Designing and enacting an inquiry based collaborative learning script using the **CADMOS** tool

http://cosy.ds.unipi.gr/cadmos/

Michail Boloudakis, Mary Katsamani, Petros Georgiakakis, Symeon Retalis

University of Piraeus
Department of Digital Systems

Computer Supported Learning Engineering Laboratory
http://cosy.ds.unipi.gr

What do teachers do?

- We prepare our lessons before we enter the classroom?

- We store these lesson plans electronically?

- We use a tool for storing our lesson plans?

- We share our lesson plans?

- We use a learning management system (LMS)? (Moodle, Blackboard, TC3 …)

The lesson plan challenge

- Teachers as designers want to use tools that could guide them
- Teachers as designers do not have to be technical experts (e.g. know XML & LD standards)
- A lesson plan should be shared and re-used
    - It must be used a common, formal and "rich" design language

Course Design: Neuroscience
Spring 2012 Semester

http://contentbuilder.merlot.org/toolkit/html/snapshot.php?id=20982585214994

CoSy LLab - Compu... skoool.gr TopCreations - Top ... Learning Materials Akous. Gazi - Έντεχ... Medical Biochemistry NDNQI Pressure Ulc... The Medical Bioche... NDNQI® | Pressure ... Neuroscience Cours... Course Portfolio ...

File   Edit   View   Favorites   Tools   Help

Google   Search ▾   More »   Sign In 🔧 ▾

Description/Organization

Neuroscience is a comprehensive lecture and laboratory course that provides an integrated multidisciplinary study of the structure and functional relationships of the central and peripheral nervous systems. Essential to a proper understanding of Neurosciences is the ability to classify, correlate, associate and link the various entities and modules, much the same way as normal human cognition works in real life. This subject assumes basic knowledge of anatomy of Head and Cranial nerves. The syllabus is divided into easily understandable modules based on Snell's chapter, supplemented by Board Review Series. Neurobiology and neurophysiology, brain metabolism, and the effects of damage and disease on cells of the central nervous system are covered in detail in the initial part of the course. Students are also introduced to techniques of neuro-imaging and taught introductory clinical assessment during this time. Thereafter the entire central nervous system, from spinal cord upwards to the cerebral cortex, is covered in minute detail. Each component of CNS is subdivided into two parts; the normal concepts and the pertinent clinical correlations. Knowledge is imparted by comprehensive techniques that utilize visual, verbal, auditory and kinesthetic learning styles of individuals. Learning is enhanced through laboratory gross brain dissection, imaging techniques and discussion of clinical correlations. Research skills are honed by subjecting students to a small project work, which they have to present towards the end of the course.

Objectives

Lecture: Basic understanding of concepts of Neuroscience and how it relates to neurological diseases (See individual classes in Appendix-1 for more details)

Lab: Hands on experience in handling the wet brain specimens, clinical testing for sensory, motor and cranial nerve deficits, lumbar puncture; basic neuro-radiological interpretation (See under Lab schedules for more details)

Learning objectives of lab sessions

1.   Know the gross landmarks and internal structure of brainstem, cerebellum, diencephalons, cerebral cortex (sulci and gyri), basal ganglia, hippocampus, ventricles and thalamus

2.   Know the basics of interpretation of plain X-ray films, CT scans, MRI scans, PET scans, Cerebral Angiograms, Sinus venograms; both normal and some pathological ones (skull fracture, intracranial hematoma, intracranial tumors, Aneurysms, Alzheimer's etc)

3.   Know the anatomical basis, principles and technique of lumbar puncture (spinal tap)

Evaluation and grading

There shall be 4 Block exams & 1 shelf exam during this course and scores of each exam will be taken in to consideration of Final **Grade** as shown below:

First exam (Block 1)	13%
Second exam (Block 2)	19%
Third exam (Block 3)	19%
Fourth exam (Block 4)	19%
Shelf exam	25%
Fifth exam (Block 5 Quiz)	5%
Total	100%

Specifics for each exam will be discussed in class. In addition to the above exams there may be few Tests / Quizzes whose scores will not go into grades. All grades and cumulative grades after each Block exam will be put up in the secure University website within 24 hours of completion of exam.

The distribution of questions in each exam will be according to the NBME content outline given in the left panel

Course Design

NEUROSCIENCE NBME Content outline

Normal processes 65%-70%

Embryonic development   1%-5%

Organ structure and function   50%-55%

Spinal cord   5%-10%

Brainstem   5%-10%

Brain   5%-10%

Course calender (schedule)

Tentative Schedule for Spring 2012* (All pages and chapters refer to Snell's Clinical Neuroanatomy, Edition 7)

week 1
2-Jan   Mon Orientation day, no class
3-Jan   Tue **Chapter-1** (p2- 32): Introduction and Organization of the nervous system
4-Jan   Wed **Chapter-2** (p34 - 69): Neurobiology of the neuron and neuroglia
5-Jan   Thu
6-Jan   Fri

