The Psychology of Learning Design and Technology

Spring Quarter, 2007 – LOC351 / PSYCH358
Mondays and Wednesdays, 10:30AM to 11:50AM, Annenberg Hall 345

Instructor: Dr. David N. Rapp
Office Hours: Wednesdays, 12:00 PM to 2:00 PM or by appointment
Office Location: 220 Annenberg Hall
E-mail: rapp@northwestern.edu
Phone: (847) 467-1871

Teaching Assistant: Adam Colestock
Office Hours: Mondays, 12:00 PM to 1:30 PM or by appointment
Office Location: 318 Annenberg Hall
E-mail: a-colestock@northwestern.edu
Phone: (847) 467-3871

This course provides an introduction to theory and practice in the development and assessment of technologies for both formal and informal learning. These learning settings include the classroom, the workplace, and our everyday world. The course will examine a variety of design approaches for developing and implementing effective instructional/training materials for individuals and organizations. We will study case examples, theoretical discussions, and empirical investigations that rely on:
- Learning perspectives from educational psychology
- Human factors approaches to effective design and content delivery
- Research from cognitive science on knowledge acquisition and application
- Technology development intended to support learning activities

Thus, we will be interested in the design, use, and assessment of instructional technologies. Conceptual understanding of the theoretical and evidence-based principles intended to make instruction more effective will be emphasized. This necessitates attention to the applied use of educational technologies, utilizing both classic and contemporary work from the above mentioned domains.

Course Goals
- To acquire knowledge about theoretical and practical approaches to learning, as they pertain to instructional design.
- To evaluate instructional media using informed research and theory in educational technology.
- To develop an understanding of important issues in the implementation of educational methodologies, and to become aware of current trends in the field of instructional design.
**Required Materials**
Course topics include psychological principles of design and instruction, constructivist learning, motivation, interactivity, learning models, multimedia and hypermedia effectiveness, interface design, and technology assessment. Due to the lack of any broad-based text covering these issues, as well as the paucity of introductory texts that specifically target educational technology, the instructor has compiled a set of papers that represent core findings, discussions, and topics in the field.

You are required to read the assigned readings prior to each class. While the course readings are sizeable, they are manageable if you plan accordingly. The packet of course readings will be available at Quartet Copies (825 Clark Street). The readings will also be available to you via the Blackboard website.

**Course Outline**

**March 26**  
Orientation and Introduction to the Course and Course Topics

**March 28, April 2**  
What Is (EFFECTIVE) Instructional Design?
READINGS:

*ASSIGNMENT #1 handed out on March 28, due April 4*

**April 4, April 9**  
Interface Design
READINGS:

*ASSIGNMENT #2 handed out on April 9, due April 16*

**April 11**  
In-Class Activity

**April 16, April 18**  
Psychological Foundations of Learning and Instruction
READINGS:

de Vries, E. (2003). Educational technology and multimedia from a cognitive
perspective: Knowledge from inside the computer, onto the screen, and into our heads? In H. van Oostendorp (Ed.), *Cognition in a digital world* (pp. 155-174). Hillsdale, NJ: Lawrence Erlbaum Associates.

**ASSIGNMENT #3 handed out on April 18, due April 23**

**April 23, April 25**  Constructivist Approaches to Learning  
**PLEASE NOTE – Class on April 23 will be held in Annenberg G01**

READINGS:


**ASSIGNMENT #4 handed out on April 25, due April 30**

**April 30**  Motivation and Instruction

READINGS:


**May 2**  Interactivity and Adaptive Instruction

READINGS:


**ASSIGNMENT #5 handed out on May 2, due May 7**

**May 7**  Affective Education

READINGS:
Martin, B.L., & Reigeluth, C.M. (1999). Affective education and the affective domain:

**May 9**

**Models and Learning Environments**

**READINGS:**


**ASSIGNMENT #6 handed out on May 9, due May 14**

**May 14**

**The Media Debate**

**READINGS:**


**May 16**

**Multimedia and Hypermedia Part I**

**READINGS:**


**ASSIGNMENT #7 handed out on May 16, due May 21**

**May 21**

**Multimedia and Hypermedia Part 2**

**READINGS:**


**ASSIGNMENT #8 handed out on May 21, due May 25 by 12:00 noon. If not received by noon, it will be considered late.**

**May 23**  
Current Trends in the Examination and Usage of Educational Technology

**READINGS:**


**June 4**  
**Software evaluation assignment due by 12:00 noon**  
If not received by noon, it will be considered late.
Grades will be based on the following course requirements:

1) **Homework assignments**: (10 points each: total 80 points). The purpose of these assignments is to evaluate your understanding and integration of the lecture materials and the assigned readings, as well as to help you critically think about core course topics. Over the course of the semester you will be given 8 reflection/reaction/task assignments to complete. Assignments will be due as indicated on the assignment sheet, and scored as indicated on the assignment sheet requirements. Each assignment will be from 1-4 pages in length. Homework assignments are due at the beginning of each class or else will be considered late.

2) **A 4-6 page critique of a popular press article addressing issues in Educational Technology** (30 points). The purpose of this assignment is to require you to think critically about common beliefs and expectations with respect to instructional technology. You must read and critique an article from a popular press source discussing educational technology. Papers will be graded based on the following four criteria: Quality of your summary of the article (5 points), degree to which you connect the article’s claims with principles of educational technology discussed in class, both in terms of what it might get right and what it might get wrong (10 points), implications of the information described in the article for actual educational settings (10 points), and the clarity of your writing (5 points). Your critique should be conceptualized as an informed discussion of the article you choose. You *MUST* clear the article with the instructor before writing up your critique. The critique is due on May 9 at the beginning of class or else it will be considered late.

3) **A 5-7 page software evaluation** (30 points). The purpose of this assignment is to provide you with an opportunity to apply what you’ve learned with regards to a technology of your own interest. Your evaluation will be graded with respect to the degree to which you construct logical, coherent arguments, and your use and understanding of principles/research/theory we have discussed in class. In other words, you are to go beyond simply writing an opinion piece – this should be an evaluation of the technology/software with respect to principles of education. Papers will be graded based on the following three criteria: Quality of your summary of the software (10 points), evaluation of the software with respect to course principles and theories (10 points), and the clarity of your writing (10 points). Your evaluation must be an informed discussion of the technology you choose. You *MUST* clear the software technology with the instructor before writing up your evaluation. The evaluation is due on June 4 by 12:00 noon or else it will be considered late.

4) **Participation in class** (10 points). Participation in class is expected and therefore part of your grade requirements. This includes attendance (not just being in class, but also showing up on time for class), participation in in-class assignments, and discussions. It also includes preparation for each class. You are responsible for having read the assigned readings prior to class, and for being prepared to discuss the issues addressed in those readings.
Here is a summary of the points you can gain over the semester:

HW#1 (10 points) + HW#2 (10 points) + HW#3 (10 points) + HW#4 (10 points) + HW#5 (10 points) + HW#6 (10 points) + HW#7 (10 points) + HW#8 (10 points) + Popular Press Critique (30 points) + Software Evaluation (30 points) + Participation (10 points) = 150 points. Grades will be assigned according to the following scale of total final points:

A : 138-150
A- : 135-137
B+: 132-134
B : 124-131
B- : 120-123
C+: 117-119
C : 109-116
C- : 105-108
D+: 102-104
D : 90-101
F : below 90

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**Policy for late homework and papers**
The due date for each homework and paper assignment can be found in the class outline. Homework is due at the beginning of each class (10:30AM). Papers are due at the indicated date/time for the assignments. Anything past those times will be considered late, and extensions on these deadlines will not be accepted. Please be responsible and ensure you not only complete your assignments before they are due, but that you also hand them in before they are due. Late assignments will be deducted 25% of the achieved grade on that paper for each day late, including Saturday and Sunday. You may submit your papers by e-mail but they must be received by the same deadlines to qualify as being on time. This means that the date/time stamp on the e-mail received by the instructor must indicate you have submitted by the required deadline. Anything beyond that time will be considered late, regardless of when it might have been sent – no exceptions.

