EDUCATION 9
COGNITION APPLIED TOWARD EDUCATION

SPRING 2014

General Information
Class Meeting Times: (2) MWF 1:45–2:50pm
X-hour: Thu 1:00–1:50pm
Class Meeting Location: 371 Berry Library
Office Hours: Mon & Wed 3:00–4:30pm
Office: Raven 210

Professor: Sean Kang, Ph.D.
sean.kang@dartmouth.edu
(603) 646-9051
www.dartmouth.edu/~cogedlab

Course Description
This course will explore the cognitive processes that underlie learning in educational contexts. We will examine: (i) how the mind encodes, stores, and retrieves knowledge, (ii) how learners monitor and regulate their learning, and (iii) how expertise is acquired. We will also delve into the scientific literature to evaluate the effectiveness of various study/instructional strategies, and compare the research findings against our own intuitions (i.e., how we learn best may not correspond to how we think we learn best). We will consider the implications of cognitive science research for enhancing educational practice.

Course Goals
The goals of the course for each student are to (i) understand human learning and memory from an information processing perspective; (ii) recognise that how we think we learn best may not match how we actually learn best; (iii) develop skills for reading and analysing scientific journal articles; (iv) integrate the research findings and identify existing gaps in the literature; and (v) appreciate the practical implications of cognitive research for optimizing instruction and learning.

Required Readings
All the readings for this course are articles from scientific journals, and the PDFs have been posted on Blackboard via electronic reserves.

Class Format
Class meetings will include discussions, lectures, and student presentations. You are expected to be present, and you will be responsible for all class material. X-periods will sometimes be used during this course, so please ensure you are available during those times. Your performance will be evaluated by 2 exams (midterm and final), a term paper (+ in-class presentation), and your participation in class.

Methods of Assessment

1. Participation (15%)
   There is ample evidence that active participation during the learning process leads to better retention than passive, receptive learning. To promote active learning and an enjoyable, interactive classroom environment, class participation is encouraged and the quality of your comments, questions, and responses will count towards your participation grade in the course. To help you prepare to participate in class, you will be expected to (i)
complete the readings before each day of class, and (ii) post at least 1 comment on Blackboard about each reading/paper by 12 noon the day of class (for days when there is just 1 assigned paper, post 2 comments about the reading). Comments can include questions, critiques about the methodology or logic of the authors, or suggestions about follow-up research.

2. Student Interest Paper (20% Written; 5% Class Presentation)
   It is impossible to cover all topics related to cognition and learning/education in ~9 weeks, and hence it is likely that there are some topics that are missing from the class schedule that you wish could be tackled in class. The term paper gives you the opportunity to pursue one of those topics in depth. You are to choose a topic relevant to cognition and learning/education that is not listed in the schedule (or you may choose a topic that is listed, as long as you delve into an aspect that is not covered by the assigned readings) and write a position paper. You should cite at least 6 references from peer-reviewed journals (excluding assigned readings), and your paper should be 6 to 8 pages in length.
   You may discuss/brainstorm potential topics with your classmates. However, the research (i.e., finding relevant journal articles) and writing has to be individual work. If you are unsure whether your topic of choice is appropriate, please check with me. The paper is due on May 14 (Wednesday) at the start of class. You will also give a brief presentation (~7 min) on the topic of your paper on May 21 (Wednesday).
   For your paper, please use 12-point Times New Roman font, double-spacing, and print margins that are 1-inch on all sides (this is not the default in Microsoft Word, so make sure to change the settings). Also, please number all your pages and staple them together before turning the paper in. For citations in your papers, you must adhere to APA style (refer to the APA Publication Manual or online guides, e.g., http://owl.english.purdue.edu/owl/resource/560/01/). Papers will be graded on content and style, so please proofread carefully.

3. Leading Class Discussion (10%)
   Research has shown that the expectancy of having to teach or explain the material to someone else can improve learning – a topic that we will cover in Week 8! To aid in your learning of the material, as well as foster good public presentation skills, you will get to lead the discussion of the readings on 2 different days of class (a sign-up sheet will be circulated in Week 1). As the discussion leader, it is recommended that you prepare (i) a summary of each reading/study, and (ii) a list of questions/comments to spur discussion. You may use PowerPoint slides to facilitate your presentation/discussion.

4. Midterm and Final Exams (25% each)
   The exams will consist of short essay questions. The midterm exam will be on April 21 (Monday) in class, and the final exam will be on May 30 (Friday) at 3:00pm (location TBA). Please mark your calendars now to ensure that you are able to take the exams as scheduled.

