EDUCATIONAL PSYCHOLOGY
PSYCHOLOGY 222
FALL SEMESTER 2004

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& by appointment

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Required textbook

Parsons, R. D., Lewis Hinson, S., & Sardo-Brown, D. (2001). *Educational psychology: A practitioner-researcher model of teaching*. Belmont, CA: Wadsworth Thomson Learning.

Course Theme & Objectives

The theme of this course is Learning Technologies. Over the course of the semester, you will be exposed to numerous technologies that have been designed to help students learn or to enhance some aspect of their academic performance. All course readings (other than the textbook), class assignments, and group discussions will revolve around the course theme. Students who complete the course should be able to:

- Understand the theoretical principles that motivate the design of a learning technology
- Understand the cognitive processes at work when students interact with a technology
- Understand students' cognitive and developmental limitations when they use a learning technology
- Identify and evaluate the pedagogical actions and strategies of learning technologies
- Understand theories of leaning and apply these theories to learning technologies
- Understand principles of motivation and apply these principles to instructional technologies
- Understand characteristics of students and evaluate how learning technologies adapt to the needs of individual learners
- Recognize the limitations of learning technologies for at-risk and special populations
- Gauge student benefits and learning gains as a result of using a learning technology
- Evaluate empirically the quality of a learning technology

Grade evaluation

Students can earn a total of 1200 points in this course. The breakdown of these points is as follows:

Weekly Textbook Quizzes	200 points (10 total, 20 points each)
Learning Technology Assessments	300 points (3 total, 100 points each)
Class participation	100 points
Team Member Evaluation	100 points
Oral Presentation	200 points
Final Paper	300 points

1. **Textbook Quizzes.** There will be weekly quizzes on a specified chapter in the textbook. It is important that you know the information in the textbook because it will not be covered in lectures. The format of the quizzes will be multiple-choice. Quizzes will be taken during the **first 15 minutes** of the class period; therefore, it is important that you are on time. If you miss or are considerably late for a quiz, you will not be given a make-up quiz.

2. **Learning Technology Assessments**. Each student will provide three Learning Technology Assessment write-ups during the semester. Each assessment will address a topic that is assigned by the instructor.

3. **Class Participation**. A substantial part of class time will be devoted to discussion of assigned readings and particular learning technologies. Each student is expected to contribute to the discussions. Participation points will be awarded at the end of the semester and are at the discretion of the instructor.

4. **Team Member Evaluation**. Each student will be a part of a three-member team that will be work together to thoroughly evaluate a learning technology that is assigned to the team. To ensure that each team member makes equitable contributions to the evaluation, each team member will be formally evaluated by the other team members. The anonymity of the evaluators will be protected.

5. **Oral Presentation**. Toward the end of the semester, each team will make a PowerPoint presentation to the class. In this presentation, team members will present a thorough overview, demo, and evaluation of their assigned learning technology. The presentations should be formal and professional (this means you should rehearse) and all team members must participate in the presentation. Team members will receive the same grade for the presentation.

6. **Final paper**. In the final paper, each student will provide a thorough evaluation of the learning technology assigned to his or her group at the beginning of the semester. Each paper is limited to 3500 words and must be written and referenced in APA style. This word limit does not include the title page or reference section.

Additional Requirements and Policies

1. **Writing assignments.** All writing assignments must be typed, proofread, and submitted in APA format. Failure to adhere to APA style will result in a deduction in your grade. Of course, you will be penalized for excessive grammatical, spelling, and formatting mistakes.
2. **Honor code.** All students are required to read the Honor Code. The constitution of the Honor Code is provided in the Student Handbook. Failing to properly reference published work is a violation of the Honor Code.
3. **Pledges.** All quizzes must be pledged, and the following pledges must be signed for the final paper:
    - The paper reflects my ideas and understanding of the topics and research presented in it.
    - This paper falls within the word limit for this assignment.
    - Another student enrolled in this class has read and provided feedback on this paper.
4. **Late work. I do not accept late work**.
5. **Attendance**. Roll will be taken at each class meeting. Excessive, unexcused absences will result in cruel and unusual punishment and a reduction in your grade.
6. **Check Web CT & email daily**. Check your email and the Web CT website daily so you don't miss schedule or assignment changes.

Date	Day	Class Activity	Reading Assignments & Due Dates
8/26	TH	First day of class Go over syllabus Explain Web CT Team Assignment	
8/31	T	Guest lecturer: Andrew Olney	Chapter 1; A2 (http://www.nap.edu/html/howpeople1/ch9.html)
9/2	TH	Guest lecturer: Dr. David Dufty	
		Children & Technology Unit	
9/7	T	Chapter 2 Quiz	Chapter 2; A5
9/9	TH		A6