Learning Resources

The required text book for Neuroscience is -

1. Snell, Richard S. Clinical Neuroanatomy for Medical Students - 7ᵗʰ edition, Wolters Kluwer / Lippincott; ISBN-13: 978-0-7817-9427-5   ISBN-10: 0-7817-9427-7

Keywords:
USMLE, NBME, First year Course, Third Semester, Basic Medical Science, Professor, Course Director, Dr Sanjoy Sanyal, Neuroscience, Syllabus

We prefer graphical views

Take Home Message #1

Separation of Concerns in CADMOS

The design of a Learning Unit

"Conceptual Model" or "Learning Activity design view"

"Flow Model" or "Learning Activity flow design view"
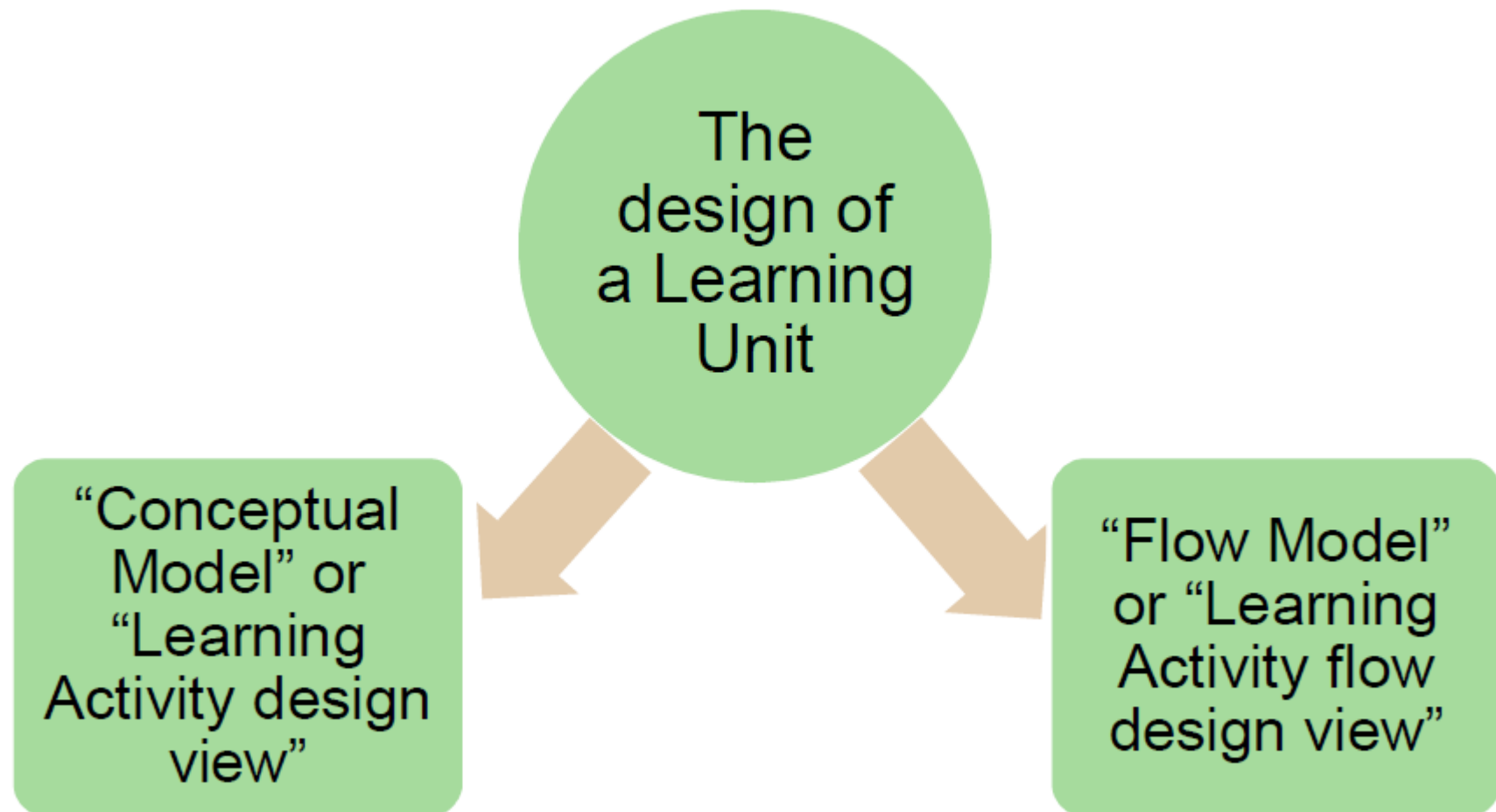
CADMOS LDs
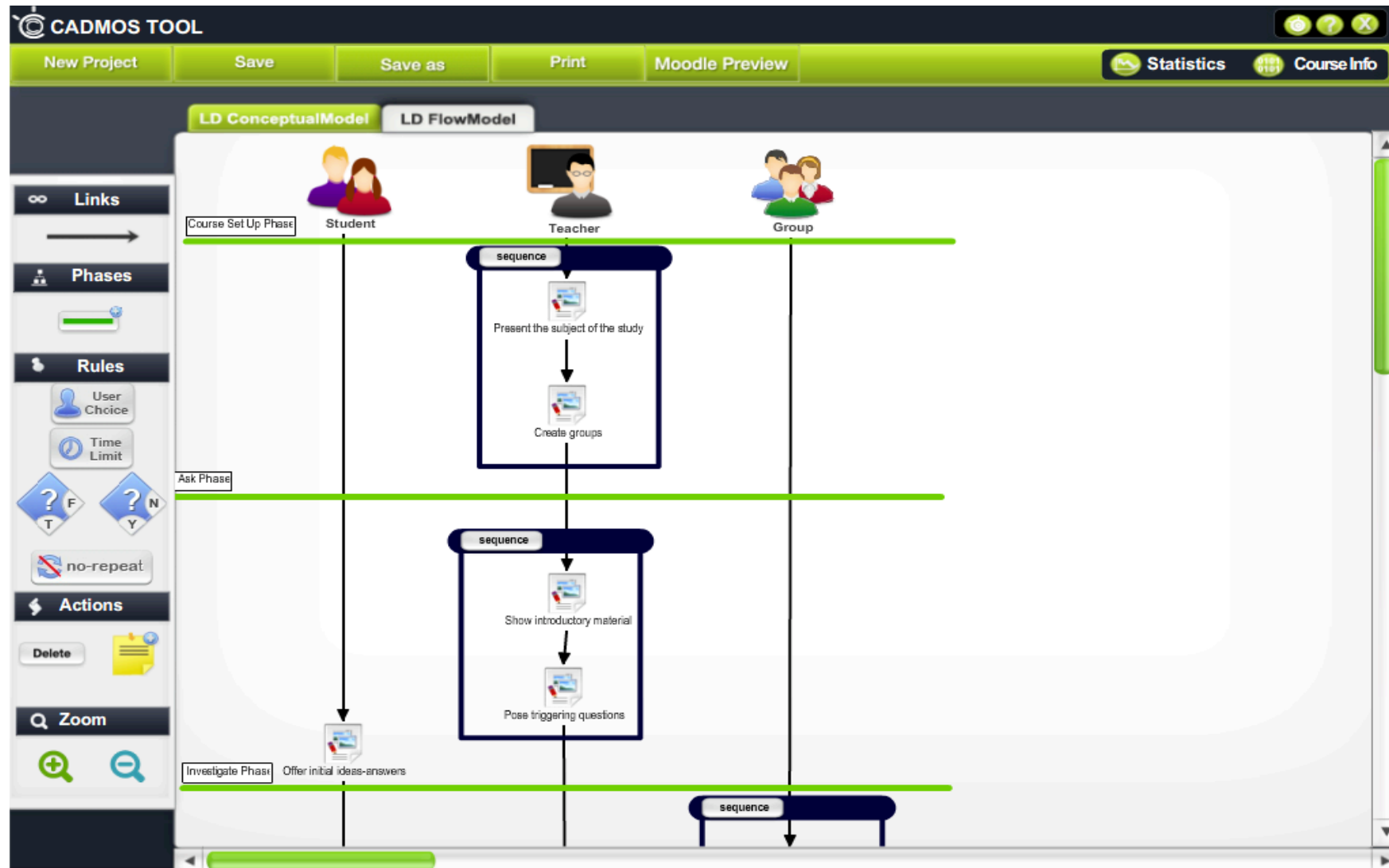
We need to **bridge the gap**
between
Lesson plan & Enactment

Take Home Message #2

Enactment

moodle

Home ▶ Courses ▶ "property" of a compound

Navigation

Home
- My home
▶ Site pages
▶ My profile
▶ Courses

Settings

▾ Course administration
    Turn editing on
    Edit settings
    ▶ Users
    Grades
    Backup
    Restore
    Import
    Publish
    Reset
    ▶ Question bank
▶ Switch role to...
▶ My profile settings
▶ Site administration

[Search]

Topic outline

Course Set Up Phase
    Course Set Up
        Present the subject of the study
        Create groups

Ask Phase
    Ask
        Show introductory material
        Pose triggering questions
      Offer initial ideas-answers

Investigate Phase
    Investigate
        Collect & Exploit resources
        Experimentation

Create Phase
    Create

Concluding remarks

- **CADMOS**
  - Promotes a step wise design approach
  - Allows traceability in the design process
  - Allows to focus on a specific view and to reuse design views
  - Conforms to IMS LD level A,B
  - Includes design patterns as templates
  - Interoperates with Moodle LMS
    - Bridging the gap between design & enactment

Join us…

http://research.moodle.net/

Thank you!

mbolou@unipi.gr

http://cosy.ds.unipi.gr/cadmos/