EDUCATION 01
THE LEARNING BRAIN:
INTRODUCTION TO CHILD DEVELOPMENT AND EDUCATION
FALL 2013

General Information

Professor: Michele Tine
Email: michele.tine@dartmouth.edu
Phone: 603-646-9043
Office: Raven House 211

Class Time: 10A (Tu, Th 10:00-11:50 a.m.)
X-hour: W 3:00-3:50 p.m.
Class Meeting Location: TBA
Office Hours: W 8:45 a.m. - 11:45 p.m.

Course Description

Education, development, and learning are inextricably intertwined. We will explore how the science of learning and development connects with education from preschool to high school. Survey topics include school structure, teaching, assessment, motivation, memory, higher-level thinking, math, reading, writing, science, and social and emotional development. For each topic, we will consider research from multiple perspectives, including neuroscience, developmental psychology, and education, in order to build a complex, interdisciplinary understanding of the typically developing learning brain.

Course Goals

- Introduce the developing field of Mind, Brain, and Education (MBE) that serves as the focus of the Education Department. This approach is the wave of the future in education and Dartmouth is on the cutting edge of this movement.
- Introduce you to the research and courses offered in the Education Department that use the MBE approach.
- Understand and critically evaluate foundational findings of developmental psychology (M) and neuroscience (B). Integrate how these foundational findings impact and are impacted by education (E).
- Improve your ability to write about scientific findings and express yourself in a logical, clear, and concise manner.

Required Readings

There is no textbook for this class. The readings for this course are scientific articles or excerpts. The scientific articles and excerpts have been posted to the course Blackboard site. To access the readings that are followed by the notation ‘(LR)’ on the syllabus, click the ‘Library Reserves’ link on the Blackboard menu. To access the readings that are followed by the notation ‘(CM)’ on the syllabus, click the ‘Course Materials’ link on the Blackboard menu.
1. Participation and Attendance
Participation is an important component of this course and will be based not only on class attendance but also participation in class discussions. It is expected that the required readings will have been completed before you come to class and you are prepared to comment, question, discuss, and/or critique them.

2. Brief Assignments
There will be three brief assignments due throughout the term.

Brief Assignment #1:
*Reading, understanding, and critically analyzing empirical research articles.*
The purpose of this assignment is to help you feel comfortable reading and evaluating the various components of an empirical research article. First, you will need to locate the empirical article entitled “What Does Doodling Do?” written by Jackie Andrade and published in the journal *Applied Cognitive Psychology*. Then, you will need to answer a set of questions about the specific components of the article (e.g., abstract, introduction, methods, results, discussion). More specific instructions are posted on Blackboard. **Due Oct 1st.**

Brief Assignment #2:
*Neuroscience and Education in the news.*
This assignment is designed with two primary goals in mind. The first is to critically evaluate scientific and education reports in the media. The second is to explore the connections between brain research and education. The assignment has 3 parts. 1) Find and summarize a news article reporting on a brain related finding or an education finding. 2) Assess the claims made in the news article by finding the original scientific article or results and determine the accuracy of the media report. 3) Integrate and interpret this report in terms of the links between brain research and education. Detailed instructions are on Blackboard. Your paper should only be 1.5 pages double-spaced, so make sure every word counts. **Due Oct 24th.**

Brief Assignment #3:
*Constructing Valid Assessment Answers*
Student assessment is a hot topic in the field education for many reasons. This assignment aims to spur some in class discussion about assessment in general, provide you with insight as to how difficult it can be to construct valid assessment items, and provide you with a study tool. There are two parts to this assignment. 1) You will each be assigned one reading from class. Write one multiple-choice question about the content of the reading. The question should be appropriate for a college-level midterm exam. In half of a page, justify the “correct” answer and explain the inaccuracies of the “incorrect” answers. 2) Write one short-answer question about the content of the reading. Write 2-3 sentences that constitute an ideal answer.

Depending on your article assignment, you will be placed into ‘Group A’ or ‘Group B’. The deadlines for the two groups are different. Group A: **Due Oct 16th.** Group B: **Due Nov 12th.**

You will be graded on the quality of your questions, the accuracy of your answers, and the appropriate level of difficulty for college-level exams. Detailed instructions are posted on Blackboard. Please note: I will pull a handful of your questions and include them on the final exam.
3. Midterm Exams
There will be two midterm exams given in class. The first will be on Oct 10th. The first midterm will include content covered up to and including the class period before the exam. The second midterm will be on Nov 5th and will cover content covered only after the first midterm. Both midterms will include a variety of assessment formats including multiple choice, short answer, and short essay and both will be based on the required readings, lectures, and in-class discussions.

4. Final Exam
There will be a final exam on MONDAY, Nov 25th at 3:00 p.m. The final will be cumulative. Like the midterms, the final will include a variety of assessment formats including multiple choice, short answer, and short essay and will be based on the required readings, lectures, and in-class discussions.

