

# *Introduction and Background*

Distance/Asynchronous Learning Tutorial  
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# Outline

- State of Higher Education
- Technology-Assisted Teaching & Learning
- Higher Education's Response
- Tutorial Overview

# University Eras

- Socratic Dialog
  - 4<sup>th</sup> century BC to 11<sup>th</sup> century AD
  - Discussion lead by experienced teacher
  - Students go to great teachers to learn
- Modern University – U of Bologna
  - 11<sup>th</sup> century AD to present
  - Collection of scholars – shared resources and community
  - Students take classes from different teachers
- Printing Press
  - 14<sup>th</sup> century invention
  - Major impact on distribution of educational materials

# Higher Education Today

- Mixture of public and private institutions
  - Calif Plan revolutionized public education (1960)
    - UC (12.5%), CSU (30%), and JC (100%)
    - Many states and nations copied the plan
- Formative education
  - Traditional 18-22 year old program
  - Focus on broad education with major emphasis
  - Serves to train and certify individuals for work
- Continuing education
  - Professional and technical training for work force
  - Lifetime enrichment

# Higher Education Today (cont.)

- Accreditation through peer review
  - Certifies that program meets minimum requirements established by community
  - Six regional accreditation boards (e.g., *Western Association of Schools and Colleges*)
- Pressures on colleges and universities
  - Educate more people for less money
  - Provide on-demand continuing education for industry
  - Solve many social and scientific problems

# Typical Classroom

- Students sitting at desks
  - Desks provide surfaces for taking notes
- Instructor lectures and/or leads discussion
  - Floor controlled by instructor
  - Student requests floor by raising hand
- Technology
  - Presentation material viewed by all students (e.g., black/white boards, projectors, etc.)
  - Laboratories provide specialized “stations” for particular work activities

# New Educational Technology

- Introduction of television
  - Hailed as great opportunity to change education - *didn't happen!*
  - Used to present predefined material
  - Used in most distance learning programs
- Introduction of computer
  - Hailed as great opportunity to change education - *is happening!*
  - Changed communication with/between students (e.g., eMail)
  - Changed class administration (e.g., web sites)
  - User-centered learning – student works with on-line material to learn rather than sitting passively in lectures

⇒ *Technology-assisted Teaching & Learning*

# Distance Learning

- Correspondence courses
  - Student reads material and submits work to instructor at a different location
  - Began in 19<sup>th</sup> century with introduction of reliable postal services
  - Natural extension to computers and Internet
- Broadcast instruction (radio/TV)
  - Student watches or listens to lecture on TV or radio
  - Live (synchronous) or off-line (asynchronous) program
  - Radio-based instruction began in 1920's
  - Televised instruction began in 1950's
  - Live interaction impossible between students and instructor or other students

# Distance Learning (cont.)

- Audio/video conferencing
  - Supports two-way audio and/or video between remote students and local participants
  - Variety of technologies (e.g., television, video conferencing, webcasting, etc.)
  - Opportunity to incorporate remote instructors and computer-based material
- Internet streaming media
  - Use webcasting and collaboration software
- Mixed technology strategies

# Era of Change in Education

- Society and industrial need for change
  - Roughly 80% of US adult population has HS degree
  - Roughly 30% of US adult population has BA degree
  - Industry need more college educated people
  - Training required changes over work life-time
- Technological imperative to change
  - Computer-based training improves quality and/or reduces cost of education
  - Low-cost multimedia computers and broadband networks offers hope for “any time, any where” on-demand education

# Educational Community Response

- Offer new courses and programs
  - Continuing education, part-time degree programs, and “certificate” programs
  - Develop new degree programs and specialties within conventional programs
- Virtual universities
  - Western Governors University, etc.
- For-profit universities
  - Univ of Phoenix, UNext.com, Pensare, etc.

# DL Case Studies

- U of Minnesota
  - Full-/part-time degree programs – must be admitted
  - Continuing education program
  - Remote/local attendance to many classes
  - Mixed technology (e.g., tv instruction, webcasting)
- National Technical University (NTU)
  - Part-time degree and continuing education programs
  - Redistribute classes from other colleges/university
  - Satellite distribution, moving to webcasting

## DL Case Studies (cont.)

- University of Phoenix
  - Part-time degree and continuing education
  - Local learning centers and on-line learning program
  - Technology?

# Academic Challenges

- Faculty objections

  - Who owns content produced by faculty member for a class – what about the “lecture performance?”

  - Workload and perceived quality/image

- Educational quality

  - Are distance and Internet learning approaches as effective as traditional approaches

- Cost

  - Average cost/year: private \$21K, public \$8K

  - Can we double the college population?

# Tutorial Overview

- Education and pedagogy issues
  - What has been tried, what works, what doesn't work, etc.
- Technology
  - Equipment, facilities, and transmission
- Collaboration technologies
  - Video conferencing, webcasting, data sharing, etc.
  - Operational issues
- Future vision and research
  - What's likely to happen
  - Research problems and approaches to explore