Enhancing the Learning Experience:
Teaching, Students, and Cyberinfrastructure

Joan K. Lippincott
Coalition for Networked Information
September 17, 2004

Teaching and Learning with
Technology at USC

Overview

- Teaching and Learning with Technology
- The Campus Cyberinfrastructure

What type of learning?

- "Deeper Learning"
  - Social
  - Active
  - Contextual
  - Engaging
  - Student-owned

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Principles derived from:

- National Academies *How People Learn*
- Chickering and Ehrmann
- John Seely Brown
- Theodore Marchese
- W. David Merrill

Promote Deeper Learning

- Learning is social
  - Encourages contact between students and faculty
  - Emphasizes rich, timely feedback
  - Promotes reciprocity and cooperation among students

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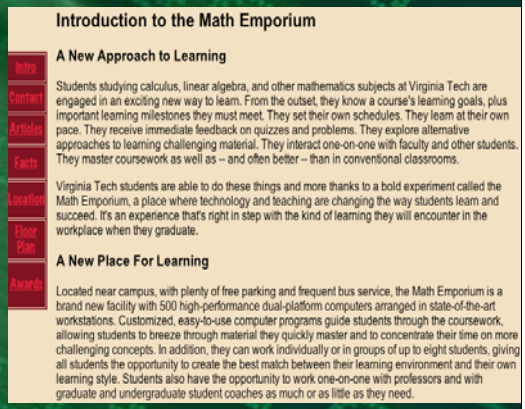
Encouraging feedback

- Large classes
  - Successful use of Personal Response Systems (PRS) at USC

Va. Tech Math Emporium

- Self-paced
- Individual or small groups
- Huge facility
- Personal onsite assistance



Introduction to the Math Emporium

Intro
Contact
Articles
Facts
Location
Floor Plan
Awards

A New Approach to Learning

Students studying calculus, linear algebra, and other mathematics subjects at Virginia Tech are engaged in an exciting new way to learn. From the outset, they know a course's learning goals, plus important learning milestones they must meet. They set their own schedules. They learn at their own pace. They receive immediate feedback on quizzes and problems. They explore alternative approaches to learning challenging material. They interact one-on-one with faculty and other students. They master coursework as well as -- and often better -- than in conventional classrooms.

Virginia Tech students are able to do these things and more thanks to a bold experiment called the Math Emporium, a place where technology and teaching are changing the way students learn and succeed. It's an experience that's right in step with the kind of learning they will encounter in the workplace when they graduate.

A New Place For Learning

Located near campus, with plenty of free parking and frequent bus service, the Math Emporium is a brand new facility with 500 high-performance dual-platform computers arranged in state-of-the-art workstations. Customized, easy-to-use computer programs guide students through the coursework, allowing students to breeze through material they quickly master and to concentrate their time on more challenging concepts. In addition, they can work individually or in groups of up to eight students, giving all students the opportunity to create the best match between their learning environment and their own learning style. Students also have the opportunity to work one-on-one with professors and with graduate and undergraduate student coaches as much or as little as they need.

Promote Deeper Learning

- Learning is Active
  - Engaged in solving real-world problems
  - Practice and reinforcement are emphasized

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Project THEORIA: A Lab for Ethical Reasoning

Carnegie Mellon Center for the Advancement of Applied Ethics

— Projects —

Home
Mission
Projects
CD-ROM
Web Materials
Project Theoria
Speakers
Faculty
Multimedia Lab
Membership

Center for the Advancement of Applied Ethics
Baker Hall 148
Carnegie Mellon University
Pittsburgh, PA 15213
412-268-7641 (Office)
412-268-1440 (FAX)

Project THEORIA

Project THEORIA: Testing Hypotheses in Ethics: Observation, Reality, Imagination, and Affect is the flagship title that guides the development of our work. We seek to provide a theatre wherein to test various theories and hypotheses relating to concrete case studies.

The studies themselves incorporate narrative and thick description and place a high value on reflective engagement.

Interactive Multimedia CD-ROMs

The Center's award-winning CD-ROMs focus on topics like a burn patient's right to die, the issue of abortion in America, and the area of Conflict Resolution.

Web-based Materials

There are several kinds of web-based materials developed by the Center. These include on-line course materials and multimedia case studies.

Carnegie Mellon Home | H&SS Home | Philosophy Home

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A Right to Die? The Dax Cowart Case

This CD-ROM focuses on a burn patient, Dax Cowart, and his request to stop treatment and be allowed to die. The CD-ROM is published by Routledge and their site contains more information about this program. An earlier version of this program won the 1989 EDUCOM Award for Best Humanities Software.

The CD-ROM was also used in a five year assessment study which established a statistical difference in learning outcomes with this media compared to its functional equivalent in text and film.

