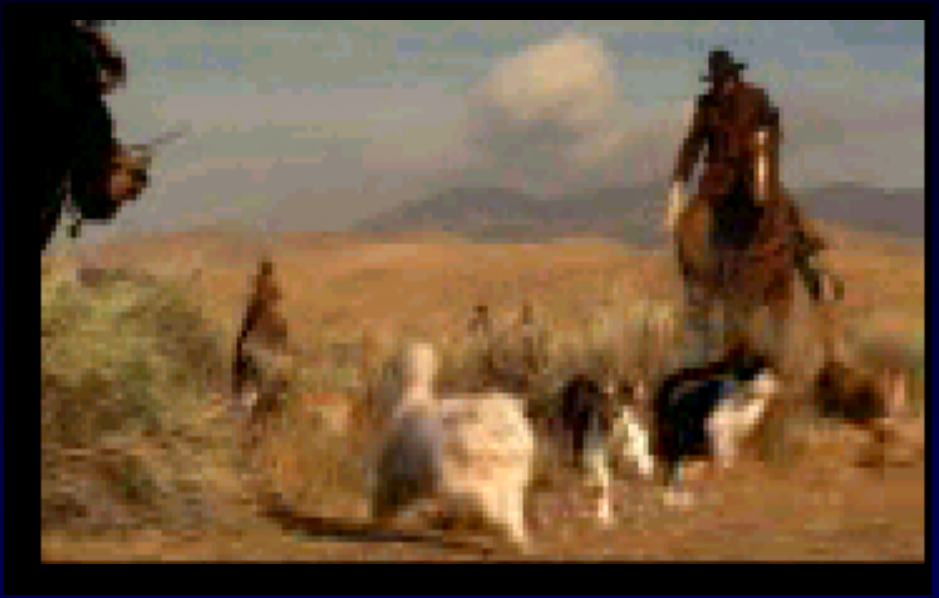
- Moore's Law:
  CPU performance
  doubles every 18 mont
- Bandwidth law:
  Bandwidth is doubling even faster!
- Metcalf's Law:
  the value of a network scales as n^2 where n is the number of persons connected.

Why we are running so hard?

- The Internet's pace of adoption eclipses all other technologies that preceded it.
  - Radio was in existence 38 years before 50 million people tuned in;
  - TV took 13 years to reach that benchmark.
  - The Internet crossed that line in 4 years, once it was opened to the general public.
- 1 internet year = 2 dog years = 14 people years

The horrible mismatch

- People change very slowly
- Technology changes very rapidly
- Do you feel like you are herding cats?



On the job training!

- Ever feel like you are building a plane in flight?

The Forty Year Degree

- Christopher Galvin, President Motorola:
- We are not hiring any more graduates with four year degrees.
- We want employees with forty year

The paradox of the Internet

- Entrepreneurs and Executives face a difficult challenge.
  - How can they keep up with the pace of technical change and the new economy business environment when they find themselves overwhelmed with work and with little time for traditional educational programs?
- These eExecutives are ideal candidates for high quality and high flexibility learning environments.
- We designed a series of courses for them leading to a certificate in eBusiness at the graduate level.
  - The courses could also form part of their program for an MBA degree, an MSES, or an MSIT.

What about the full time students?

- If you are a student studying in the MBA programs at the leading American universities, how can you tap into the expertise and experience of those who are right in the middle of business and technological innovation?
- How do you know whether the things you are learning will hold up to the test of corporate reality?

Connecting the cultures

- In Introduction to eBusiness these two groups were interacting every day.
  - The students in the room were about evenly divided between those who were employed by local industries during the day and full time MBA students.
  - Leading American corporations employed all of those students at a distance.

eExecutives eLearning

- One night per week, 75-125 executives and potential executives met on-line to learn eBusiness. (repeated at other times in subsequent semesters.)
  - Less than half sitting at desks with laptops with instructor
  - More than half scattered throughout world in their homes and at corporate sites including: General Electric, IBM. Ford, Intel, Sun Computer, J.P. Morgan, Lockheed Martin, Sikorsky, Carrier, Pratt and Whitney, Otis Elevator, Consolidated Edison, and Computer Sciences Corporation.
- Some corporation's participants were also scattered.
  - IBM: VT, MN, TX, NC, and all over NY.
  - Ford participants included Canadian as well as US installations.

eBusiness Course Components

- 1-2 hour live on line
- 2- 6 hours of asynchronous work
- Online research
- Online readings
- Homework questions submitted online
- Student teams present case each week.
- Threaded discussion questions over weekly case
- Individual paper analyzing strategy for one company.

