ICT for blended learning

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Blended learning…blends of:

- (a) different types of learning resources
- (b) different types of learning activities
- (c) different places and times where learning activities take place
- (d) different ways that people interact with each other
- (e) grounded in a strategic learning model
- (f) under the guidance and management of a capable instructor
- (g) with assessment
- (h) with the whole process coordinated in an efficient way via a Web-based learning-support system.

Basic premises

- Blended learning involves increasing flexibility: options for what, how, when, where, and with whom they participate in the course
- The focus of blended learning is not about presenting content: Start with a learning model focused on what the learners will be doing and contributing
- Technology design focuses on what the learners will do supported by the Web environment

Two types of changes…

- **Improving the logistics of learning:**

To make processes more efficient, easier, more professional, better organized, just-in-time, archivable

- **Improving the pedagogies of learning:**

To extend and enrich how you learn; via better social learning, new models of learning; new ways of creating, designing, and building learning

The first type of improvement…

- Improving the logistics of learning:

To make processes more efficient, easier, more professional, better organized, just-in-time, archivable

Logistics of learning

- Organizing
- Archiving
- Finding
- Saving
- Maintaining agenda
- Synchronizing
- Communicating
- Submitting & returning with feedback
- Contacting
- Transferring, sharing

With flexibility of style, also time and place

The second type of change…

- The experience of learning:

To extend and enrich how you learn via better social learning; new models of learning; new ways of creating, designing, and building learning

Pedagogical change

- From being given to finding or creating
- From fixed to options
- From listening to doing
- From one-size-fits-all to tailoring
- From copying notes to presenting your own work for others

Teaching and learning change

Contribution & Flexibility

Pre - activities

Contribute

Activities

Contribute

Collaboration Follow up

Contribute

Before

During (possible) contact session

After

Supported by Web tools

http://www.teletopsou.com/02Shellp262.nsf/FramesForm?ReadForm - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media History Mail Print Edit Real.com Messenger

Address http://www.teletopsou.com/02Shellp262.nsf/FramesForm?ReadForm Go

the digital learning TeleTOP environment

News
Course info
Roster
Administration
Participants
Discussion
Archive
Quiz

TeleTOP®, University of Twente

P262 Petrophysics

Roster

00	DATES &	ORIENTATION	ACTIVITIES	WORKPLACE
001	TOPICS	Start Here		
01	**Welcome Everybody !** Week 1 (23.9.-29.9.)	Make Yourself at Home (Week 1 = 4 hrs. study time)	Finish by Sept. 29 • Explore TeleTOP • Meet your peers • Reflect on role of Petrophysicists • Poll: How are you doing?	Finish by Sept. 29 • Talk to your supervisor • Communicate your PP set-up and arrange a visit to the "shop" of the logging contractor
02	**Introduction & Awareness** Petrophysics Week 2 (30.9.-6.10.)	Get to Know Petrophysics (Week 2 = 4 hrs. study time)	Finish by Oct. 6 • CD- Rom (Intro, 1.1, 1.2.2) • Finish readings on temperature, shaly sands • Quiz • Poll: Find enough time to study?	Finish by Oct. 6 • Talk to an experienced Petrophysicist from your OU
03	**Working Knowledge** Petrophysics Week 3 + 4 (7.10.-20.10.)	The Tools & Quicklook (Week 3+4 = 8 hrs. study time)	Finish by Oct. 20 • CD- Rom + Quiz (lithology, porosity, resistivity, fluid typing, permeability) • CD Rom + Quicklook assignment • Poll: The Petrophysics CD is ...	Finish by Oct. 20 • Explore Petrophysical Concepts in your OU
04	**Workshop Preparation** Petrophysics Week 5 (21.10.-27.10.)	Preparation for the Workshop (Week 5 = 2 hrs. study time)	Finish by Oct. 25 • Register for SKS membership • Poll: I registered for SKS ...	Finish by Oct. 25 • Get ready for your Workshop Presentation

