Course Objectives

This course explores issues of design and use of learning technologies in classroom settings. We will explore several questions about how specific interactive environments are designed and implemented, as well as how they impact classroom dynamics and student learning. What are the underlying theories of teaching and learning that have influenced design of a particular learning environment? What factors contribute to the use of interactive environments in a classroom? What role does the teacher play? How can we assess student learning in a technology rich learning environment?

We will focus on three main themes. First, we will explore the theoretical underpinnings that have informed the design of learning environments. Second, we will discuss how factors in the classroom environment, such as teacher facilitation, curriculum and student interactions impact the ways in which learning technologies are used in a classroom. Third, we will explore how a systematic study of the design of learning environments can be achieved by examining both learning outcomes and classroom enactments.

Design project

Your final project will be the design of a learning environment for teaching in a particular domain. You will include in your design proposal, the theory that your design is based on, the domain that your design addresses, identified student needs in that domain and how your design will address these needs. You can either design curriculum to use existing technology, or propose a design for new technology. You can include mock screen shots to illustrate features of your software environment.

You will need to prepare a report to address the following:

- Objectives - What is the domain or skill that you wish to support?
- Audience - Who are your students? What are the known student needs in this domain and how are you addressing them in your design?
- Philosophy - What are the epistemologies that have guided the design of that technology? Why do you think they are appropriate for this domain?
- Rationale for using technology - How does the technology meet the objectives that you have set?
- Assessment - How will you assess whether or nor students are learning, what are the types of data that you will collect
- Describe the activity (or activities) students will undertake, the time frame, and the products they will produce (with examples where possible).
- References / Bibliography in APA format.
Your report should be no longer than 25 pages (double spaced) and is due on December 9th.

We will have project milestones along the way, so that you can get feedback on your designs.

Syllabus

Introduction

Scaffolding student learning: Issues and Approaches


Technology support for scaffolding


Learning from digital text


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**Intelligent tutoring systems**


Lab: ELM-ARThttp://apsymac33.unitrier.de:8080/Lisp-Course

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**Learning with Hand-held devices**

**Project Milestone: Initial project ideas**


October 14: Constructionism


Learning from multiple representations


Computer supported collaborative learning


agenda for CSCL. International Journal of Computer-Supported Collaborative Learning (ijCSCL), 1 (3), 315-337.

Design of learning environments, role of the teacher and curricula


Design-based research


Assessment of student learning: Log files, concept maps


Ruiz-Primo, M. A., Schultz, S., Li, M., Shavelson, R. J. On the Cognitive Validity of Interpretations of Scores From Alternative Concept Mapping Techniques
