Web-based Technologies in Teaching and Learning - EDUC 391

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If you have a question or not sure about an assignment or want to discuss, do not wait till the last minute!

OVERVIEW
This project-based course is intended to encourage students who wish to grasp the foundation of teaching and learning design theories as a basis for evaluating and developing a web-based learning application or system. Through classroom lectures and discussions on a hybrid format (i.e., on-ground face-to-face meetings and online sessions), students will have an opportunity to experience and analyze various conventional and mobile web-based applications and technologies designed for online interactions and collaborations. Students will also discuss, share, and implement learning system design strategies for developing online environments that enable and facilitate interactive learning. To complete the course, students will form groups and work as a team to develop a small-scale web-based learning system as the course final project.

COURSE OBJECTIVES
After the completion of this course, students will be able to:
* describe how a web-based communication, collaboration, and visualization technology plays a role in the behavioral, cognitive, constructivist, and social dimensions of learning.
* identify advantages, disadvantages, limitations, and potentials of a web-based interactive media in a learning environment.
* demonstrate steps involved in a systematic process of the development of web-based educational interactive media.
* communicate rationales of learning technology design approaches through team-oriented collaborations.
* apply learning technology design concepts to develop interactive media, web-based learning environments, and educational applications.
* evaluate the value of ideas, concepts, principles, or techniques applied in a web-based interactive media designed to support learning.

REQUIRED READINGS
Course reader available at the bookstore.

SUGGESTED BOOKS
### EVALUATION CRITERIA

<table>
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<tr>
<th>Points</th>
<th>Due</th>
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<tbody>
<tr>
<td>30</td>
<td>Present 3rd week, 6th week, &amp; 9th week</td>
</tr>
<tr>
<td>20</td>
<td>Present at the 10th meeting</td>
</tr>
<tr>
<td>20</td>
<td>Submit before week 8 meeting</td>
</tr>
<tr>
<td>30</td>
<td>Present at the 10th meeting</td>
</tr>
<tr>
<td><strong>Total points</strong></td>
<td><strong>100</strong></td>
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### DIGITAL ARTIFACT

You are required to create 3 unique digital artifacts and present each artifact in the week of 3rd, 6th, and 9th. For each artifact you create, pick no more than 2 major points you find most interesting from class discussions and create a digital artifact that best reflects the points in any of following media formats:

- Digital picture of concept map on a poster paper, sketches, sticky notes, any visuals.
- Powerpoint presentation or Flash animation
- Conventional or mobile web page
- Series of animations, digital images or videos
- Any web-based learning tools discussed in the class

Any other format that can be somehow shared through the web. You will be presenting your digital artifact in class. The length of your each presentation may not be more than 10 minutes. Your media will be evaluated based on relevancy, ingenuity, and persuasiveness.

You must upload your assignments to [http://ldt.stanford.edu/~educ39108/your_directory_name](http://ldt.stanford.edu/~educ39108/your_directory_name) prior to the class meeting. You need to create a directory based on your first name and the first initial of your last name (e.g., johnd for John Doe) Make sure not to delete any file or directory that is not yours.

You can obtain a copy of an FTP program (to upload your work) from [http://www.stanford.edu/services/ess/pc/securefx.html](http://www.stanford.edu/services/ess/pc/securefx.html)


File uploading instruction using the FTP program is at [http://ldt.stanford.edu/~educ39108/paulk/howto.doc](http://ldt.stanford.edu/~educ39108/paulk/howto.doc)

### FINAL INDIVIDUAL PAPER

Based on your readings and discussions in the course, you are to submit a short paper (i.e., 1500 – 2500 words excluding 10-20 references supporting your claims) in APA style. Your paper can be either research proposal or solution development proposal. In either case, your paper is to identify and clearly describe a problem and propose strategies to address the problem. Problems to address in your paper may arise from the context of social networking, multimodal interactions, web or mobile web innovation, edutainment, new directions with WBT, implementation issues, scalability or sustainability, entrepreneurship, mobile empowerment, specific learning model, etc. Your paper should have a structure similar to following: Abstract, Problem, Background literature, Research plan or solution, Why it is important, Expected impact, Brief conclusion, and References. Also, at the end of your paper, list 3 possible journals that may publish your idea.
GROUP MULTIMODAL INTERACTION