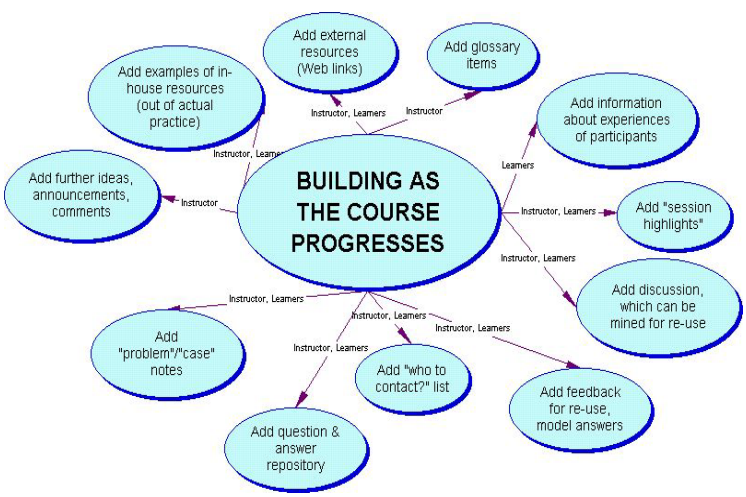
Internet

Start Telematics Ap... http://www... Index - Micros... Solitaire Master Windows Com... Microsoft Pow... 5:23 PM

The student as active contributor (co-producer):

- A **co-creator of learning materials** (study resources, quiz questions, model answers, help materials for other students, lecture materials, etc.)
- A **good selector** from a variety of real-world resources
- **Someone who extends rather than only reads the textbook, and also extends the work of others**
- **Someone involved in self- and peer evaluation as an assessed part of the course**
- **Someone who designs and builds an electronic portfolio or other product with a use outside of the course**

From content to contribution



Designing a blended course

Given your basic situation:

1. Design the learning activities and their supports
2. Design the assessment and its tools and processes
3. Design the Web environment to support the approach so far
4. Design the rest of the course

Key aspects of your situation:

- The students:
  - How many?
  - Variety of backgrounds, experience?
  - Level, place in their program?
  - Technology access?
  - Kinds of flexibility desired?
  - Expectations and experiences with innovative pedagogy?
  - Importance of assessment?
- The course situation:
  - Credit units? Number of weeks? Planned sessions?
  - Labs?
  - Ways in which you now interact with the students?
  - Course topics and objectives?
  - Satisfaction with content resources
  - Major positive aspect of the course?
  - Major problem with the course?

Learning Design

Types of activities (Single and multi-step)

Rule or process focus

Apply standard procedures and rules to come to a solution.

"Where can difficulties occur in the process? Create a resource that will help others to avoid them."

Incident focus

Start from a critical incident or scenario and argue a course of action

"What have others done? How does your choice compare?"

Problem focus

Apply a problem solving strategy to a situation with multiple options

"As a group, create a resource that combines a variety of different solutions, each one contributed by a different group member- Make an overall flow chart to help others to see key points in the decision process and what happens based on different choices"

Find and Identify focus

Extend the study materials with resources from the Web.

"Why is this a useful choice? How should you use it?"

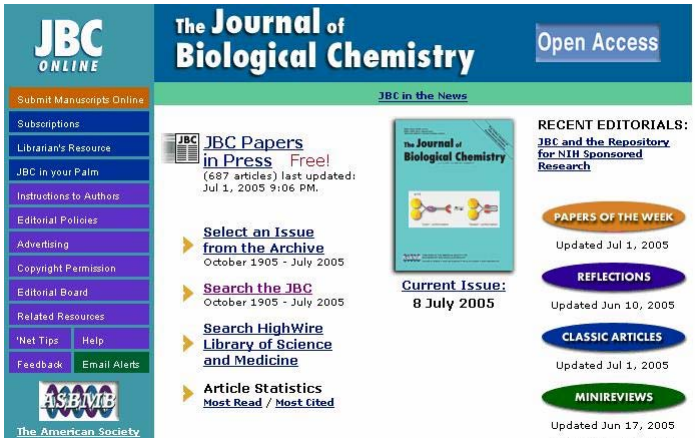
Creation focus:

Visualize or design or illustrate a concept

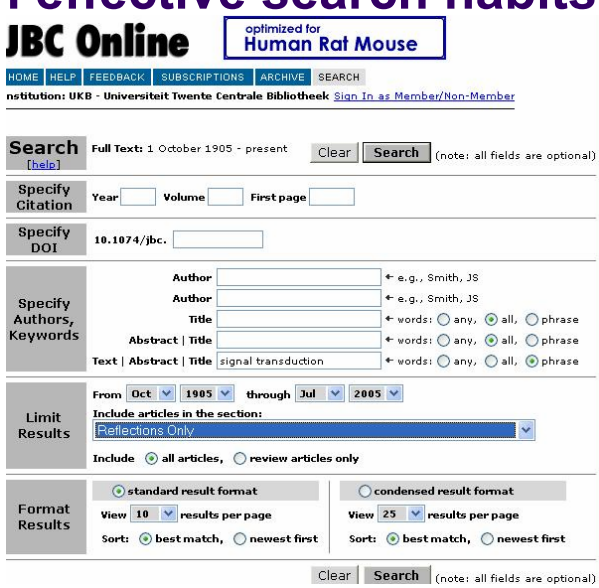
"What way of visualizing a process you cannot actually see helps you best?"