Engaging students through games

- Serious Games Initiative
  - Woodrow Wilson International Center for Scholars
  - Forge links between electronic games industry and educational games
  - Games for education, training, health, and public policy

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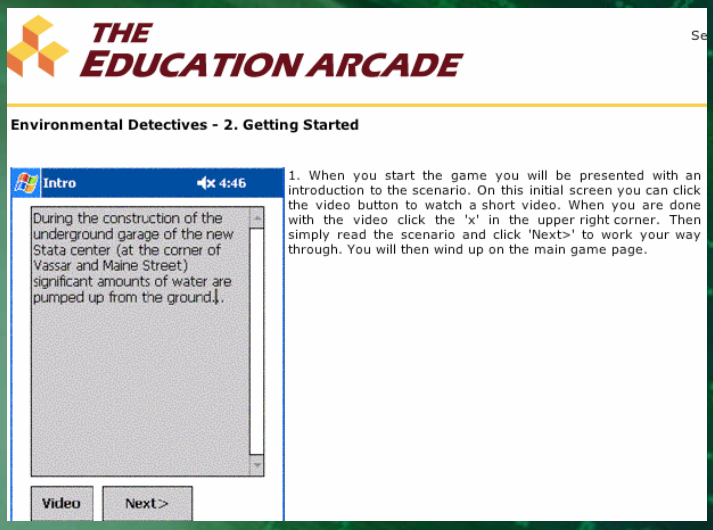
Environmental Detective



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Engaging students in virtual environments

- Mughal India
  - Produced by British Museum
  - Interactive, engaging, dynamic
  - Content includes representations of paintings, coins, weapons, jewelry, and models
  - Reference materials such as timelines and an atlas are available

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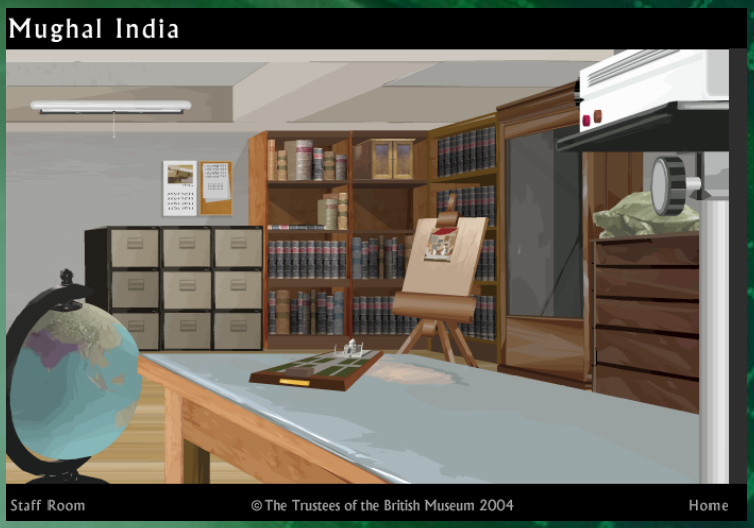
British Museum website



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Promote Deeper Learning

- Learning is contextual
  - New knowledge builds on the learner's existing knowledge
  - Knowledge is applied by the learner

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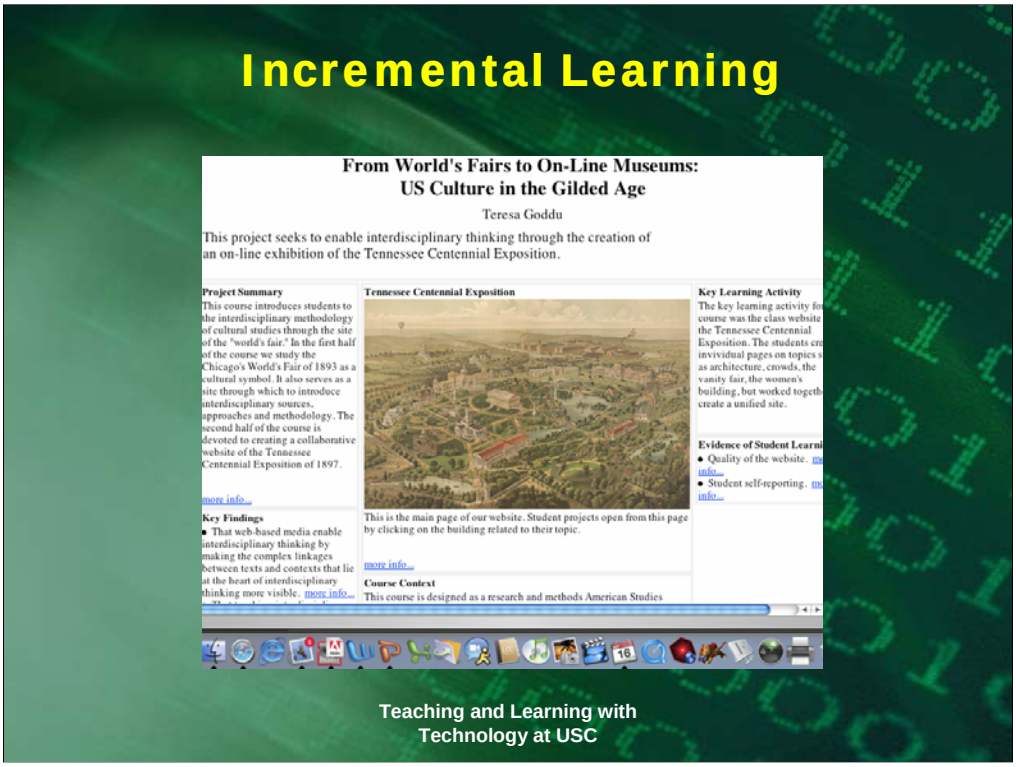

This course is part of a project called Visible Knowledge, coordinated at Georgetown U. but multi-university, working with faculty involved in TLT who wish to document the impact of pedagogical and technological innovatons on student learning in their own classrooms.

This example of an American Studies course describes how students study the Chicago World's Fair and then build on that knowledge to create a collaborative website of the Tennessee Centennial Exposition of 1897. One of the findings of the faculty member's research is that teaching interdisciplinary thinking relies on incremental learning.