Course Requirements and Grading

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<tr>
<th>Requirement</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Participation and Attendance</td>
<td>5%</td>
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<tr>
<td>Brief Assignment 1</td>
<td>6%</td>
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<td>Brief Assignment 2</td>
<td>6%</td>
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<tr>
<td>Brief Assignment 3</td>
<td>6%</td>
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<tr>
<td>Midterm #1</td>
<td>21%</td>
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<td>Midterm #2</td>
<td>21%</td>
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<tr>
<td>Final</td>
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Late Policy

The brief assignments must be handed in at the beginning of class on the date indicated on the syllabus. Brief assignments handed in after class will be counted as one day late. **Ten points** will be deducted from the grade of any assignment turned in one day late and **five additional points** will be deducted for each additional day that passes.

You are responsible for the assignments even if you cannot be in class on the day they are due. If you cannot be in class, please turn in the assignment to me **before** class time and it will not be counted as late.

RWIT: The Student Center for Research, Writing, and Information Technology

RWIT is a free service dedicated to helping students develop more effective strategies for generating and organizing ideas, finding and evaluating research sources, and revising compositions. At RWIT, you can meet one-on-one with a tutor to discuss a paper, research project, or assignment. Whether you are brainstorming, drafting, or polishing, the tutors can provide feedback that will help improve your work. This is a wonderful service that you are lucky to have as a Dartmouth student. Take advantage of it.

To make an appointment, please see http://www.dartmouth.edu/~rwit/students/appointment.html

Students with Disabilities

Students with disabilities enrolled in this course and who may need disability-related classroom accommodations are encouraged to see me privately as early as possible in the term. Students requiring disability-related accommodations should register with the Student Accessibility
Service office. Once SAS has authorized accommodations, students should show the originally signed SAS Accommodations/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. If you have any questions, please do not hesitate to ask.

**Academic Honor Principle**

You are expected to familiarize yourself with and uphold all aspects of the Academic Honor Principle. See the ORC Bulletin or [http://www.dartmouth.edu/~uja/honor](http://www.dartmouth.edu/~uja/honor) for the official statement. You may not receive or provide assistance on any quiz or exam. All work must be your own 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 Honor Principle seriously and expect you to do the same.

**Religious Observances**

Some students may wish to take part in religious observances that occur during this academic term. If 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.
Detailed Class Schedule of Topics and Readings

Note: Readings are to be completed by the indicated date. The schedule is subject to change.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
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<tbody>
<tr>
<td>Tu Sep 17</td>
<td>Welcome, Overview, and Introduction</td>
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**FOUNDATIONS OF MIND, BRAIN, & EDUCATION (MBE)**

**Tu Oct 1** Educators on the Brain and Neuroscientists on Education


**DUE: BRIEF ASSIGNMENT #1**

**Th Oct 3** Research-Practice Gap and Neuromyths


**MULTIDISCIPLINARY APPROACH**

**CLASSROOM COGNITION**

**Tu Oct 8** Memory


**Th Oct 10** MIDTERM #1
Tu Oct 15  | **Motivation**  


W Oct 16  | **Higher Level Thinking and Learning: Strategy and Problem Solving**


DUE: BRIEF ASSIGNMENT #3 (GROUP A ONLY)

Th Oct 17  | NO CLASS: Prof Tine at Research Conference in Memphis, TN

**CLASSROOM INSTRUCTION**

Tu Oct 22  | **Differentiated Learners/Learning Styles**


Th Oct 24  | **Types and Effectiveness of Different Teaching Methods**


**DUE: BRIEF ASSIGNMENT #2**

**CLASSROOM CONTENT**

**Tu Oct 29**  
**Math**  


**Th Oct 31**  
**Science**  


Klahr, D. & Li, J. (2005). Cognitive research and elementary science instruction from the laboratory, to the classroom, and back. *Journal of Science Education and Technology, 41*(2), 217-238. (LR)

**Tu Nov 5**  
**MIDTERM #2**

**Th Nov 7**  
**Reading**  


**CLASSROOM EXPERIENCE: EMOTIONAL AND SOCIAL PROCESSES**

**Tu Nov 12**  
Emotional Processes in Learning  


**DUE: BRIEF ASSIGNMENT #3 (GROUP B ONLY)**

**Th Nov 14**  
Social Processes in Learning  


**CONCLUSIONS**

**REFLECTIONS & MOVING THE FIELD FORWARD**

**Tu Nov 19**  


**M Nov 25**  
FINAL EXAM at 3:00 p.m.


Klahr, D. & Li, J. (2005). Cognitive research and elementary science instruction from the
laboratory, to the classroom, and back. *Journal of Science Education and Technology, 41*(2), 217-238.


