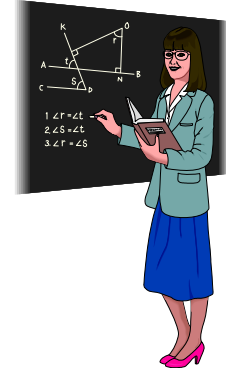


FOUNDATIONS OF COGNITION FOR EDUCATION
Educational Psychology 6800 Syllabus Dr. Shawn Glynn Fall 2009

Rationale and Course Objectives

“What nobler employment, or more valuable to the state, than that of one who instructs the rising generation?” Cicero, *De Divinatione*, II, 78 B.C.

Effective educators and psychologists understand a great deal about students’ mental activities, or *cognitive processes*. Cognitive processes include all the remarkable, interconnected functions of the mind, such as, attending, imaging, organizing, elaborating, hypothesizing, theorizing, creating, and problem solving. A thorough knowledge of how these cognitive processes operate is crucial to good instruction. This knowledge will enhance instruction at all levels--elementary grades, middle grades, high school, and college. In this course, you will be introduced to models of human thought that will help you to understand and develop your students’ cognitive processes. These cognitive processes underlie your students’ success in basic skills, such as reading, writing, and arithmetic, and content areas, such as science, mathematics, and social studies.



Role of Educational Psychology in Instruction:

Whenever instruction takes place, formally or informally, psychology is involved. Psychology is the scientific study of behavior. Educational psychology, in particular, is concerned with understanding the processes of teaching and learning, and developing ways to improve the effectiveness of these processes. Educational psychologists conduct quantitative and qualitative research studies to develop and validate instructional theories, principles, and methods.

Textbook:

Bruning, R. H., Schraw, G. J., Norby, M. M., & Ronning, R. R. (2004). *Cognitive Psychology and Instruction*. (4th. Ed.). Upper Saddle River, NJ: Pearson.

This text “is directed at those who are interested in understanding the principles of cognitive psychology and in applying them to instruction and curriculum design.” Bruning, Schraw, Norby, and Ronning

Topical Outline:

A. Human Cognition: Theoretical Background

Sensory, Short-Term, and Working Memory; Long-Term Memory; Encoding Processes; Retrieval Processes; Beliefs About Self; Beliefs About Intelligence and Knowledge

Required reading: Text chapters 1, 2, 3, 4, 5, 6, and 7 (pp. 137-146, 155-161), plus additional assigned readings.

Exam 1: Thursday, October 1

B. Human Cognition in Content and Skill Areas

Problem Solving; Classroom Contexts for Cognitive Growth; Technological Contexts for Cognitive Growth, Learning to Read, Reading to Learn; Writing; Cognitive Approaches to Mathematics; Cognitive Approaches to Science

Required reading: Text chapters 8 (pp. 162-180), 9, 10, 11, 12, 13, 14 (pp. 315-320; 329-337), and 15, plus additional assigned readings.

Exam II: Friday, December 11, 8:00 am

Application To Specialization (ATS) Presentation:

Each student will give a presentation during the course on an approved cognition topic applying it to his or her specialization. The topic will be a key topic as described in a chapter of the textbook. Drawing on information from the textbook and additional (i.e., not in the textbook) current journal articles and websites, the presenter will summarize (1) the important background on the topic, (2) the most relevant research studies, (3) the major implications for instruction, (4) a significant example of application and (5) because this is a psychology course, each student will demonstrate effective psychological presentation skills. In other words, the presentation will be motivational as well as informative. The presentation will be given in a lively, engaging, enthusiastic manner to foster interest and motivate your audience. No presentation will be read. The date and the time of the presentation will be determined by the instructor.

Grading Policy:

The maximum score on the first exam is 100 points. The maximum score on the Presentation is 50 points. The maximum score on the final exam is 100 points. Thus, a total of 250 points can be earned in the course. Grades are assigned according to the following system:

A	= 228 or above
A-	= 225-227
B+	= 222 to 224
B	= 204 to 221
B-	= 200 to 203
C+	= 197 to 199
C	= 178 to 196
C-	= 175 to 177
D	= 150 to 174
F	= 149 or below

Other Course Policies:

The University Honor Code and the Academic Honesty Policy apply. All academic work must meet the standards contained in “A Culture of Honesty” at the following website, <http://www.uga.edu/ovpi/honesty/acadhon.htm>. Students are responsible for informing themselves about those standards before performing any academic work. The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

If you haven't already done so, please make sure that EPSY 6800 *Foundations of Cognition for Education* is an appropriate course for you by discussing the UGA Graduate Bulletin course description, the syllabus, and the textbook with your advisor or major professor.

Regular, on-time attendance is essential for you to really benefit from the course and participate meaningfully in it. If you are absent for more than 3 of the class meetings, you will not have satisfied the regular attendance policy and you will receive a grade of W or WF, consistent with UGA policies.

If you regularly come to class late, you'll not only miss important content, but you'll distract others. If you are not present to sign the "on-time sign-in sheet" at the beginning of class, you are late for class; please sign the "late sign-in sheet." Two lates = 1 absence (see preceding paragraph).

You are responsible for reading assigned material prior to the date it is covered in class. Discussion, activities, and exams will be based on the assumption that you have prepared by reading the material. You are responsible for all other class content (e.g., instructions, explanations, changes in class and exam dates, etc.) whether present or not. The teaching materials (e.g., videos) are not loaned out.