U.Va. Tibetan Buddhist Culture

Address Book ▾ Rendezvous ▾ Wesparents Apple .Mac Amazon eBay Yahoo! News ▾

THE TIBETAN & HIMALAYAN DIGITAL LIBRARY

THDL | Popup | Collections | Reference | Community | Education | Tools

Home > Education > Courses > Tibetan Buddhist Culture

Introduction to Tibetan Buddhist Culture Course

Introduction to Tibetan Buddhist Culture is a low-level undergraduate course taught at the University of Virginia by David Germano. In the fall semester of 2001 we directly incorporated the Digital Library into all student assignments. These inquiries resulted in Web pages that used hyperlinked texts and images. In addition, for their final assignments students digitally produced three-dimensional exhibition halls, in which they posted their Web essays. Continued use of this methodology is planned for future versions of the course.

Monastic and urban imagery

This work is supported by Virginia's Instructional Technology Group, and makes use of their collaborative classroom management and authoring system called E-folio, which students use on-line to make sophisticated Web essays and comment on each other's work.

Currently, we have posted the following components of the course (*please note you can also use the menu bar tab for "Courses: Tibetan Buddhist Culture" to navigate through these components at any point*)

The Syllabus provides a detailed set of guidelines for the course, while the Calendar provides the week by week chronology of readings and activities.

The Exhibition Hall provides a link to the three dimensional Web-based Exhibition Hall in which student work has been posted as Web sites accessible through images hanging on the walls of their virtual gallery rooms.

Student Movies provides access to movies fashioned by students in which images, textual captions and mostly Tibetan folk music were combined to fashion automatically playing "movies" with the images unfolding with music in the background.

The E-folio Collaborative Digital Classroom Management System is the software system designed at UVA which is used by the class to faciliate the posting of student work over the Web, and general communication within the class over the Web. The site provides a detailed handbook of how to use E-folio.

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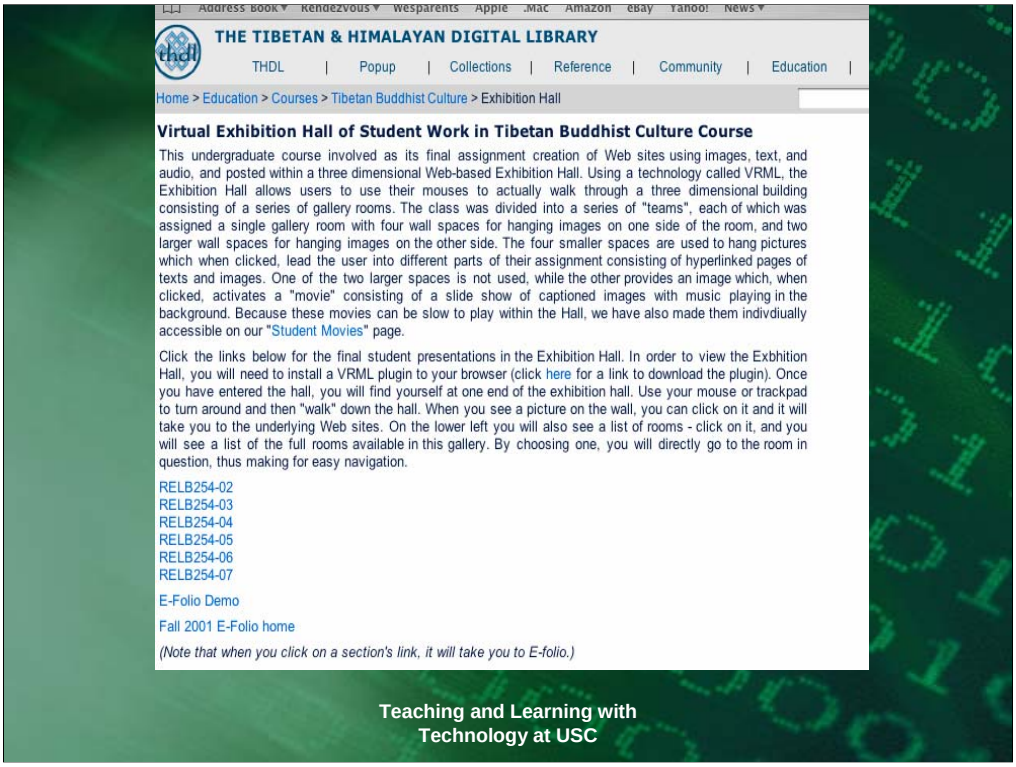

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THE TIBETAN & HIMALAYAN DIGITAL LIBRARY

THDL | Popup | Collections | Reference | Community | Education |

Home > Education > Courses > Tibetan Buddhist Culture > Exhibition Hall

Virtual Exhibition Hall of Student Work in Tibetan Buddhist Culture Course

This undergraduate course involved as its final assignment creation of Web sites using images, text, and audio, and posted within a three dimensional Web-based Exhibition Hall. Using a technology called VRML, the Exhibition Hall allows users to use their mouses to actually walk through a three dimensional building consisting of a series of gallery rooms. The class was divided into a series of "teams", each of which was assigned a single gallery room with four wall spaces for hanging images on one side of the room, and two larger wall spaces for hanging images on the other side. The four smaller spaces are used to hang pictures which when clicked, lead the user into different parts of their assignment consisting of hyperlinked pages of texts and images. One of the two larger spaces is not used, while the other provides an image which, when clicked, activates a "movie" consisting of a slide show of captioned images with music playing in the background. Because these movies can be slow to play within the Hall, we have also made them indivdiually accessible on our "Student Movies" page.

