



PSY6660 ~ Cognition and Instruction

Spring 2009



Offered on Thursdays at 4:30pm – 7:00pm in EDUC413C

Instructor

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Course Description. Cognition and Instruction is a one semester course designed to apply theories of cognitive psychology to learning and instruction. Thus, this course explores the principles of learning in the context of formal education. Educational research related to classroom practice and application will be considered in four domains: information processing/memory, attitudes/motivation, intelligence, and formal learning. This course will be conducted using a lecture/discussion format. Often, the professor and students will present new information, clarify information from the readings, and demonstrate relevant principles through informal activities. In addition, class discussions of relevant experiences are encouraged, and a structured field project will be assigned. The field project will provide observational applications of the presented theories.

Course Learning Objectives.

After successfully completing this course, you will be able to:

- Model the information processing theory of learning.
- Explain the importance of working memory and attention in the learning process.
- Explain automaticity and its role in instruction.
- Distinguish between declarative and procedural knowledge and describe the necessary elements for learning and retaining both.
- Describe the skills necessary for effective problem solving and critical thinking.
- Delineate the factors contributing to motivation to learn, intelligence, and creativity.
- Construct theoretically-based interventions to promote motivation of students.
- Apply learning theory to enhance learning in a particular situation.
- Critically discuss current applications of learning theory to the classroom and real world situations.

Help!

Prof. Office Hours. Please set up an individual appointment with me for any extra help. This is usually the easiest way to coordinate our schedules!

Email. I typically respond to email within 24 hours of receipt. Besides seeing me directly before or after class, email is by far the best way for you to communicate with me.

Telephone. The telephone, and voice mail, is the least effective way to reach me. If you need to reach me quickly, email is superior. I will often respond to voice mail messages via email.

BlackBoard. This course will make use of Blackboard (<http://bb.usu.edu>). If you are registered for the course, the Blackboard resources will be available to you. Much electronic communication will occur within the Blackboard email system, and you will be able to access readings through Blackboard as well.

Textbook/Readings. *Cognitive Psychology and Instruction* (4th ed.) by Bruning, Schraw, Norby, and Ronning is required for this course. Reading assignments are provided in this syllabus, and readings outside of the textbook will be posted on Blackboard. I expect you to have done the reading by the class date listed on the syllabus.

Grading & Evaluation.

Rather than traditional exams, this course relies on three written projects, two presentations, and class participation.

These assignments provide ample opportunities to earn points—no extra-credit opportunities will be offered. This course is not graded on a curve. Grades will be assigned as follows: A: 930 - 1,000, A-: 900 - 929, B+: 870 - 899, B: 830 - 869, B-: 800 - 829, C+: 770 - 799, C: 730 - 769, C-: 700 - 729, D+: 670 - 699, D: 600 - 669, F: 0 - 599.

<i>Evaluation Activity</i>	<i>Points Possible</i>	<i>% of Grade</i>
Project 1: Paper I and Review (2/12 and 2/19)	200	20%
Project 2: Field paper (3/19)	200	20%
Project 3: Revised Paper I and Responses to Reviews (4/23)	200	20%
Two Presentations	200	20%
Participation	200	20%

Projects. There will be three written projects during the semester (due on 2/12+2/19, 3/19, and 4/23). Each project will be worth 200 points. For the first and third project, students may focus on any one of the following topics: memory, motivation, intelligence, or classroom learning. The second project (field project) will focus on child observations. All projects will be 3-5 pages in length. The following are guidelines and suggestions for each project.

Project 1: Paper I and Review of Classmate's Paper I. This project requires you to choose one aspect of cognitive psychology from this list of 4 broad topics: memory, motivation, intelligence, or classroom learning. Learn more about an area within your chosen topic by conducting a search of the primary literature, and write a 3-5 page paper describing what is known about this aspect of cognitive psychology and its implication for your field, (i.e., counseling, instructional design, instruction/teaching, etc.), or how you might design a novel tool or experiment within this area. Use APA format and a minimum of 8 high-quality sources (journal articles). The following are suggestions for possible topics:

Project 1: Memory

Focus on reviewing and critically analyzing existing strategies for assessing or improving memory. OR

Design a novel experimental tool for improving memory, and outline the potential results of such an experiment.

Topics for the above choices could include verbal, visual, or tactile memory assessment, or mnemonic devices or topics related to memory impairment (i.e., attention problems).