9/14	T	Chapter 6 Quiz	Chapter 6; A4
		Models of Teaching & Effective Pedagogy Unit	
9/16	TH		A7
9/21	T	Chapter 7 Quiz	Chapter 7 ; A8
9/23	TH		A9 ; A10
9/28	T	Chapter 12 Quiz	Chapter 12 ; A11
9/30	TH		A1 ; A12
10/5	T	Chapter 3 Quiz	Chapter 3 ; A13; **Learning Technology Assessment 1 due**
		Motivation & Computer Learning Unit	
10/7	TH		A16
10/12	T	Chapter 8 Quiz	Chapter 8 ; A3
10/14	TH		A15
10/19	T	Fall Break : NO CLASS	
10/21	TH		A14
		Social Intelligence & Animated Agents Unit	
10/26	T	Chapter 4 Quiz	Chapter 4 ; A17
10/28	TH		A21
11/2	T	Chapter 5 Quiz	Chapter 5 ; A18 ; Go Vote !
11/4	TH		A19 ; A20 ; **Learning Technology Assessment 2 due**
		Human Factors, Usability, Interface Design Unit	
11/9	T	Chapter 13 Quiz	Chapter 13 ; A22 ; A24 ; A25
11/11	TH	Guest Lecturer	
11/16	T	Chapter 9 Quiz	Chapter 9 ; A23 ; A26
11/18	TH	Team 1 Oral Presentation	
11/23	T	Team 2 Oral Presentation	**Learning Technology Assessment 3 due**
11/25	TH	Thanksgiving Break: NO CLASS	
11/30	T	Team 3 Oral Presentation	
12/2	TH	Team 4 Oral Presentation	
12/3	F	Final Paper Due	**Final paper due by 4:30 p.m.**
12/7	T	Team 5 Oral Presentation	
12/10	F	8:30 a.m. Final Exam Scheduled Team 6 Oral Presentation Team 7 Oral Presentation Team 8 Oral Presentation	

Required Course Readings

Technology & Learning

1. Anderson, J. R., Corbett, A. T., Koedinger, K. R., & Pelletier, R. (1995). Cognitive tutors: Lessons learned. *The Journal of the Learning Sciences,* 4(2), 167-207.
2. Bransford, J., Brown, A. L., Cocking, R. R. (Eds.) (2000). *How People Learn: Brain, Mind, Experience, and School: Expanded Edition*. Washington: National Academy Press. (Chapter 9: Technology to Support Learning) http://www.nap.edu/html/howpeople1/ch9.html
3. Harp, S. F., & Mayer, R. E. (1998). How seductive details do their damage: A theory of cognitive interest in science learning. *Journal of Educational Psychology, 90,* 414-434.

Children & Technology

4. Rochelle, J. M., Pea, R. D., Oxon, D. P., Hoadley, C. M., Gordin, D. N., Means, B. M. (2000). Changing how and what children learn in school with computer-based technologies. *Children and Computer Technology, 10,* 76-101.
5. Shields, M. K., & Behrman, R. E. (2000).Children and computer technology: Analysis and recommendations. *Children and Computer Technology, 10,* 4-30.
6. Wartella, E. A., & Jennings, N. (2000). Children and computers: New technology – old concerns. *Children and Computer Technology, 10,* 31-43.

Models of Teaching & Effective Pedagogy

7. Chi, M.T.H., Siler, S., Jeong, H., Yamauchi, T., & Hausmann, R.G. (2001). Learning from human tutoring. *Cognitive Science*, 25:471-533. http://www.pitt.edu/~chi/papers/image3.pdf

8. Core, M. G., Moore, J. D., & Zinn, C. (2003). The role of initiative in tutorial dialogue. *Proceedings for the 10th Conference of the European Chapter of the Association for Computational Linguistics,* Budapest, Hungary.

9. Derry, S. J., Potts, M. K. (1998). How tutors model students: A study of personal constructs in adaptive tutoring. *American Educational Review*, 35(1), 65-99.
10. du Boulay, B., & Luckin, R. (2001). Modeling human teaching tactics and strategies for tutoring systems. *International Journal of Artificial Intelligence in Education*, 12(3), 235-256.
11. Frey, L. A., & Reigeluth, C. M. (1986). Instructional Models for Tutoring: A Review. *Journal of Instructional Development, 9(1), 2-8.*
12. Graesser, A.C., Person, N., Harter, D., & TRG (2001). Teaching tactics and dialog in AutoTutor. *International Journal of Artificial Intelligence in Education, 12,* 257-279. PDF version
13. Merrill, D. C., Reiser, B. J., Ranney, M., & Trafton, J. G. (1992). Effective tutoring techniques: A comparison of human tutors and intelligent tutoring systems. *Journal of the Learning Sciences, 2,* 277-305.

Motivation & Computer Learning

14. Core, M. G., Moore, J. D., & Zinn, C. (2002). Initiative in tutorial dialogue, *ITS 2002 Workshop Proceedings on Empirical Methods for Tutorial* Dialogue Systems *(pp. 46-55). San* Sebastian, Spain.

15. del Soldato, T., & du Boulay, B. (1995). Implementation of motivational tactics in tutoring systems. *International Journal of Intelligence in Education, 6,* 337-378.
16. Lepper, M. R., & Woolverton, M. (2002). The wisdom of practice: Lessons learned from the study of highly effective tutors. In J. Aronson (Ed.), *Improving academic achievement: Contributions of social psychology* (pp. 135-158). Orlando, FL: Academic Press.

