

George Mason University
College of Education and Human Development
Fall 2009

09012009

EDEP 550 Theories of Learning and Cognition

Instructor: M.Layne Kalbfleisch, Ph.D.
Class Date & Time: Tuesdays, 4:30 p.m. to 7:10 p.m.
Class Location: Lecture Room, Krasnow Institute

Office Hours: Wednesdays, 11 a.m. - 1 p.m. and by appointment
Office: 141 Krasnow Institute
GMU Phone: 703.993.3516
Email: mkalbfle@gmu.edu
Lab Website: <http://krasnow.gmu.edu/kidlab>

COURSE DESCRIPTION

This course explores different theoretical perspectives on learning and cognition. It examines the relationship of psychological theories of learning and cognition to the biological bases of learning, the construction of knowledge and how these principles can impact learning environments and the various elements that comprise them including: technology, teacher proficiency, and diversity of student needs. The course focuses on comparing and contrasting contemporary evidence about learning and cognition with historical and theoretical perspectives on the learning process.

STUDENT OUTCOMES

- Students will be able to demonstrate an understanding of principles and theories of learning and cognition related to biological, behavioral, cognitive, social learning, and information processing models of learning and memory.
- Students will be able to develop an increased awareness of the ways in which theories of learning and cognition can be applied to instruction.
- Students will be able to become familiar with aspects of contemporary issues in education related to the science of learning.
- Students will be able to understand theoretical/research frameworks for explaining differences between novice and expert learners, critical thinking, creativity, and problem solving.
- Students will be able to understand the relationship between a range of technologies and the learning, critical thinking, and problem solving processes.
- Students will be able to develop an appreciation for and understanding of the variance of developmental and learning needs of culturally diverse and exceptional learners.
- Students will be able to demonstrate an understanding of how theoretical approaches to learning and cognition relate to classroom management, instruction, and assessment.
- Students will be able to design instruction that is consistent with the developmental and learning needs of today's students.
- Students will develop and reinforce their critical thinking, oral presentation, technological, and writing skills.

RELATIONSHIP TO PROGRAM GOALS AND PROFESSIONAL ORGANIZATION

The program goals are consistent with the following Learner-centered psychological principles (APA Division 15) outlined by the American Psychological Association Presidential Task Force in Education.

- Principle 1: The Nature of Learning Process
- Principle 2: Goals of the Learning Process
- Principle 3: Construction of Knowledge
- Principle 4: Strategic Thinking
- Principle 5: Thinking about Thinking
- Principle 6: Context of Learning
- Principle 7: Developmental Influences on Learning
- Principle 8: Social Influences on Learning
- Principle 9: Individual Differences on Learning
- Principle 10: Learning and Diversity

Please see:

American Psychological Association (1997). Learner-Centered Psychological Principles: *Guidelines for the Teaching of Educational Psychology in Teacher Education Programs*.

Retrieved October 14, 2002 from <http://www.apa.org>

NATURE OF COURSE DELIVERY

The course is structured around readings, reflections on those readings, class projects, technology activities, and exams. This course will be taught using lectures, discussions, and relevant group activities. The course has a heavy emphasis on active participation and engagement in the coursework.

BOOKS AND READINGS

See attached bibliography – all readings will be available for download off of the internet or handed out in class

COURSE REQUIREMENTS

1. Position paper (10 points)

- **(5-6 double-spaced pages)** The purpose of this paper is to evaluate theories or approaches from the perspective of an educational setting, issue, or problem of importance to you and synthesize them into your own thinking and beliefs about learning. **(DUE DATE: 9/22)**

These papers are to be a *synthesis* of your evaluation of the theory, your practical experience/application, and your current professional belief about the role of this theoretical information in the learning process. I must see evidence of all three criteria underlined here in order for you to receive full credit.

COURSE REQUIREMENTS

Recommendation: You may choose to keep a **reflective journal** throughout the course to give you a basis for these position papers. A complete and up-to-date journal may be submitted in lieu of an “**absence assignment.**”

2. Mid Term (20 points)

- This will be a case study format. You will analyze and respond to a series of prompts and questions about the scenario drawing from your learning (**DUE DATE: 10/20**)

3. Research Paper (30 points)

- You will complete a **research paper (10-15 double-spaced pages)** on a topic of your choosing. Your focus may be on a practical question or issue in contemporary education or an investigation into a theoretical aspect of learning or cognition. (**DRAFT DUE DATE: 12/8; FINAL DUE DATE: 12/15**)

Note:

All research must draw upon psychological, empirical, peer-reviewed articles on learning and cognition, citing at least 10 scholarly references.

Research papers must be handed in on time – 10% reduction for each day late.

Research papers must adhere to the **APA Publication Manual Guidelines**.