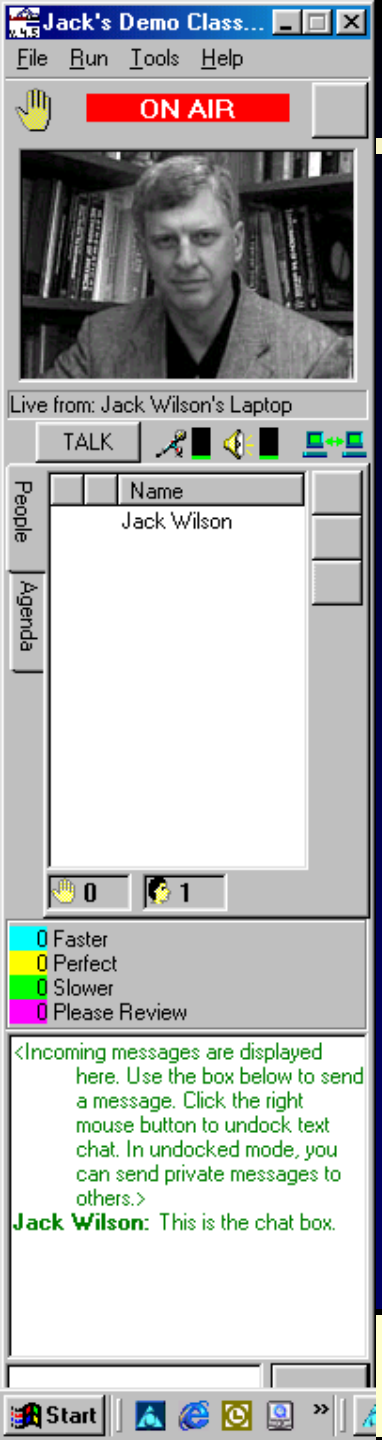
Graded Components

- Virtual Teams of 4-8 students wrote, presented, and defended a case for half of each live-on-line session. 12 cases.
- Each student individually followed a particular company and did a paper with a complete analysis from all perspectives studied.
- Graded threaded discussions
- Electronic submission of home answers

EBusiness Syllabus

- The Players
- Technologies of eBusiness
- Strategies of eBusiness
- Entrepreneurship in eBusiness
- The Finances of eBusiness
- ASP: Application Service Providers
- "Bricks"& Clicks": The Dinosaurs Strike Back
- B2B: Business to Business
- ERP: Enterprise Resource Planning
- Data Mining and the Data Rich Environment
- Marketing in eBusiness
- Law and Ethics in eBusiness
- Globalism

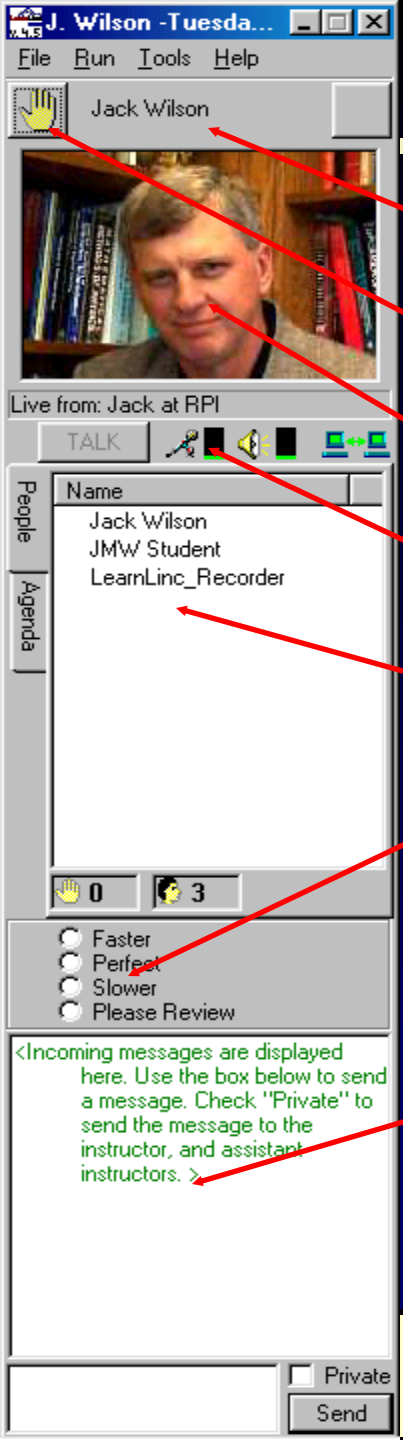
(http://www.jackmwilson.com/eBusiness/Class/index.htm)