Social Intelligence & Animated Agents

17. Atkinson, R. K., Mayer, R. E., & Merrill, M. M. (2004). Fostering social agency in multimedia learning: Examining the impact of an animated agent's voice. *Contemporary Educational Psychology*. Elsevier, Inc.
18. Baylor, A. L., Shen, E., Warren, D. (2004). Supporting learners with math anxiety: The impact of pedagogical agent emotional and motivational support. *ITS 2004 Workshop Proceedings on Social and Emotional Intelligence in Learning Environments.* Maceio, Brazil Springer-Verlag. http://www.cogsci.ed.ac.uk/%7Ekaska/W7_baylor_revised.doc
19. Burleson, W. & Picard, R. (2004). Affective Agents: Sustaining Motivation to Learn Through Failure and a State of "Stuck". *ITS 2004 Workshop Proceedings on Social and Emotional Intelligence in Learning Environments.* Maceio, Brazil Springer-Verlag. http://www.cogsci.ed.ac.uk/%7Ekaska/16burleson.doc
20. Chaffar, S., & Frasson, C. (2004). Using an emotional intelligent agent to improve the learner's performance. *ITS 2004 Workshop Proceedings on Social and Emotional Intelligence in Learning Environments.* Maceio, Brazil Springer-Verlag. http://www.cogsci.ed.ac.uk/%7Ekaska/workshopArticle.doc
21. Moreno, R., Mayer, R. E., Spires, H. A., & Lester, J. C. (2001). The case for social agency in computer-based teaching: Do students learn more deeply when they interact with animated pedagogical agents**?** *Cognition and Instruction. 19*, 177-213.

Human Factors, Usability, Interface Design

22. Nielsen, J. (1999). Designing web usability. Indianapolis, IN: New Riders Publishing. (Chapter 2: Page Design).
23. Hertzum, M., & Jacobsen, N. E. (2003). The evaluator effect: A chilling fact about usability evaluation methods. *International Journal of Human-Computer Interaction, 15,* 183-204.
24. Reiber, L. P. (1990). Using computer animated graphics in science instruction with children. *Journal of Educational Psychology, 82,* 135-140.
25. Reiber, L. P., Boyce, M. J., & Assad, C. (1990). The effects of computer animation on adult learning and retrieval tasks. *Journal of Computer-Based Instruction, 17,* 46-52.
26. Wright, P., & Milroy, R. (1999). Static and animated graphics in learning from interactive texts. *European Journal of Psychology Education, 14,* 203-224.

Suggested Course Readings

Becker, H. J., (2000). Who's wired and who's not: Children's access to and use of computer technology. *Children and Computer Technology, 10,* 44-75.

Chi, M.T.H. (1996). Constructing self-explanations and scaffolded explanations in tutoring. *Applied Cognitive Psychology*, 10, 33-49. http://www.pitt.edu/~chi/papers/selfex96abs.html

Chi, M.T.H., Siler, S.A., & Jeong, H. (2004). Can tutors monitor students' understanding accurately? *Cognition and Instruction*, 22(3), 363-387. http://www.pitt.edu/~chi/papers/ChiSilerJeong.pdf

Hasselbring, T. S., & Williams Glaser, C. H. (2000). Use of computer technology to help students with special needs. *Children and Computer Technology, 10,* 102-123.

Lepper, M. R., Aspinwall, L., Mumme, D., & Chabay, R. W. (1990). Self-perception and social perception processes in tutoring: Subtle social control strategies of expert tutors. In J. M. Olson & M. P. Zanna (Eds.), *Self-inference and social inference: The Ontario symposium*, Vol. 6 (pp. 217-237). Hillsdale, NJ: Erlbaum.

Lepper, M. R., Woolverton, M., Mumme, D. L., & Gurtner, J. (1993). Motivational techniques of expert human tutors: Lessons for the design of computer-based tutors. In S. P. Lajoie & S. J. Derry (Eds.), *Computers as cognitive tools* (pp. 75-105). Hillsdale, NJ: Erlbaum.

Littman, D., Pinto, J., & Soloway, E. (1990). The knowledge required for tutorial planning: An empirical analysis. *Interactive Learning Environments, 1,* 124-151.

Merrill, D. C., Reiser, B. J., Merril, S. K., & Landes, S. (1995). Tutoring: Guided learning by doing. *Cognition and Instruction*, 13, 315-372.

Moreno, K. N., Person, N. K., Adcock, A. B., Van Eck, R. N., Jackson, G. T., & Marineau, J. C. (2002). Etiquette and efficacy in animated pedagogical agents: The role of stereotypes. *Proceedings of the AAAI Fall Symposium: Etiquette for Human Computer Work* (pp.77-80). Falmouth, MA: AAAI Press. http://punya.educ.msu.edu/PunyaWeb/etiquette/docs/Moreno-paper.pdf

Nielsen, J. (1999). Designing web usability. Indianapolis, IN: New Riders Publishing. (Chapter 3: Content Design)

Shah, F., Evens, M. W., Michael, J., & Rovick, A. (2002). Classifying student initiatives and tutor responses in human keyboard-to-keyboard tutoring sessions. *Discourse Processes*, *33*, 1-52. PDF