Click the links below for the final student presentations in the Exhibition Hall. In order to view the Exbhition Hall, you will need to install a VRML plugin to your browser (click here for a link to download the plugin). Once you have entered the hall, you will find yourself at one end of the exhibition hall. Use your mouse or trackpad to turn around and then "walk" down the hall. When you see a picture on the wall, you can click on it and it will take you to the underlying Web sites. On the lower left you will also see a list of rooms - click on it, and you will see a list of the full rooms available in this gallery. By choosing one, you will directly go to the room in question, thus making for easy navigation.

RELB254-02
RELB254-03
RELB254-04
RELB254-05
RELB254-06
RELB254-07

E-Folio Demo

Fall 2001 E-Folio home

(Note that when you click on a section's link, it will take you to E-folio.)

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Understanding Context

Roman de la Rose
Digital Surrogates of Medieval Manuscripts

A project of the Milton S. Eisenhower Library of The Johns Hopkins University and The Pierpont Morgan Library

Welcome

This site is a prototype testing ways to present medieval manuscripts in digital form. We have scanned six manuscripts of the *Roman de la Rose* from the collections of the Walters Art Museum (W. 143), the Pierpont Morgan Library (M. 948), the Bodleian Library of Oxford University (MS. Douce 195, MS. Douce 332 and MS. Selden Supra 57), and the J. Paul Getty Museum (MS. Ludwig XV 7). All folios of these manuscripts may be viewed and compared, and a portion of the text is searchable.

In order to fully access the folios you will need a password. Click on one of the buttons below to continue.

Request password

Sign In

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Promote Deeper Learning

- Learning is engaging
  - It respects diverse talents and ways of learning
  - It communicates high expectations
  - It emphasizes intrinsic motivators and natural curiosities

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USC Student Project

The City of Troy

ἦ τοι ἐγὼ Τρώεσσι πόλιν πέρι τεῖχος ἔδειμα
εὐρύ τε καὶ μάλα καλόν, ἵν᾽ ἄρρηκτος πόλις εἴη·

The Iliad, Book XXI:446-447

This project works to integrate textual, or Homeric, evidence of the Trojan War
the archaeological and geological findings at Troy. Together, these elements w
to evaluate the historical foundations of Homer's depiction of Troy. The main
focus, however, is the utilization of excavation records and archaeological findi
from Troy to reconstruct the citadel as it may have appeared at the time of the
Trojan War in the 13th Century B.C.

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“When people talk to me about the Digital Divide, I think of it not being so much about who has access to what technology as who knows how to create and express themselves in this new language of the screen.”

George Lucas, EDUTOPIA , 200

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Or, Do You Agree with This?

"Students have become almost obsessively adroit at 'souping up' their papers, which they submit electronically and which they festoon with illustrations, charts and animation. One frustrated professor (said) 'All I wanted was a simple 20-page paper. What I got looks suspiciously like the outline for a TV show.'"

Zemsky and Massy, 2004

Promote Deeper Learning

- Learning is student-owned
  - Students organize knowledge in ways that facilitate retrieval and application
  - It emphasizes learner independence and choice
  - It allows time for reflection

Teaching and Learning with Technology at USC

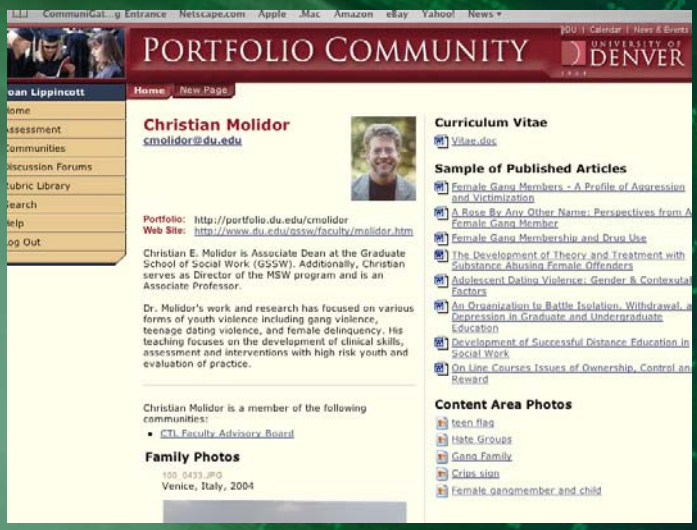
Blogs promote individual reflection but also provide a way to connect with others in an online community.Huffaker suggests that in the classroom, “students can have a personal space to read and write alongside a communal one, where ideas are shared, questions are asked and answered, and social cohesion is developed.”

Blogs as a mechanism for students and librarians to share ideas for informaton resources relevant to a course.

Blogs as a vehicle in which TAs for a large course can share and communicate about problems, solutions, advice. Same with student teachers with mentors as participants, too.

Communities of practice as a vehicle for faculty and information professionals to share perspectives, insights, links, and documents.