A Live On-Line Course in eBusiness

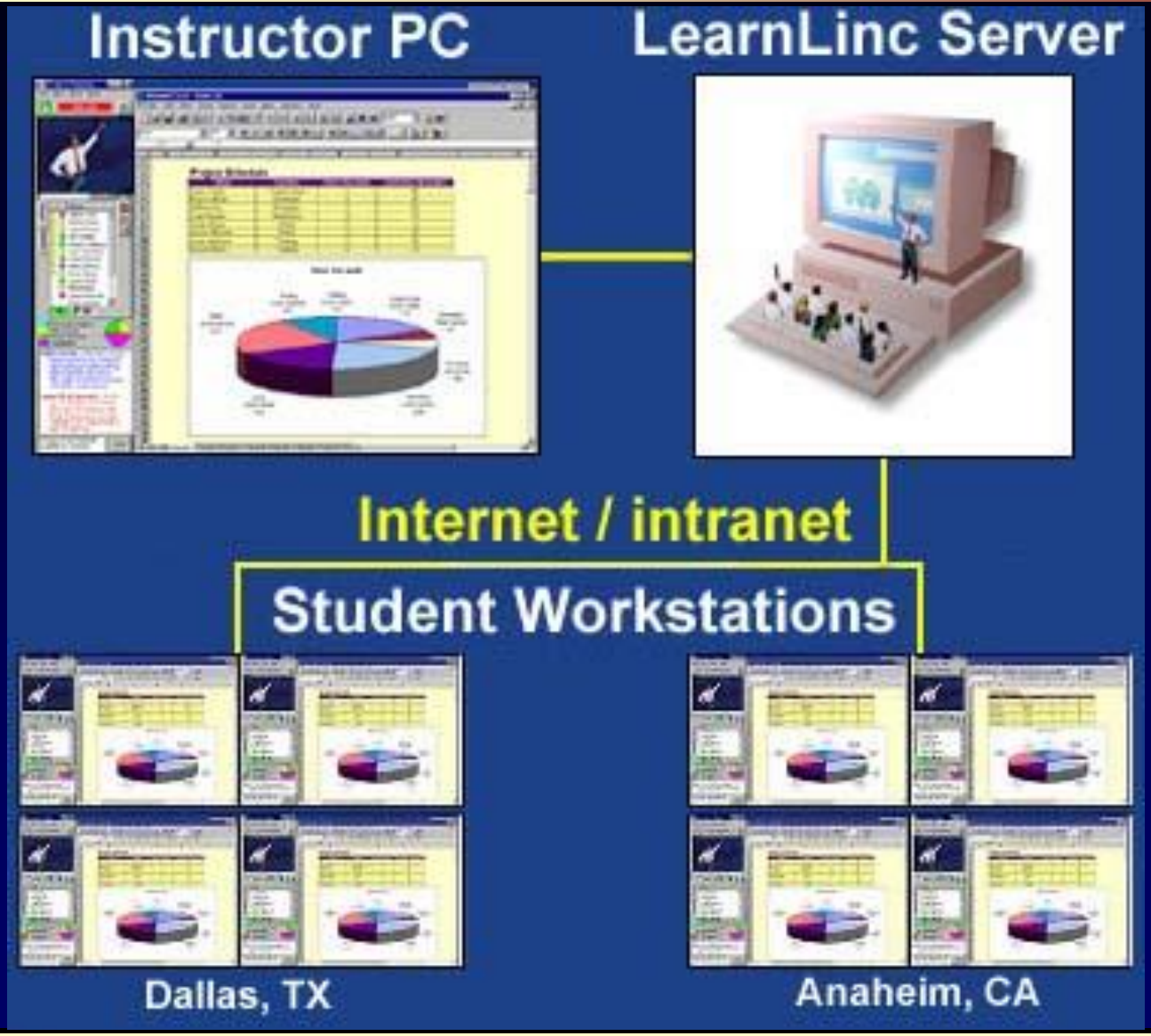
- A one semester course in eBusiness
- Offered in the blended model
  - Live session (2.0 hours per week)
    - All students (50-100) used LearnLinc for
      - Application sharing and collaboration
      - Polling
      - Testing
      - Group work
    - Could also be attended physically in classroom (~25 in Spring2000 and in 2001)
    - May also connect through video-conferencing
  - Asynchronous- Web based activity (1.25 hours – 6 hours)