Whenever possible, use authentic sources; learn where and how to locate appropriate information and assess its usefulness, for yourself and for others.

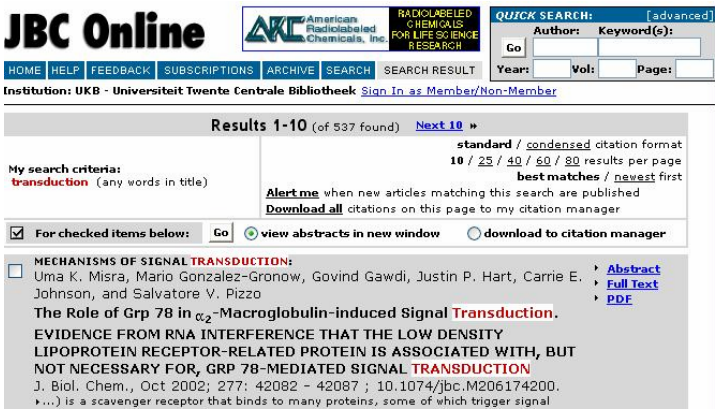
Example: Extend the course resources



Learn effective search habits…

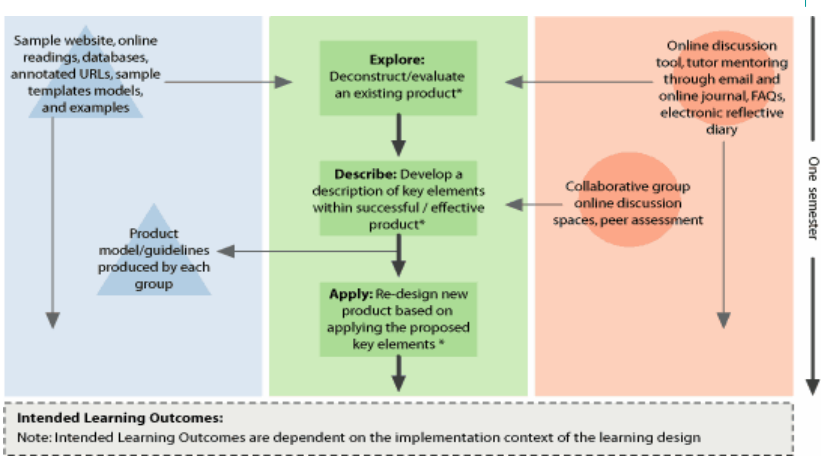


And when to refine the search…
then contribute one choice to the course Web environment for others



Also, go beyond the textbook and journal…look for people in the field in action….Members of the Signal Transduction group…

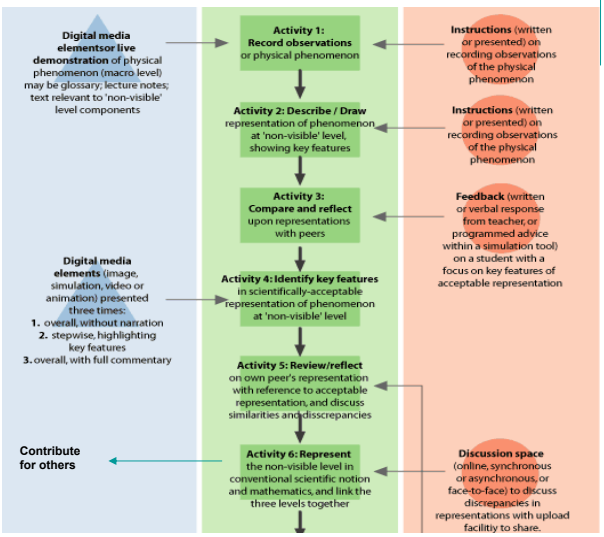
Explore-Describe-Apply:
Solving an open-ended problem



Oliver, R. & Herrington, J. (2002). *Explore, Describe, Apply: A problem focussed learning design.* Retrieved July 2, 2005 , from Learning Designs Web site: http://www.learningdesigns.uow.edu.au/guides/info/G4/index.htm

Observe, Represent, Refine:

Developing mental models of non-visible physical phenomena



Tasker, R., Lockyer, L. & Harper, B. (2002). *Observe, Represent, Refine: Developing scientifically-acceptable mental models of non-visible physical phenomena* Retrieved July 2, 2005 , from Learning Designs Web site: http://www.learningdesigns.uow.edu.au/guides/info/G5/index.htm

Plan the resources…

Some you provide….