Project 1: Motivation

Focus on reviewing and critically analyzing existing strategies for motivating students. OR

Design a novel intervention or experiment that enhances motivation for learning, and describe potential results.

Project 1: Intelligence

Focus on reviewing and critically analyzing existing models of intelligence. OR

Design a novel instrument or experiment that measures intelligence, and describe potential results.

Topics for the above choices could include multiple intelligence, emotional intelligence, creativity, critical thinking strategies, or problem solving.

Project 1: Classroom learning

Focus on reviewing and critically analyzing classroom application of principles of learning

related to reading, science, or arithmetic. OR

Design novel teaching tools, applications for learning-disabled or gifted-and-talented students, or ideas related specifically to elementary, secondary, or post-secondary students. Describe potential applications of this design.

Paper I is due February 12 and will be worth 100 points. Send your paper to me before class that day in Microsoft Word format by email. After class, I will email your paper to another student in the class, and you will receive their paper from me in return. Your review of this classmate's paper is due to me AND to the author before class on February 19, and will also be worth 100 points. The review of the paper should focus on helping the writer improve their paper. This means you will need to give specific, constructive comments. The review should include the following:

1. A short summary of the paper and an overall grade (see the grades below)
2. Coherence: How well does the paper describe the author's thinking? Is it easy to follow the author's thoughts? Is the author's logic clear? Are there good transitions between thoughts? Is the organization of the ideas clear?
3. Quality of paper: Is the paper accurate (based on your understanding of cognitive psychology)? Does it appear that various viewpoints are addressed?
4. Quality of application/implications: Is any application grounded in the literature reviewed? Is it consistent with what you've learned about cognitive psychology?
5. APA style: Does the paper follow APA style?

Grades for peer review:

- I. "Little work needed" = a very good paper that is excellent in criteria 2-4
- II. "Work needed in places" = solid paper that needs additional work with some of the criteria
- III. "Much work needed" = substantial revisions need to be made in order to make the paper acceptable

I will return your Paper I electronically, with my comments added using the "Track Changes" function in Word.

Project 2: Field Project

Your field project will consist of writing a paper about child observations, focused on applying the theories discussed in class. A more detailed outline of the project and requirements will be made available to you later in the semester, and will tell you how to schedule two observation hours convenient for you with the Child Development Lab here on campus. A written report on your findings and interpretation of your observations (3-5 pages) will be due during class on 3/19. This project should include the following:

- Description of children observed
- Description of observations
- Summary of findings (could add a table)
- Interpretation of findings
- Implications for learning--make sure to include references to related research articles

You will choose a specific age group of children to observe. Your first hour of observations will be spent observing such behaviors related to cognition as: attention span, play, language, adult-child interactions, peer-child interactions, etc. After you have acclimated to observing these interactions, you should choose a specific area of interest to you in cognition (i.e., attention, perception, reading, problem solving, motivation, etc.) and spend your second hour observing this aspect and noting relevant behaviors in detail. You can also note prompts and results of these behaviors.

Project 3: Revised Paper I with Responses to Reviews

Submit the final version of your paper to me during our last day of class on 4/23. Cover sheets for this revised paper should include detailed responses to my review and your classmate's review of your paper (these do not count towards the 3-5 pages). The paper will be worth 100 points, and the responses to the reviews will also be

worth 100 points.

Participation and Presentations. Class members are expected to assist in teaching by leading discussion of two of the topics covered in the course. This does not mean that you merely explain the reading to everyone else (they have just read it, too). Leading the discussion means that you will take steps to engage us in an activity, application or discussion that promotes active involvement of participants in thinking about the concepts and their applications. Everyone will have thought through the readings before class, so consider this as you plan.

One of the best ways to learn information is to actively use it, so in your thinking about leading the discussion, consider ways to get your classmates to think about and use the information they have learned.

Participation and presentation will be graded as follows:

1. Participation. Coming to class and actively participating in discussion is worth 200 points. It's a graduate class, and I expect that you will come to class and be on time. So just do it :) Being consistently late or not coming to class will result in points being deducted from your participation grade. You may miss one class, but after that you lose 20 points per absence.
2. Each of your two presentations are worth 100 points and include leading discussion, self-evaluation, and assessment. I will assign a presentation week to everyone the first day of class. Plan to lead discussion for 40 minutes. The week you are presenting, you will email me your notes on what you will do to engage the class in the discussion by the Tuesday BEFORE you present, at 5pm. These notes might include thought questions, scenarios, activities, etc.--This should be about a page or two.