LearnLinc Live-On-Line

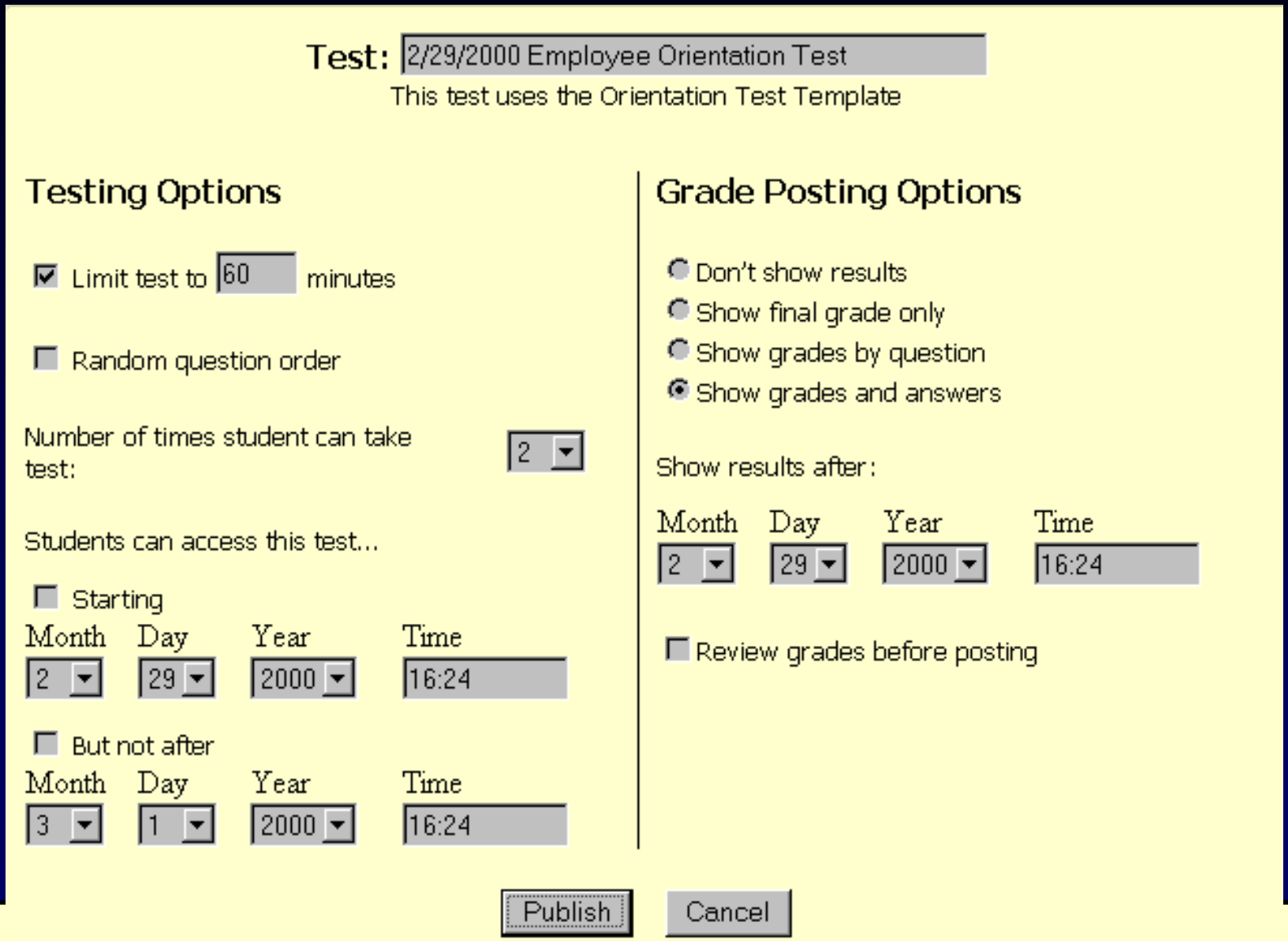


- On- Air indicator
- Raise your hand
- Picture or video of speaker
- Audio and Network controls
- Agenda or class roll
- Feedback section
  - (can be pace, agreement, T/F, Yes/No, etc.)
- Chat Window