Your group is to submit a screen captured video session of multimodal interactions incorporating a combination of digital communication tools. Your recorded session should be between 20 to 25 minutes in length. You can use Techsmith’s Camtasia, Jing Project, or any screen recording program that captures the screen and sound as a video. Your group can use any combination of communication tools including whiteboard, web cam, VOIP, Skype, Messenger, vyew.com, WIZIQ.com or any other tools as long as you can incorporate verbal, text, visual remark, body gesture, and external artifact synchronously. The discussion session must be part of your group project discussion. The session should not include introduction of your group members. The session should include a brief description of problem/issue your session is trying to address, evidence of critical thinking and reasoning, and a brief summary or conclusion at the end. The evaluation of this recorded session will be based on following criteria:

- Innovative use of communication tools
- Evidence of high critical thinking ratio
- Appropriate and balanced presentation of communicative intents through verbal speech, text messaging, body gesture (e.g., physical gestures through webcam), visual remarks (e.g., hand drawing on whiteboard), and external artifact (e.g., diagrams, images, concept maps).

There are 2 separate communicative intents in following text message:

“Wait a minute! Let me share my diagram with you.”

There is one communicative intent in verbal message and one external artifact and one visual remark in following instance:

“What do you think of this?” (The participant uploads an image and draws a circle on the image)

It is highly recommended that your group holds a preparation discussion on types of tools to use, decides a topic or problem to address as a group, and practices the tools. Your group is to submit the recorded session (i.e., create a group folder in the FTP server and upload the recorded session in Flash or submit a link to the video).

Each individual member of the group must submit a separate summary sheet tallying your portion of significant and meaningful discrete contributions per communication type in the entire session.

For example,

<table>
<thead>
<tr>
<th>Type</th>
<th>Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>12</td>
</tr>
<tr>
<td>Text</td>
<td>10</td>
</tr>
<tr>
<td>Visual remark</td>
<td>5</td>
</tr>
<tr>
<td>Gesture</td>
<td>4</td>
</tr>
<tr>
<td>External artifact</td>
<td>2</td>
</tr>
</tbody>
</table>

Each member also must submit a peer evaluation sheet indicating how you view your peers’ contributions in 1-10 Likert scale, 10 being the most valuable contributions.

For example,

Peter 8/10
George 4/10
Sara 9/10
FINAL GROUP PROJECT
Students must form groups by the 3rd week. All members must equally contribute to the project and have a speaking role in the final presentation in the last class meeting. Every week, each group must report to the class how the group project is progressing. Your group is encouraged to use a combination of web tools such as Moblog, Mindmeister.com, Comapping.com, Google tools, Buru.com, Del.icio.us, storyblender.com or any web tools to create, manage and organize resources. Your final project will be evaluated based on ingenuity, uniqueness, persuasiveness, attractiveness, marketability, and sustainability. Final projects must be one of following examples or any other approved by your professor.

Web/Mobile Web Learning Solution
Develop a series of multimedia learning contents or activity applications that lead to a change of behavior or attitude. Describe ABCD, scenario, sequence, evaluation plan, come up with hypotheses, and test your program with at least 5 users. Present the project and report the results along with reasons for positive/negative outcomes.

Development of New Interaction Model
Come up with new interaction scenario that is drastically different from conventional tools such as email, SMS, VOIP, webinar, blog, etc. Your interaction model may be one to one, one to many, or many to many interaction in promoting and supporting information and knowledge sharing, augmenting, and collective intelligence making.

Describe the interaction model, come up with hypotheses on use and evaluation plan, and interview 5 relevant experts about your model. Present the project and report the results. Focus especially on the design of the device, learning situation, condition, and practical usability. Your interview result must show why your subjects would engage or not engage in your model of interaction. What they liked/disliked, how it can be enhanced, etc.

CLASS SCHEDULE
1. Overview & Intro
   Reading for next week: E-Learning: Promise and Pitfalls by Clark & Mayer
2. E-learning Technology Overview
   Reading for next week: Evaluate WBT- advantages and disadvantages by Horton
3. New traditions in e-learning
   Reading for next week: E-Learning: How people learn? by Clark & Mayer
4. ABCD in e-learning
5. Instructional Systems Design (ISD) for WBT
   Reading for next week: 10 research-based principles of multimedia learning by Mayer.
6. WBT Principles
   Reading for next week: Assessing for deep understanding by Carber
7. Putting it all together and evaluating
   Reading for next week: Episodic variations in web-based education by Kim
8. Scalability and sustainability
   Reading for next week: Mobile learning design by Kim
9. Issues & beyond
10. Individual Paper Presentation & Project presentation