**Policy for course incomplete**
A grade of incomplete (‘I’) will be given only in extreme circumstances (e.g., illness) and must be pre-approved by the instructor. If approved, a contract will be drawn up specifying the work to be done as well as subsequent due dates.

**Policy regarding extra credit**
There will be no extra credit opportunities given under any circumstances.

**Policy regarding Powerpoint slides**
Students can have access to slides for classes they have attended. If you have not attended a particular class, you will not be given access to the slides from that class. Students will have access to the slides at the conclusion of each class, not before.
Northwestern University Policy on Academic Integrity. Students are expected to conform to all of Northwestern’s policies regarding academic integrity, as published in the Northwestern University Student Handbook and Undergraduate Study. Numerous sources are available to assist you in proper citation and attribution in your written assignments; many of the sources are available from the Office of Studies. Instances of plagiarism and other forms of academic dishonesty will be taken seriously, and suspected instances will be addressed following the procedures outlined by the Office of Studies.

Registration at NU requires adherence to the University's standards of academic integrity. These standards may be intuitively understood, and cannot in any case be listed exhaustively; the following examples represent some basic types of behavior that are unacceptable:

1. **Cheating:** using unauthorized notes, study aids, or information on an examination; altering a graded work after it has been returned, then submitting the work for regrading; allowing another person to do one's work and submitting that work under one's own name; submitting identical or similar papers for credit in more than one course without prior permission from the course instructors.

2. **Plagiarism:** submitting material that in part or whole is not entirely one's own work without attributing those same portions to their correct source.

3. **Fabrication:** falsifying or inventing any information, data or citation; presenting data that were not gathered in accordance with standard guidelines defining the appropriate methods for collecting or generating data and failing to include an accurate account of the method by which the data were gathered or collected.

4. **Obtaining an Unfair Advantage:** (a) stealing, reproducing, circulating or otherwise gaining access to examination materials prior to the time authorized by the instructor; (b) stealing, destroying, defacing or concealing library materials with the purpose of depriving others of their use; (c) unauthorized collaborating on an academic assignment (d) retaining, possessing, using or circulating previously given examination materials, where those materials clearly indicate that they are to be returned to the instructor at the conclusion of the examination; (e) intentionally obstructing or interfering with another student's academic work or (f) otherwise undertaking activity with the purpose of creating or obtaining an unfair academic advantage over other students' academic work.

5. **Aiding and Abetting Academic Dishonesty:** (a) providing material, information, or other assistance to another person with knowledge that such aid could be used in any of the violations stated above, or (b) providing false information in connection with any inquiry regarding academic integrity.

6. **Falsification of Records and Official Documents:** altering documents affecting academic records; forging signatures of authorization or falsifying information on an official academic document, grade report, letter of permission, petition, drop/add form, ID card, or any other official University document.

7. **Unauthorized Access to computerized academic or administrative records or systems:** viewing or altering computer records, modifying computer programs or systems, releasing or dispensing information gained via unauthorized access, or interfering with the use or availability of computer systems or information.

**Americans with Disabilities Act.**

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Northwestern’s Services for Students with Disabilities (SSD) at 847-467-5530. The SSD office, at 601 University Place, Evanston, serves both the Evanston and Chicago campuses. In response to a request made by a qualified student with a disability, the University will arrange, at no cost to the student, for the provision of educational auxiliary aids, including sign-language interpreters, real-time captioners, note takers, readers, and tutors, determined by the University to be necessary to afford such student the opportunity for full participation in University programs.