LearnLinc 3.0



On-Line Testing (LearnLinc TestLinc)



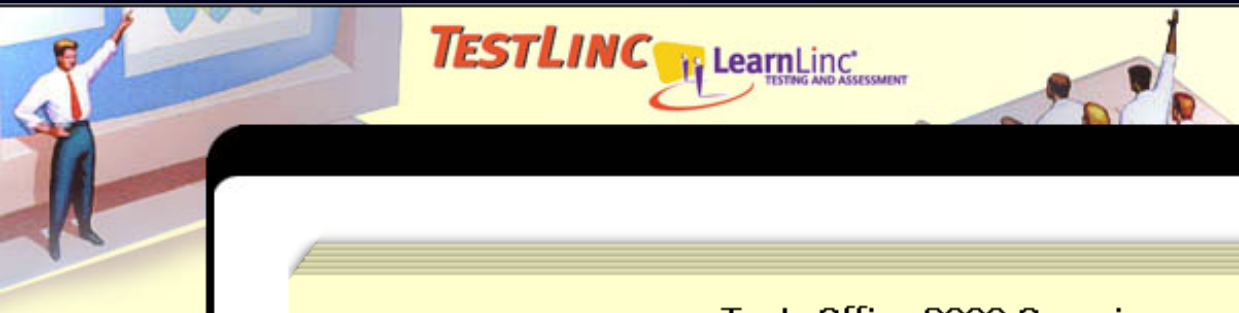
Student Results and Records

Test: Office 2000 Overview

Karen Ling

Question	Correct Answer(s)	Student's Answer(s)	Points Available	Points Awarded
Microsoft Office 2000 includes which of the following standard software applications?	1. Word 2000 2. Excel 2000 4. FrontPage 2000	1. Word 2000 2. Excel 2000 4. FrontPage 2000	20	20
The "desktop" is a metaphor used to represent an important part of your computer's graphical user interface (GUI).	True	True	20	20
The Microsoft Office 2000 software application that you can use for word processing is called	Microsoft Word Word	Word	20	20
. Microsoft Excel, another Office 2000 software application, is used to create	spreadsheets forms graphs	graphs		
. To create your corporate intranet site, you could use	Microsoft FrontPage FrontPage	FrontPage		