U. Denver Faculty Portfolio



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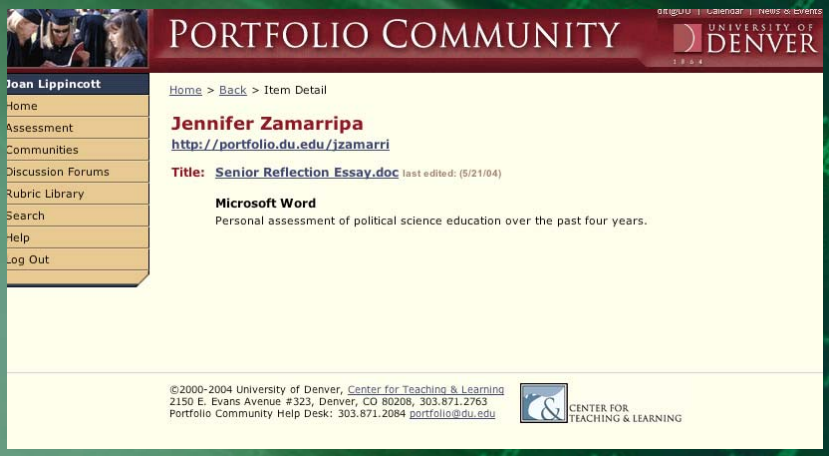
U. Denver Student Reflection



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Harvard Law School Blog

Monday, March 8, 2004

Shorenstein case study on Trent Lott and weblogs

A milestone case study from the Shorenstein Center was released on Friday last week. It tells the story of Trent Lott, his talk at Strom Thurmond's birthday party in December 2002, and how the news flowed through professional channels, to the blogosphere, and back, ultimately resulting in Lott's resignation as majority leader of the US Senate.

Shorenstein Center is part of the Kennedy School of Government at Harvard University.

A personal note, it's gratifying to see the study is available publicly, this makes it available for review by bloggers, as well as being useful in classrooms, and as a reference to scholars who will study weblogs in the future.

Posted by Dave Winer on 3/8/04; 9:11:52 AM - Comment [6] -- Trackback [4]

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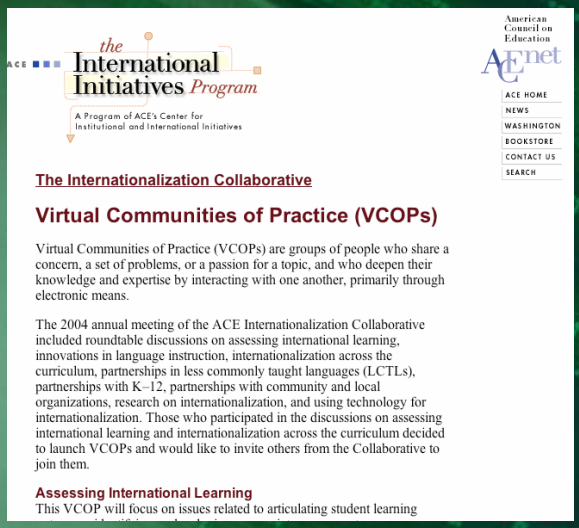
Int'l. Education VCOP



ACE the International Initiatives Program

A Program of ACE's Center for Institutional and International Initiatives

American Council on Education

ACE net

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The Internationalization Collaborative

Virtual Communities of Practice (VCOPs)

Virtual Communities of Practice (VCOPs) are groups of people who share a concern, a set of problems, or a passion for a topic, and who deepen their knowledge and expertise by interacting with one another, primarily through electronic means.

The 2004 annual meeting of the ACE Internationalization Collaborative included roundtable discussions on assessing international learning, innovations in language instruction, internationalization across the curriculum, partnerships in less commonly taught languages (LCTLs), partnerships with K–12, partnerships with community and local organizations, research on internationalization, and using technology for internationalization. Those who participated in the discussions on assessing international learning and internationalization across the curriculum decided to launch VCOPs and would like to invite others from the Collaborative to join them.

Assessing International Learning

This VCOP will focus on issues related to articulating student learning

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Why TLT?

- To improve the quality of learning
- To reach underserved groups
- To gain resources for the institution
- To increase a sense of community

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Reach the underserved

- Teachers, nurses, and other professionals seeking advanced study
- High school students seeking advanced work
- Students in remote areas in the US or in developing countries

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Increase resources

- Professional schools
  - Offer high quality post-graduate distance education
  - Strengthen alumni support and connection

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Increase a sense of community

- Students in on-campus courses
- Students connecting to individuals outside the university
- Faculty communities of practice

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How can we support TLT?
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Creating the Campus Cyberinfrastructure

- National Academies Blue Ribbon Commission on Cyberinfrastructure
- Seamless, integrated teaching, learning, and information environment
  - User-centered
  - NOT silo-centered

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“The emerging vision is to use cyberinfrastructure to build more ubiquitous, comprehensive digital environments that become interactive and functionally complete for research communities in terms of people, data, information, tools, and instruments that operate at unprecedented levels of computational, storage, and data transfer capacity.”