Late Policy
Papers that are submitted after the deadline (start of class on the due date) will have 1 point deducted from the score for each day that it is late (e.g., if the paper earns 18 points, you will end up with 17 points if you submit it on the due date but after the start of class).
Extra Credit
You have the option of earning up to 2 extra points by participating in research conducted in the Education department. In order to pursue this option, you will need to create an account at http://ed-dartmouth.sona-systems.com/ using your Dartmouth email address and sign up for a study. The amount of credit points you will earn from each study will be listed when you sign up (1 credit point = ~ 1 hour of participation). When you complete a study, please be sure to tell the experimenter which Education course the credit(s) should be assigned to.

Special Accommodations
1. Students with disabilities
   Students with disabilities enrolled in this course and who may need disability-related accommodations are encouraged to see me privately as early as possible in the term. Students requiring disability-related accommodations must register with the Student Accessibility Services (SAS) office. Once SAS has authorized accommodations, students must show the originally signed SAS Services and Consent Form and/or a letter on SAS letterhead to me. As a first step, if students have questions about whether they qualify to receive accommodations, they should contact the SAS office. All inquiries and discussions about accommodations will remain confidential.

2. Religious observances
   Some students may wish to take part in religious observances that occur during this academic term. Should you have a religious observance that conflicts with your participation in the course, please meet with me before the end of the second week of the term to discuss appropriate accommodations.

Academic Honour Principle
You are expected to familiarise yourself with and uphold all aspects of the Academic Honour Principle. See http://www.dartmouth.edu/~uja/honor for the official statement. You may not receive or provide assistance on any quiz or exam. Anything turned in with your name on it must be solely your own work, and submitted only for this class. Plagiarism is the submission or presentation of work, in any form, that is not your own, without acknowledgment of the source. You must cite all sources according to the formal APA guidelines. I take the Academic Honour Principle seriously and expect you to do the same.

Final Note on How to Excel in this Course
I want you to do well in this class. Therefore, there are multiple chances for assessment. Please use these opportunities as an incentive to keep up with the class material.

You are encouraged to engage in active reading of the assigned articles. The purpose of the lectures is to explain, demonstrate, and amplify the core content. There will be some overlap between the readings and the lectures, but there will be a substantial amount of material that is unique to each. Your understanding of each lecture will be best if you have done the assigned readings before each class. Also, come to class ready to discuss the readings, so that your classmates and I can gain from your insights. If you find yourself not understanding the assigned readings and lectures, please set up an appointment with me or drop by during my office hours.
## COURSE SCHEDULE

Note: Readings are to be completed by the indicated class date. The schedule is subject to change. All articles are available through Blackboard.

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<thead>
<tr>
<th>WEEK</th>
<th>DATE</th>
<th>TOPIC</th>
<th>READING / ASSIGNMENT</th>
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<td></td>
<td>Mar 27</td>
<td>X-period</td>
<td>Primer on research methods &amp; how to read a scientific journal article</td>
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<td>Apr 2</td>
<td>NO CLASS</td>
<td>Away for a workshop in Houston</td>
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<td>Apr 3</td>
<td>X-period</td>
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<td>Apr 10</td>
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<td>Apr 17</td>
<td>X-period</td>
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<td>Apr 21</td>
<td>Feedback</td>
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<td>Apr 24</td>
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<td>May 1</td>
<td>X-period</td>
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| May 5 | Guest Speaker | Dr. Mary Pyc, a postdoctoral fellow at Washington University in St. Louis, will speak about her research on cognition and education.  
(Readings to be announced) |
| May 8 | X-period | -- | |
| May 14 | Learning for Teaching | [Term papers due at the start of class]  
<table>
<thead>
<tr>
<th>Date</th>
<th>Comments</th>
<th>References</th>
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<tr>
<td>May 15</td>
<td>X-period</td>
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<td>May 16</td>
<td>NO CLASS</td>
<td>Green Key Weekend</td>
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<td>9</td>
<td>May 19</td>
<td>Issues in the Classroom</td>
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<td>May 21</td>
<td>Student Presentations</td>
<td>Each student will give a brief presentation on the topic of his/her term paper</td>
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<td>May 22</td>
<td>X-period</td>
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<td>May 23</td>
<td>NO CLASS</td>
<td>Away for a conference in San Francisco</td>
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<td>10</td>
<td>May 27</td>
<td>NO CLASS</td>
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<td>Memorial Day (Holiday)</td>
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<td>Wrap-Up Day</td>
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<td>To cap off the course, we will discuss the following brief commentaries on applying cognitive psychology to education:</td>
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<td>[Do you agree with any of the views expressed in the above commentaries? Be ready to discuss in class.]</td>
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### FINALS

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<tr>
<th>Date</th>
<th>Remarks</th>
<th>Time</th>
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<tr>
<td>May 30</td>
<td>Final exam</td>
<td>3 pm (Friday)</td>
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