Record book



Folder List

Virtual Campus

Help

Test: Office 2000 Overview

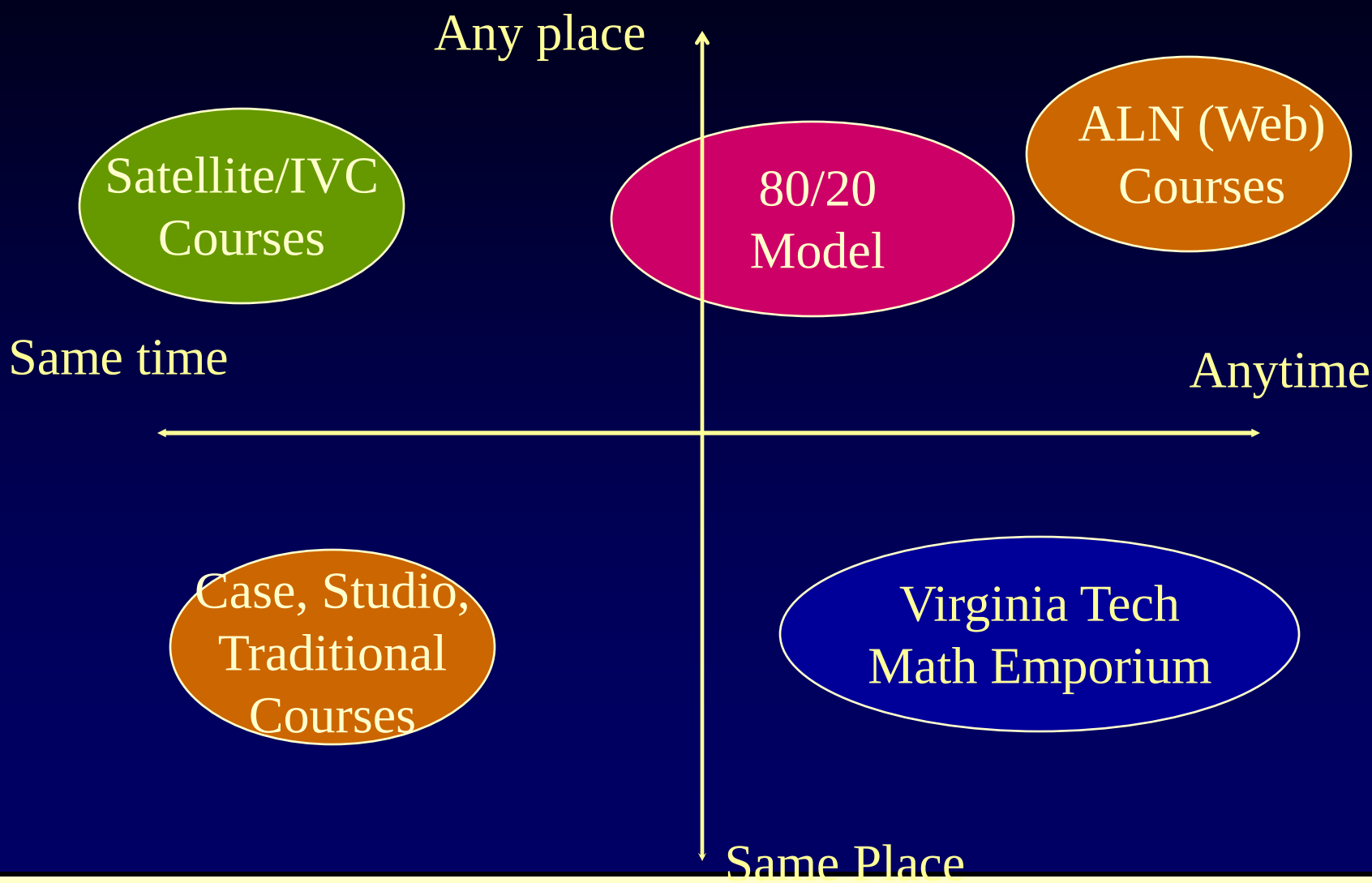
Click a student name to review individual test results.

Student	Date/Time Completed	Duration of Test (minutes)	Total Points	Awaiting Grade	
Arman Stattic	3/2/00 9:13:37 AM	1	80	No	Delete Result
Bernice Campollini	3/2/00 9:37:12 AM	5	60	No	Delete Result
Brian Mann	3/2/00 9:22:39 AM	8	100	No	Delete Result
Jude Sages	3/2/00 9:41:10 AM	1	80	No	Delete Result
Karen Ling	3/2/00 9:38:47 AM	0	100	No	Delete Result
Pamela Fraser	3/2/00 9:29:51 AM	2	73	No	Delete Result
Rumi Platek	3/2/00 9:42:58 AM	0	100	No	Delete Result

Done | View Statistics

Powered by LearnLinc

TEEE Course Models



Components from which to select

- Live-online mini lectures & discussions (VOIP)
- Live polling
- Java applets for interactive simulations
- Microcomputer based data acquisition
- Web based multimedia
- Online texts
- Customized homework.
- Threaded ALN discussion
- Live Chat
- Virtual laboratories and team based case studies
- On-line surveys and tests