Report of the NSF Blue Ribbon Advisory Panel on Cyberinfrastructure

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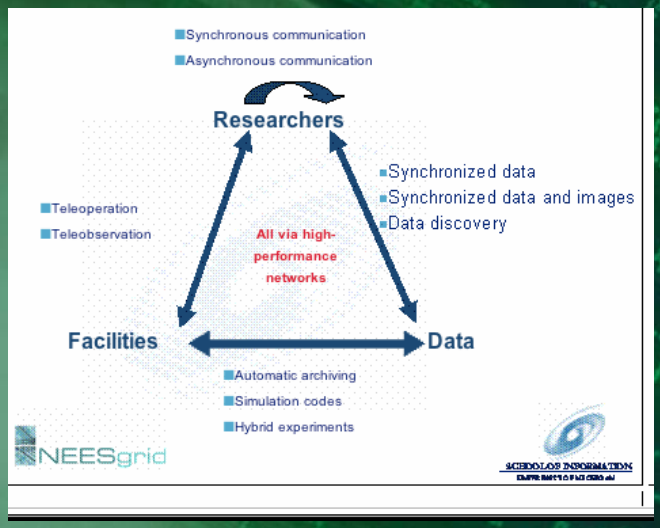
Cyberinfrastructure for Earthquake Science



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Elements of Institutional Cyberinfrastructure

- Digital Content
- People
- Technology
- Physical Space

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Digital Content

- Customization and personalization
- Institutional repositories
- Learning objects
- Cohesive access to information

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People

- Collaboration
- Students (reverse mentors)
- New types of information professionals
- Training
- Information literacy

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Support models

- Learning technology teams
  - USC Jumpstart
  - ASU
  - Uwired
  - IUPUI
- U. Delaware Faculty-IT Partnerships
- UCF Faculty Support Ecosystem
- UC Berkeley Mellon Library/Faculty Fellows

Teaching and Learning with Technology at USC

What DO students know about technology and information?

"To say that our students, having grown up with digital media in their homes and in their schools, come to (the university) already equipped with skills and knowledge of information technologies is a misconception."

McEuen, 2001

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Information Literacy

- Embedded into the curriculum
- Preparing students for success in the information society
  - Understanding information in the discipline
  - Understanding information policy issues
- NOT a “library problem”

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Technology

- Network infrastructure
- Middleware
- Last mile

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Physical Spaces

- Wired classrooms
- Wired social spaces
- Information commons
- Multi-media production studios
- Experimental spaces

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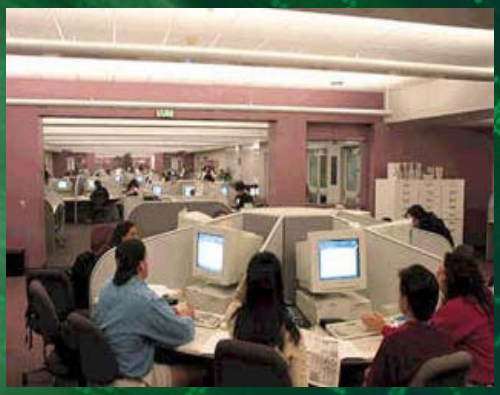
University of Southern California's Leavey Library Information Commons



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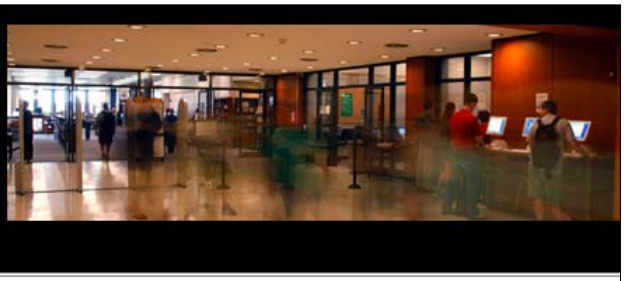
Information Commons

Indiana University Libraries and University Information Technology Services



A state-of-the-art technology and information center at the IUB Main Library

A smashing success!

IU President Adam Herbert presided over the official ribbon cutting celebrating the grand opening of the Information Commons on Thursday, September 18, 2003

Thanks to all who attended and planned

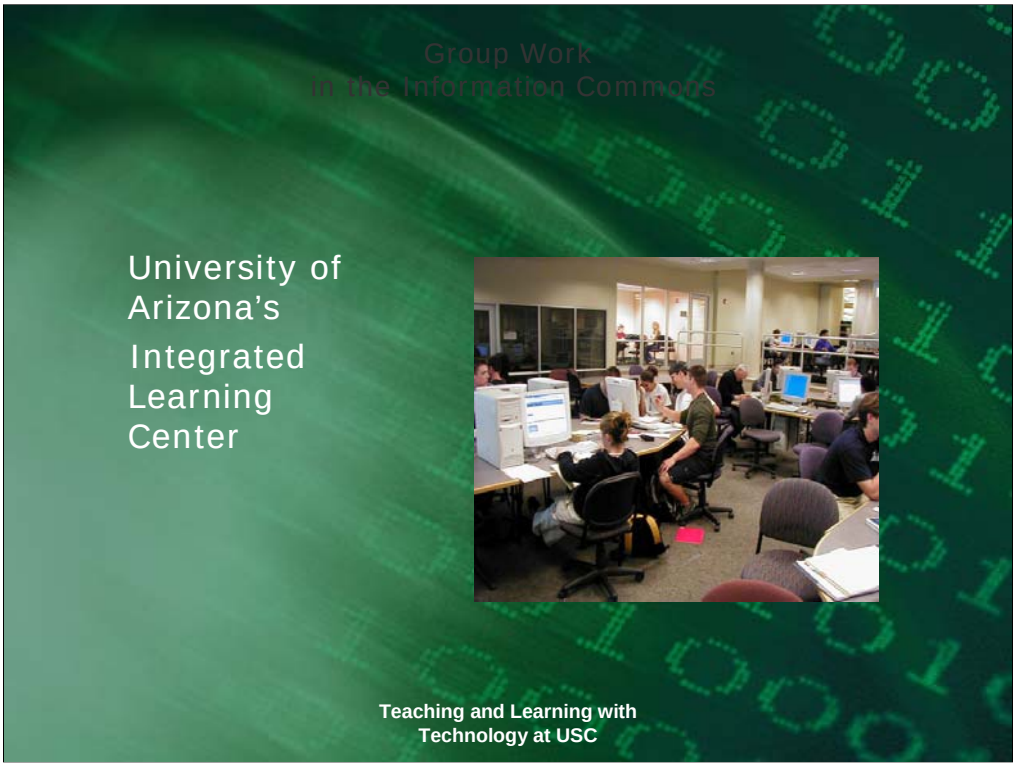
The wait is over!