Some they supply…

- **Real data and authentic workplace documents**
- **URLs to external Web sources**
- **Books, manuals**
- **Instructor-created resources**
- **Learner-contributed resources**
- **Video/audio captures**
- **Professionally made resources, Web-based or CD-ROM**
- **Access to contact persons**
- **Professional portals (http://stke.sciencemag.org/)**

Plan the assessment and supports

- Number, variety, and weight of assessed activities?
  - Choose among: "Right answer" exercises, quizzes, one-step contributions, multi-step projects, exams
  - How much flexibility? In type, time, topic? Group or individual?
  - What support will be available, when, for help with each activity?
- Prepare and place in the Web environment:
  - Careful instructions and examples
  - Clear expectations for when, where, and to what standard
  - Time and expectations for feedback including peer feedback
  - Scoring templates, clear criteria (particularly for group work)
  - Policy for late submissions, re-submissions, unacceptable submissions,
  - Indication of who/what/when/how/where to get support

Design the Web environment…

Integrate calendar, learning tasks, learning resources, learning supports in one matrix…Add all materials that will link to the Roster….

Roster

00		Reading and responding	Date and location of session	During the session		After the session	
10		"Course Info" and Ch. 1	30 March 2001, L209, 8:30-10:30	Dimensions of E-Learning		Assignment 1: Part 1: Due 4 April, Part 2: Due 6 April, 10 pts	
20		Ch. 3, 4, 5 *Poll questions are available (29-04-01)*	6 April 2001, 8:30, L209	Pedagogy and Technology for E-Learning		Assignment 2, due April 25, 30 pts *General feedback is available here (29-04-01)*	
30						Assignment #3, Due 2 May, 10 pts	
40		Ch. 7, 8, 9	4 May, 8:30, L209	E-Learning in the organisation		Assignment #4, Due 23 May, 30 pts (small changes made, 03-05-01)	
50			1 June, 8:30, L209	Visions of the future; complete the questionnaires here for 5 pts		Assignment 5, Due 1 June, 15 pts	

Plan the rest of the Web environment

Course Information: All the formal and procedural information about the course and its procedures

Communication tools: Instructor to class, Instructor to individuals or groups, Students to instructor, to individuals or to groups

Extra resources

Have a walkthrough…

Is everything consistent and clear?

Options for the Web environment

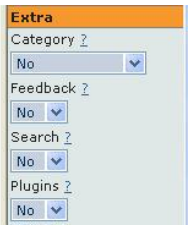
Learner Tools
> Communication Tools
- Discussion Forums
- File Exchange
- Internal Email
- Online Journal/Notes
- Real-time Chat
- Video Services
- Whiteboard

> Productivity Tools
- Bookmarks
- Calendar/Progress Review
- Orientation/Help
- Searching Within Course
- Work Offline/Synchronize

> Student Involvement Tools
- Groupwork
- Self-assessment
- Student Community Building
- Student Portfolios

http://www.edutools.info/course/compare/byfeatures/index.jsp

Options for the Web environment (TeleTOP)



http://www.teletop.nl/teletop.nsf/home/en

Example of roster set up and menu choices (TeleTOP)

Lunch….

14:30-15:30 Choose your strategy…

1. Work with a partner: Together, redesign one course
2. Indicate the key aspects of the situation (students, course context)
3. Plan for several activities (including a contribution type); work out what the students will do and what task instructions, resources, and support they will need
4. Think about criteria and resources for assessment
5. Share your ideas about one new activity with the rest of us

Pause….

15:50-16:30

Design (on paper) your course Web environment:

1. Draw a matrix (roster) that integrates topics or time periods; activities, and resources. (Organize it with columns called Date/Topic, Before, During, After)
2. Draw a sketch that shows your environment interface: what features do you want to make available in addition to your roster?

16:30-17:00 Will it work for you?

- What are positives and concerns…
  1. From the instructor's perspective?
  2. From the student's perspective?

- Will you try it? What do you need next?

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