NTU-Rensselaer Course

Hands-On World Wide Web

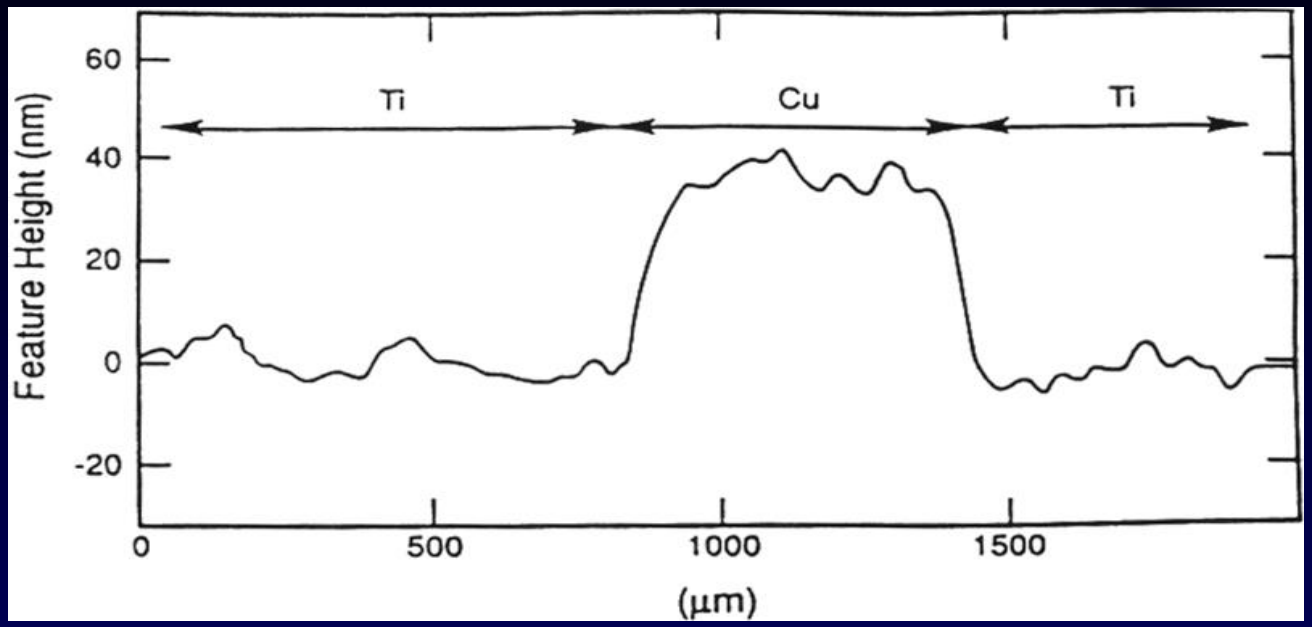
- Feb 10 & 17, 1998
- 8000 participants
- 500 sites
- Most successful NTU course ever
- “The future of satellite based education.”
  - Lionel Baldwin, President, NTU

Rensselaer and Hong Kong City U.

- Survival Skills for Astrophysics
- Professor Chun Ming Leung
  - Graduate Students in Astrophysics
    - Video/Audio/ LearnLinc Web Data Conf.
    - Both ISDN and Internet connection
    - 7 am Eastern (6 Hong Kong)
    - Student Collaborative Presentations
    - One Semester length

Chemical Mechanical Planarization

- RPI/Intel/Applied Mat./ Matsushita/IBM
  - New York; Osaka, Japan; California; Arizona; Texas
- Murarka, Schowalter, Duquette
  - (Introduction to Copper Metalization)
  - (Wall Street Journal article)
- Month long course to engineers and scientists in the workplace.
- Video/Audio/LearnLinc Web data Conf.
  - ISDN and Internet
  - ProShare, PictureTel, Panasonic multipoint



- Profilimeter trace showing dishing of the titanium liner relative to the adjacent recessed copper metal. An electrochemical interaction between the copper metal and the titanium accelerated the normally low polish rate of titanium to produce the negative dishing

U.S. Problem

- Few high school students studying math & physics
- Lack of qualified teachers
- Rural and inner cities are particularly bad
- Solution:
  - LearnLinc used to teach physics over the network
  - Funded by:
    - AT&T
    - Lucent
    - Bell Atlantic
    -

Remote Physics Course

- Introductory Calculus Physics
- Delivered via ILINC LearnLinc
- Cobleskill High School in rural upstate NY
- Collaborative between the physics teacher at Cobleskill ar
  graduate students at R

LearnLinc Client

File Run Tools Help

Nichole

Live from: San Francisco, CA

Mute

People | Agenda

Name

Isaiah Beres
Owen Carter
Tom Elliot
Wally Emerson
Ben Frank
Geoff Gamache
Alicia Hoffman

2 25

0 Not much progress
5 Still working
7 Almost finished
13 Completed

Nate: Yes. Could you please review the chapter on formating graphs in Excel?

Raise your hand when you see the AppShare window.