The Information Commons is here!

The renovation of the first floor of the West Tower of the Indiana Univer
Main Library began on January 6, 2003. The project transformed the 27
square-foot-space into the ***Information Commons***, a state-of-the-art,
integrated technology and information center that will foster student learn
enhance faculty research and teaching opportunities. Take a look at the I
IC Services.

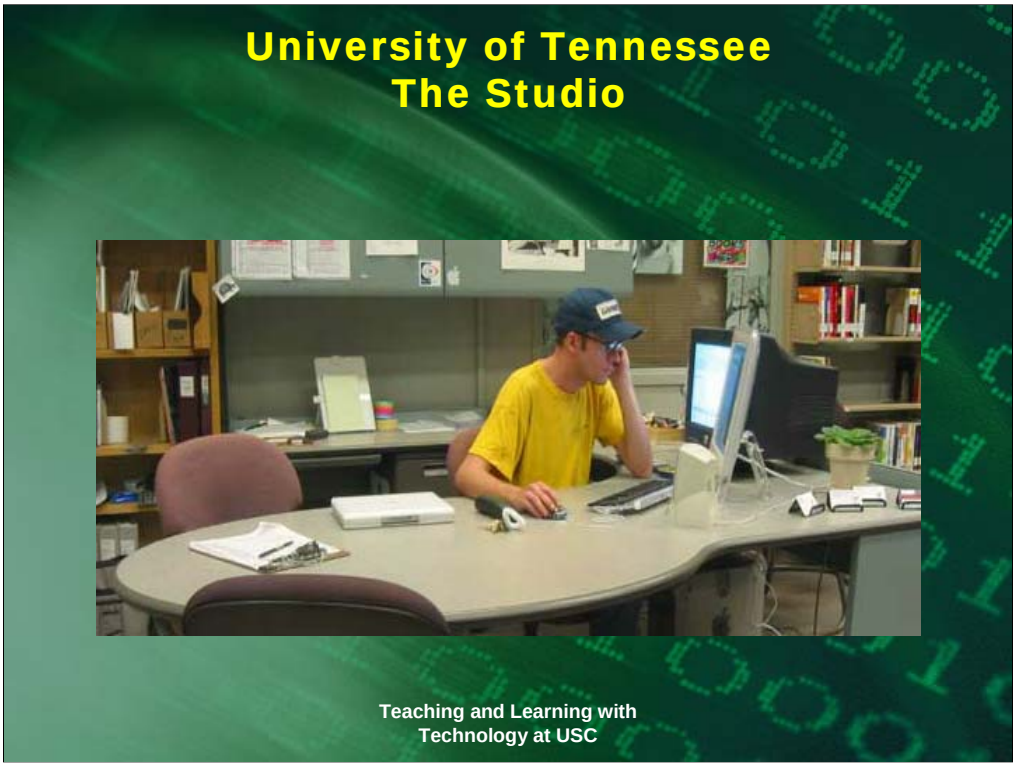
A gathering place unlike any other

A joint effort between the Indiana University Libraries and University
Information Technology Services, the ***Information Commons*** provides



Most new facilities have provisions for many types of seating that will accommodate both individuals and groups. This configuration at U. Arizona is one of many that they have developed for different areas of their facility. There is plenty of room for a small group to cluster around a workstation and work on a project.

At Dartmouth, a separate Media Center in the newly renovated and expanded library is an ideal place for students and faculty to develop multi-media projects. The facility combines access to multi-media content in various formats and production facilities.



At the U. Tennessee, The Studio was developed as a joint project of the library and IT. It was specifically developed as a multi-media production lab open to students, staff, and faculty. The table configuration allows individual or group use with lots of space for spreading out materials.

The Wellesley College facility is one of the earlier examples of installing a full-service multi-media production capability in the library.

At Vassar, the Media Cloisters occupies one balcony area of a library with a Gothic design. The facility is jointly administered by a faculty member, librarian, and information technologist, and many students are employed to assist with projects. After projects are developed, classes can meet informally in the space to view the productions.

Collaborative facilities extend to classroom design, where students are able to share ideas and presentations.

This Dickinson classroom illustrates another type of classroom configuration that works well for a poster style presentation of student work.

And here at Emory, a classroom that has multi-media capabilities can be used to present student work or to incorporate multi-media content into the curriculum.