4. Theorist’s Cookbook and Teaming Assignment (20 points)

- You will be grouped in the second course meeting to begin an in-depth investigation of one educational psychology learning theorist. These presentations will continue throughout the semester. As a team, you will produce:
 - a 20 minute course lecture
 - group activity for the class
 - one-page handout that incorporates the “need to know” biographical and theoretical knowledge about that theorist.

5. Peer Review (10 points)

- Our last class meeting (**12/8**) will be a peer review of your research paper. You will bring 3 copies of a mature draft to share with your peers and myself. You will have one week to revise based on the review process.

6. Class Participation and Attendance Policy (10 points)

- Because of the importance of lecture and discussion in the total learning experience, students are encouraged to both attend and participate in class regularly.
- Attendance, punctuality, preparation, and active contribution to small and large group efforts are **essential**.
- These elements of behavior will reflect the professional attitude implied in the course goals and will account for **10% of the course grade**.
- With reference to the grading scale described later in this syllabus, this percentage is **equivalent to a full letter grade**.

- If students miss a class you must notify the instructor (preferably in advance) and are responsible for completing all assignments and readings for the next class. If you miss a class, you will be assigned an “**absence assignment**” to make up for participation. Or, there are substitution activities listed further on in the syllabus.

RUBRICS FOR PARTICIPATION AND ATTENDANCE

		LEVEL OF PERFORMANCE		
ELEMENT	Distinguished (9-10 pts.)	Proficient (8 pts.)	Basic (7 pts.)	Unsatisfactory (6 or less pts.)
Attendance & Participation	The student attends all classes, is on time, is prepared and follows outlined procedures in case of absence, the student actively participates and supports the members of the learning group and the members of the class.	The student attends all classes, is on time, is prepared and follows outlined procedures in case of absence; the student makes active contributions to the learning group and class.	The student is on time, prepared for class, and participates in group and class discussions. The student attends all classes and if an absence occurs, the procedure outlined in this section of the syllabus is followed.	The student is late for class. Absences are not documented by following the procedures outlined in this section of the syllabus. The student is not prepared for class and does not actively participate in discussions.

EVALUATION SCHEMA

Position paper	10 pts
Research paper	30 pts
Mid Term	20 pts
Theorist’s Cookbook & Teaming	20 pts
Class Participation and Attendance	10 pts
Peer Review of research paper	10 pts
TOTAL	100 pts

Letter grades will be assigned as follows:

A+	98-100%	A	93-97.49%	A-	90-92.49%
B+	88-89.49%	B	83-87.49%	B-	80-82.49%
C	70-79.49%	F	below 70%		

Note About Student Performance:

- All written assignments must be typed and follow APA format
- Grading on written work will take into account the following factors:
 - quality of written work
 - knowledge of content area
 - adherence to requirements of assignment.

As a graduate student, it is expected that all of your work will be turned in on the assigned dates. A late assignment is subject to a penalty of 10% of the award for every day that it is overdue.

HONOR CODE

To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of George Mason University and with the desire for greater academic and personal achievement, we, the members of George Mason University, have set forth the following code of honor. Any individual who is caught in the act of cheating, attempting to cheat, plagiarizing, or stealing will be brought forth before a council of their peers. In the event that the individual is found guilty, he or she will be punished accordingly. For further information, please refer to the University Catalog or Website at www.gmu.edu.

STATEMENT REGARDING DISABILITIES

This syllabus is subject to change based on the needs of the class. If you need course adaptations or accommodations because of a disability please inform your instructor and provide required documentation as soon as possible so that arrangements can be made. Documentation can be obtained from the Disability Resource Center, SUB I (703)-993-2427.

EXTRA CREDIT

To earn extra points to be generally assigned at the end of the semester.

TASK: My lab studies child development. We are looking for volunteers:

1. Children who are typically functioning and also those with Asperger's or high functioning autism, ages 9-18.
2. Typically functioning children, ages 9-11, who are accomplished musicians and have at least 4 years of musical training in piano, strings, or horned instruments.
3. You will receive 2 points for every volunteer family that cites you as the referral source.

DATE	TOPIC	READING & ASSIGNMENTS
9/1	Introduction Assumptions about Learning	
9/8	Linking Theory and Practice	Subban, 2006 OECD-CERI executive summary, 2007 In Class – Begin Theorists Cookbook
9/15	Contemporary Views of Learning How do you study Learning?	Goswami, 2005 Matsuzawa, 2007
9/22	Neurology of the 3 R's	<i>DUE: Position Paper</i> Goswami, 2004, 2006 Blakemore and Frith, 2005 Inoue and Matsuzawa, 2007
9/29	Building Scientific Literacy for Educated Consumption of Neuroscience Information	Kalbfleisch, 2008 Kim et al., 1997
10/6	Learning in Diverse Populations/Diverse Settings	Kalbfleisch and Banasiak, 2007 Kalbfleisch and Iguchi, 2007 Kalbfleisch, 2006
10/13 LIB	<u><i>Reading Days</i></u>	<i>NO CLASS MEETING</i>
10/20	<i>Society for Neuroscience Meeting Chicago, IL – No Meeting</i> <i>Research Day for Final Papers – Decide topic, draft bibliography</i>	<i>DUE: Mid-Term – send electronically to mkalbfl@gmu.edu</i> <i>DUE: Draft paragraph abstract and bibliography on final paper topic for approval</i>
10/27	Learning in Diverse Populations Cultural Differences Language Issues	TBA
11/3	Neurobiology of Constructivist Learning	TBA
11/10	Intelligence, Problem Solving, and Creativity	TBA