Send

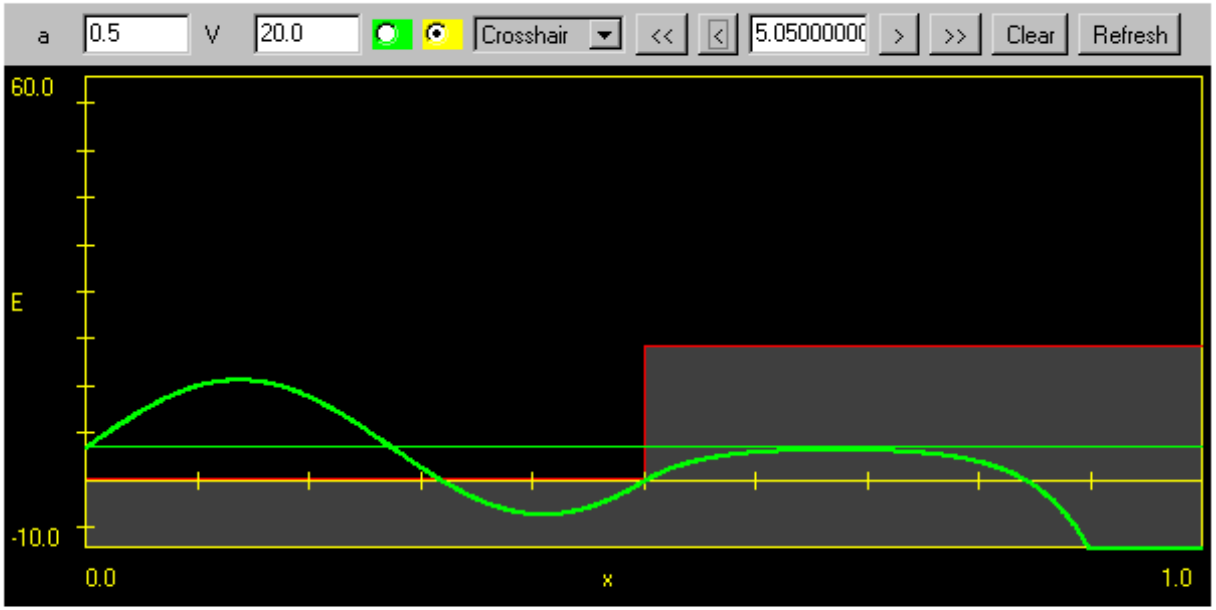
SquareWell - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

Address D:\JavaPrograms\cde\SquareWell.html Go Links

This illustrates the solution of a quantum well with an infinite wall at x =0 and a finite potential of 20 V at x = 0.5 nm. - Jack Wilson



Author: Jack Wilson

Using the buttons to each side of the Energy window, you can adjust the energy of the particle in the well to see if the energy leads to a bound state. In a bound state the wavefunction will satisfy the boundry condition at infinity (on the right). It must go to zero to do that. You should find several bound states of the particle for the energy selected here.

Notice that you can select various annotation possibilities, including "Crosshair," "Derivative," "Integral," and "Chalk." You can use each one in combinations with the mouse and mouse button

You ain’t seen nothin’ yet

- Remember Moore’s Law, the Bandwidth Law, Metcalf’s Law.
- Present asynchronous courses are primitive and rudimentary precursors to real distributed learning.
- Don’t wait, get started now.
- “Don’t look back, somethin’ might be gaining on you.” –Satchell Paige

Dr. Jack M. Wilson
www.umassonline.net

jackmwilson@jackmwilson.com
http://www.JackMWilson.com

The End

Ten Commandments of TEL

1. **Restructure around the learner**. Neither over-emphasize nor under-emphasize technology.
2. **Build upon research results**, which inform design; don't try to reinvent the wheel.
3. **Remember that technology has an intrinsic educational value beyond helping students learn better**.
4. **Do systematic redesign and not incremental add-ons**. Do not automate the lecture. There is always a tendency to just add on a few computer experiences to everything else. By definition this costs more, is more work for faculty, and adds to the students' burden.
5. **Benchmark your plans** and build upon examples of systematic redesign. Find the best examples and build upon them.

Ten Commandments of TEL

6. **Count on Moore's law** ("What is hard today is easy tomorrow"). Eg., CPU power and bandwidth relentlessly double.
7. **Cost is an important aspect of quality**. There is no lasting quality if there has been no attention to cost. There are more than enough examples of expensive high quality solutions.
8. **Avoid pilots that linger**. Design for a large scale and pilot projects only as a prelude to scaling up. It is easy to design innovative educational experiences that work for small groups.
9. Develop a **balance between synchronous and asynchronous** distributed learning.
10. **There is no longer any way to do good scholarship without technology, and there is no longer any way to teach good scholarship without technology.**