Common Threads for Information Commons

- Support student learning
- Support individuals and groups
- Offer user-centered, one stop shopping
- Encourage information retrieval and creation

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Support student learning

- Multimedia classrooms
- Anywhere, anytime information environment
- Faculty development

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Support individuals and groups

- Individual and group workstations
- Group project rooms
- Formal and informal spaces

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User-centered, one stop shopping

- Adjacent or combined service points
- Service-oriented, not administratively organized web pages

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Information retrieval and creation

- Availability of digital and print resources
- Availability of staff to answer questions
- Individual and group workstations for multimedia production
- Consultation on multimedia resource development

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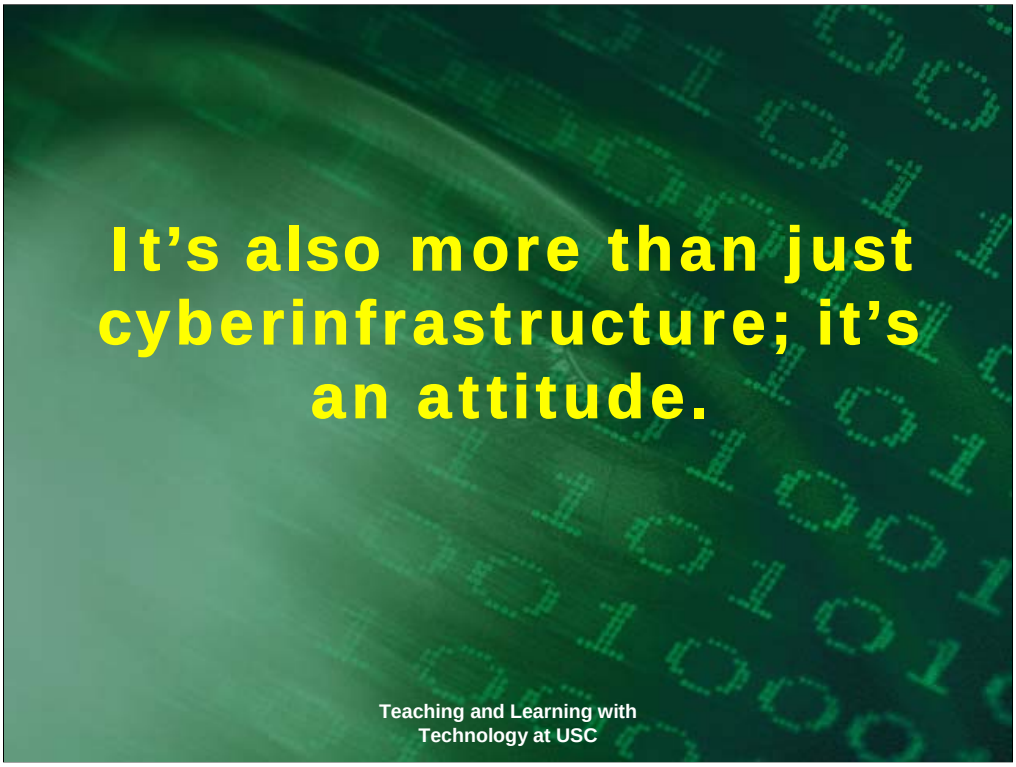
It’s also more than just cyberinfrastructure; it’s an attitude.
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An experimental culture at USC

"To gain a competitive advantage in preparing for a changing future, USC needs to acknowledge the value of informed risk-taking and develop a culture of targeted experimentation."

USC's Plan for Excellence, 2004

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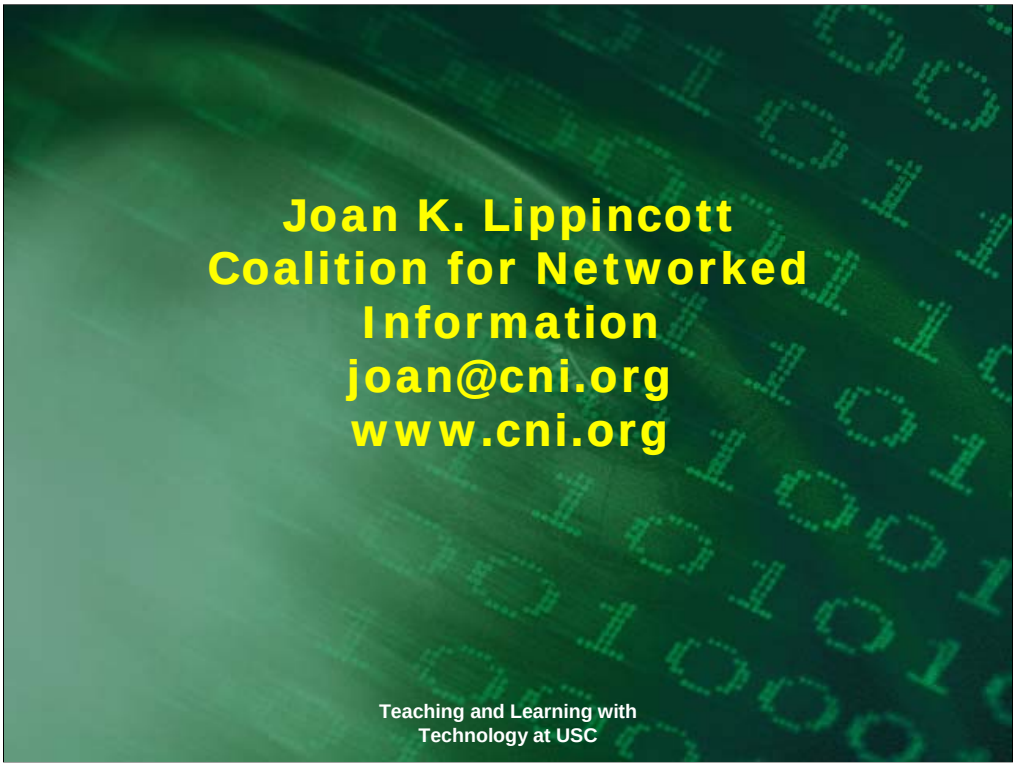
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