So all students can listen without being distracted by "side conversations," one person speaks at a time in class (e.g., a student when presenting, a student when asking a question, the instructor when lecturing). Also, to avoid distractions, if you have a cell phone or audible pager, please turn it off during class, and limit computer use to EPSY 6800 note taking and EPSY 6800 concept searches. Because the class is only for those enrolled, it is not possible to bring others (e.g., spouses, parents, children, and friends) to class.

If you are absent during an examination, or if an examination is on-going and you come late, you will receive no points for it. Only under documented, genuine hardship is it possible to make up an exam. The make up exam will be administered at a date and time to be determined by the instructor. In addition, if you do not give your assigned presentation, you will receive no points unless documented, genuine hardship exists. Given hardship, it is possible to make up the presentation by doing a paper on the approved topic of the presentation.

Our scored examinations will be returned in class for you to review, but they will be kept on file and must be returned to the instructor before leaving class. You may review them at any time during the course. If you take an examination from class, you will receive no points for it, regardless of the score you previously received on it.

The course grade will be reported only by the UGA's registrar's office; the grade will not be reported by telephone or e-mail.

Appendix: EPSY 6800 Sample Exam Questions

In general, the actual exam questions will be similar in form to these samples. The questions will be drawn from textbook reading, lecture, handouts, discussion, videos, and student presentations.

Essays and/or Drawings

Directions: On a separate sheet of paper (or the back of this booklet), please answer the following question sets by writing a short essay (of about six sentences each) and/or drawing if requested to do so.

1. The modal model for human cognition (information processing) includes **sensory memory** and two other kinds of memory systems. Draw the modal model labeling these other two systems and the cognitive processes that connect them, and explain in a short essay what do these two systems do. (p.14-18, lecture, video).

As can be seen in my attached drawing (see p. 16, top), the second memory system is short-term memory (STM). STM is our consciousness. It's a working memory that functions like a "workbench" where we do our thinking and problem solving. The third system is long-term memory (LTM). It is the permanent storehouse for the knowledge we have learned. When we think and solve problems, we retrieve knowledge from LTM into STM.

2. Select a content area (e.g., mathematics, science or social studies) or a skill area (e.g., reading, writing, language learning) and explain the role that a student's *self-efficacy* plays in achieving well and acquiring mastery. (p. 112-113, lecture, student presentation).

In mathematics, self efficacy refers to a student's judgment of his or her ability to understand concepts and solve problems. For example, two students may receive the same grade on a mathematics test, with very different effects on their efficacy. All other things being equal, the student with the higher efficacy will be more inclined to persist and to maintain self-confidence, while the other student will not. Students who have high self efficacy are more likely to try to solve problems, to persist, and to finally solve them.

Explanations

Directions: Please answer each item set in the space provided. .

1. The "first-letter" mnemonic method uses *acronyms*. Explain what an acronym. Give an example and indicate what the example stands for. (p. 72-73)

It involves using the first letters of to-be-learned words to construct acronyms or words (e.g., Joint Photographic Experts Group = JPEG).

2. Explain what a *concept* is exactly. Give an example of a concept and list two of its *defining*

attributes. (p. 43)

A concept is a mental structure for representing a meaningful category (e.g., a mammal is a warm blooded that gives milk to its young).

Multiple Choice Questions

 Directions: Please answer on machine-scored answer sheets. Please check your completed answer sheets carefully, to ensure correct answer boxes are marked. Only the answer sheets will be used to determine correctness. Select the best answer from among the possible alternatives.

1. Higher-order knowledge that students have about how their own thought processes work is referred to as _____ knowledge. (p. 81)

- a. Strategic
- b. Procedural
- c. Declarative
- d. Metacognitive

2. Ms. Foster's seventh grade earth science class read a section about minerals that included the fact that "A diamond is the hardest substance found in nature." In order to help students to remember this important information, she asked them the following question after reading: "Can you guess what mineral is commonly used in industrial drill bits to drill through hard materials?" Ms. Foster's question is an example of the technique called (p. 67)

- a. encoding specificity
- b. elaborative rehearsal
- c. recall threshold
- d. advance organization



**Presentation Evaluation
Educational Psychology**

Presenter: _____

Topic: _____

<p>1. Summarize important background on topic History [] Controversy [] Relevance []</p>	
<p>2. Summarize most relevant research studies Major theorists, researchers []</p>	
<p>3. Summarize major implications for instruction</p>	
<p>4. Describe significant example of application</p>	
<p>5. Demonstrate psychological presentation skills Speaking voice: Audible [] Clear [] Well paced [] Good Pauses [] Rapport: Warmth [] Eye contact [] Personalization [] Proximity [] Smile [] Enthusiasm: Movement [] Voice [] Pacing [] Motivation [] Interest [] Time Management [] Organization [] Sequence []</p>	
<p><i>Additional comments</i></p>	<p><i>Total</i></p>

Shawn M. Glynn, 325K Aderhold Hall, 542-4110, sglynn@uga.edu
 Josiah Meigs Distinguished Teaching Professor
 Department of Educational Psychology and Instructional Technology
 Department of Mathematics and Science Education (Joint Appt.)

Current research website:
 Science Motivation Questionnaire
<http://www.coe.uga.edu/smq/>