Providing Exemplary Technology-Based Instruction to Preservice Teachers

Community colleges are fast becoming a critical segment impacting on the K-12 arena with over 40% of all teachers completing some or all of their science and mathematics coursework at two-year colleges

Session Objectives

- Define “Exemplary Technology-Based Instruction”
  - Internet-based applications
- Describe how community colleges are learning about and implementing these applications
- Describe how you can learn more and develop these applications at your college
How do you use the Internet w/ your students?

- Publishing Student Lab Reports online
- Finding Lesson Plans
- e-Pal Exchanges, Telecollaborative projects
- Publishing Student Papers to the Web
- WebQuests
- Simulations
- Historical Diaries
- Virtual Labs (Interactive Frog Dissection)
- Using Online Quizzes
- Online Textbook
- Weather Satellite images
- Real-time data
Internet-based Applications

21st Century Workforce Skills

Advanced

Basic

21st Century Workforce Skills Scale of Intuitiveness

Online Quizzes

Online Textbook

Lesson Plans

Simulations

Virtual Labs

Web Quests

Historical Diary

Student Web Page

Real-time Data

Unique and Compelling

Online Telecollaboration

Preparing Tomorrow’s Teachers to Use Technology

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Let’s take a look at some examples…
Unique & Compelling Applications

**Unique**
Cannot be done without Internet technology

**Compelling**
Provides students with real world learning experiences

*Internet applications can provide a revolutionary new instructional tool that can create opportunities for students to engage in more authentic learning.*
A Whole New World…

“…when the students realize what Unique & Compelling means … and it suddenly opens up a whole new world to them, and I remember feeling that way myself.”
Session Objectives

✓ Define “Exemplary Technology-Based Instruction”
  ✓ Internet-based applications

● Describe how CC are learning about & implementing these applications

● Describe how you can learn more and develop these applications at your college

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Funded by Preparing Tomorrow's Teachers to Use Technology (PT3) Grant
The Pathways Project: Background

**GOAL:** “…to strengthen community college math, science, language arts and educational technology courses to ensure that they prepare preservice P-12 teachers to make effective use of innovative Internet-based tools and curriculum resources in the classroom”.

**VEHICLES:**

- 26-hour, 8-session, blended mode faculty development program, *Savvy Cyber Professor*
- Library of Real World Learning Objects (RWLOs)
The Pathways Project: Background

- 3 year program involving faculty from 33 community colleges
  - Four (4) faculty per college
- Grew out of 6-year TICG partnerships
- Adapts a proven set of K-12 training & curriculum materials for use in community college courses
- Focus on community college role in pre-service teacher education
Pathways
Community College Pathways to Improved Teacher Preparation Through Technology

Developed PD program

The Savvy Cyber Professor
Internet-Based Activities for Higher Education

Participating faculty create library of …

Real World Learning Objects
Authentic Investigations Using Internet-Based Applications

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Savvy Cyber Professor Overview

- 26-hour, eight-session professional development course
  - Hands-on / online format
- Incorporate and model new teaching strategies for pre-service teachers
- Develop *Real World* learning objects using U&C Internet applications in:
  - Science, Math, Educational Tech., & Language Arts
Real World Learning Objects (RWLOs)

- Concise core instructional activities focused on **discrete topics** in higher education
- Engage students in authentic activities possible only through use of the **Internet**
- Compelling **real world** learning experiences
- Easily used in similar courses at other institutions
  - Let’s look at some examples on the web…
Real World Learning Objects
Internet-based Activities for Higher Education
Language Arts

Understanding the Writing Process through Walt Whitman's notebooks

Project Overview

Walt Whitman (1819-1892) was one of America's most well known and influential writers of his time. Born in New York, Whitman wrote extensively throughout his life although he is most famous for his poems, particularly his collection published under the title of *Leaves of Grass*.

Students will investigate the writing process by reviewing how Whitman revised and refined his ideas and poems as he wrote by comparing the published version of his poem "Quicksand Years" to two early drafts written in one of his original notebooks digitally archived in the Library of Congress American Memory collection.

*(NOTE: the notebooks have been digitally archived by the Library of Congress and can be located in the Thomas Biggs Hamed Walt Whitman Collection)*

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Earthquakes, a scientific and physical phenomenon, affect our lives in many ways. In this project, students use real-time global earthquake data from the Internet to explore the relationship between earthquakes and plate tectonics.

Through first-hand data analysis, students will be able to determine if there is any pattern to earthquake events and speculate on the causes of earthquakes.

This RWLO intended to be used as an opening exercise to a unit of study on earthquakes.

(Note: this RWLO is based on the Musical Plates Project)
America

Centre of equal daughters, equal sons,
All, all alike endear'd, grown, ungrown, young or old,
Strong, ample, fair, enduring, capable, rich,
Perennial with the Earth, with Freedom, Law and Love,
A grand, sane, towering, seated Mother,
Chair'd in the adamant of Time.

http://www.whitmanarchive.org/archive1/photos/1870s/docs/045.html
Session Objectives

- Define “Exemplary Technology-Based Instruction”
  - Internet-based applications
- Describe how community colleges are learning about and implementing these applications
- Describe how you can learn more and develop these applications at your college
Every faculty develops one RWLO for use in CC courses
Peer-reviewed for acceptance to library
By end of year 3, access to library of 200+ RWLOs!

http://www.stevens.edu/ciese/pathways/rwlo/
Integration of RWLO in Course

“I put the RWLO together so it could be used in the first week of class, in the last week of class... there’s a lot springboards that you could use the RWLO for, for example...
How to Get Involved…

- 30 CC’s selected by competitive application process to participate in Savvy Cyber Professor program (4 faculty per CC)
- More information available by registering on Pathways web site
- 12 CC – Fall 2005
- 18 CC – Fall 2006
For More Information

Pathways Project Web Site

http://www.stevens.edu/ciese/pathways/

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