The week after your presentation, you must send me your self-evaluation and assessment before our next class meets. In your self-evaluation, discuss how successful the learning experience was. What worked, and what didn't? What could be done to improve the quality of the discussion (e.g., improve learning, increase engagement)? Apply principles from the course to your evaluation (1-2 pages in length). In your assessment, write two multiple-choice questions and indicate the correct answer. These will give you practice measuring the learner's ability to apply key concepts covered by you and in the readings for the week.

Border-Line Grades. Students whose final grades are *five or fewer points* to the next highest grade will be considered 'border-line' and will be evaluated for being awarded the next highest grade. The criteria for receiving the next-highest grade include, but are not limited to: attendance at all classes, improvement in project performance over time, and high-quality participation and presentations. Students who do not meet criteria will not be so-rewarded.

Extensions & Make-Ups. In the event of a University-approved absence or a significant medical problem, please see the Professor to discuss making up a missed assignment. In general, advance notice and/or appropriate documentation (e.g., written notification from a treatment provider) will be required to schedule a make-up. Neither family vacations, nor friends' weddings, nor accidentally falling asleep justify making up late assignments. There are no exceptions to this rule.

Academic Honesty. Plagiarizing, cheating or violating other reasonable standards of academic behavior will not be tolerated. Any student who engages in academically dishonest behavior will receive an "F" for the course grade. All incidents of cheating will be reported for university-level disciplinary proceedings.

Additional Resources

Academic Resource Center. Students qualify for services through the Academic Resource Center. The mission of the Academic Resource Center is to provide and promote services to enhance the learning skills, study strategies, and personal attitudes that influence students' academic success. If you would like more information, call the Academic Resource Center at 797-1128 or visit TSC room 305.

University Counseling Center. Students qualify for services through the University Counseling Center (UCC), which exists to aid USU students in their personal, social, and academic adjustment and development during

their university experience. For more information, call the UCC at 797-1012 or visit the TSC room 306.

Disability Resource Center. Students with physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, 797-2444 voice, 797-0740 TTY, or toll free at (800) 259-2966. Alternate format materials (Braille, large print or digital) are available with advance notice.

If you need additional accommodations for your learning experience, please let the instructor know as soon as possible. I am glad to make any necessary accommodations, but expect you to let me know what those needs are prior to class meetings and assignments.

Course Schedule

*The instructor reserves the right to modify the schedule at any time if necessity dictates. Also, note that presentations are not listed below, but are due as specified earlier in this syllabus.

Month	Day	Date	Topic	Tasks / Assignments
January	Thurs	8	NO CLASS	Read syllabus yourselves online Textbook Chapter 1
	Thurs	15	Introduction to Cognitive Psychology	<i>How People Learn</i> (NRC) Chapter 5: Mind and Brain Textbook Chapter 2
	Thurs	22	Sensory, Short-Term, and Working Memory	Miller, 1956 Baddeley, 1992 Textbook Chapter 3
	Thurs	29	Long-Term Memory: Structures and Models	Schacter, 1999 Textbook Chapter 4
February	Thurs	5	Encoding Processes	Craik and Lockhart Textbook Chapter 5 Bowers and Farvolden
	Thurs	12	Retrieval Processes	Braun, Ellis, Loftus *Paper I due to Professor and classmate for review* Textbook Chapter 6 Deci et al.
	Thurs	19	Beliefs about Self	Dweck and Leggett *Review of classmate's Paper I due* Textbook Chapter 7
	Thurs	26	Beliefs about Intelligence and Knowledge	<i>How People Learn</i> (NRC) Chapter 3: Learning and Transfer Sternberg Textbook Chapter 8
March	Thurs	5	Problem Solving and Critical Thinking	Halpern, 1998 Kuhn
	Thurs	12	No Class	Spring Break

			Textbook Chapter 9
	Thurs	19	Expertise and Classroom Contexts for Cognitive Growth Ericsson and Charness, 1994
			Field Paper due
	Thurs	26	Learning to Read Dempster 1988 Textbook Chapter 11
April	Thurs	2	No Class Free time to work on final paper
	Thurs	9	Reading to Learn Mayer and Moreno, 2002 Textbook Chapter 12
	Thurs	16	Cognitive Approaches to Mathematics Textbook Chapter 14 Gilmore et al., 2007
	Thurs	23	Cognitive Approaches to Science Textbook Chapter 15 Carlson et al., 2003
			Final Paper I due