11/17	Learning, Arts, and the Brain	Dana Report, 2008
11/24	THANKSGIVING	NO CLASS MEETING
12/1	Transfer of Learning and Novice to Expert Performance	TBA
12/8	Peer Review of DRAFT Research Papers	DUE: DRAFT Research Paper
12/15	Research Paper DUE	Final PAPER: submit by 7:10 pm electronically to mkalbfl@gmu.edu

Text:

Driscoll, M. (2004). Psychology of Learning for Instruction. Allyn & Bacon. ISBN-13: 9780205375196

Required Readings:

Understanding the Brain – The Birth of a Learning Science, Second Edition. (2007). Organisation for Economic Co-operation and Development - Centre for Educational Research and Innovation (OECD-CERI). Paris, France: Organisation for Economic Co-operation and Development Publication Office. Executive summary.
<http://www.oecd.org/dataoecd/39/53/40554190.pdf>

Learning, Arts, and the Brain. The Dana Consortium Report on Arts and Cognition. M Gazzaniga (organizer), C Asbury, B Rich (eds). The Dana Press <http://www.dana.org>

Blakemore S, Frith U (2005). The learning brain: Lessons for education: a précis. *Developmental Science*, 8 (6): 459-465.

Goswami, U (2004). Neuroscience and education. *British Journal of Educational Psychology*, 74, 1-14.

Goswami U (2005). The brain in the classroom? The state of the art. *Developmental Science*, 8 (6), 467-469.

Goswami U (2006). Neuroscience and education: from research to practice? *Nature Reviews Neuroscience*, 7 (5), 406-411.

Inoue S, Matsuzawa T (2007). Working memory of numerals in chimpanzees. *Current Biology*, 17 (23): 004-004.

- Kalbfleisch ML (2008). Getting to the Heart of the Brain: Using Cognitive Neuroscience to Explore the Nature of Human Ability and Performance. In L.Kalbfleisch (ed.) Special Issue on the Cognitive Neuroscience of Giftedness. *The Roeper Review*, 30 (3): 162-170.
- Kalbfleisch ML, Iguchi C (2007). Twice Exceptional Learners. In Plucker, J. A., Callahan, C.M. (Eds.), Critical Issues and Practices in Gifted Education. Waco, TX: Prufrock Press (pps. 685-696).
- Kalbfleisch ML, Banasiak M (2007). ADHD. In Plucker, JA, Callahan, CM (Eds.), Critical Issues and Practices in Gifted Education. Waco, TX: Prufrock Press (pps. 15-30).
- Kalbfleisch ML (2006). Redux-neuroscience meets pedagogy: A matter of form and implications for gifted education. *Gifted Children: American Education Research Association (AERA) SIG Research on Giftedness and Talent*, 1(1), 5-6.
- Kim KHS, Relkin NR, Kyoung-Min L, Hirsch J (1997). Distinct cortical areas associated with native and second languages. *Nature* 388, 171-174.
- Matsuzawa T (2007). Comparative cognitive development. *Developmental Science* 10 (1): 97-103.
- Subban P (2006). Differentiated instruction: A research basis. *International Education Journal*, 7 (7): 935-947.
<http://ehlt.flinders.edu.au/education/iej/articles/v7n7/Subban/paper.pdf>
- Tomlinson CA, Kalbfleisch ML (1998). Teach Me, Teach My Brain: A Call for Differentiated Classrooms. *Educational Leadership*, 56 (3), 52-55

Some Suggested Theorists for Choice Articles:

Howard Gardner – Multiple Intelligence Theory
 Robert Sternberg – Triarchic Theory of Intelligence
 Daniel Goleman – Emotional Intelligence
 David Feldman – Development of Creativity
 Mihalyi Csikzentmihalyi – Creativity and “Flow”
 Teresa Amabile – Creativity and Environmental Context
 Michael Posner – Relationship of Attention Development to Cognitive Development
 Jerome Bruner – Constructivist Learning

Theorist Cookbook:

Vygotsky	Piaget
Bandura	Erikson
Bloom	Krathwohl
Bruner	Dewey
Kohlberg	Gilligan
Gardner	Sternberg