EDUCATION 01
THE LEARNING BRAIN:
INTRODUCTION TO CHILD DEVELOPMENT AND EDUCATION
SPRING 2016

General Information
Professor: Michele Tine
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Phone: 603-646-9043
Office: Raven House 211
Office Hours: Tuesday 12:15 p.m. - 3:15 p.m. and by appointment

Class Time: (10A) Tu, Th 10:00 a.m.-11:50 a.m.
X-hour: W 3:00-3:50 p.m.
Class Meeting Location: Filene in Moore Hall

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 Canvas site in two places. To access the readings that are followed by the notation ‘(LR)’ on the syllabus, click the ‘Library Reserves/Guides’ link on the Canvas main menu. To access the readings that are followed by the notation ‘(CA)’, click the actual ‘(CA)’ icon listed after the reading citation on the Daily Schedule on the course Canvas site. (CA stands for Course Articles, in case you’re curious.)
Description of Course Requirements

1. Class Participation and Attendance
Participation is an important component of this course and will be based on class attendance and 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. Participation in a Research Study
The goal of this assignment is to provide you with an insightful perspective on research studies. Please complete one of the following options by **Thur May 26.**

*Option #1: Volunteer to participate in a research study in the Education Department*
Volunteer to participate in a research study conducted by any research lab in the Education Department. Specific instructions on how to sign up for research studies are posted on Canvas. To get credit, you must hand in a signed EDUC01 Participant Confirmation Form to me in class anytime before **Thur May 26.** A copy of the form is posted on Canvas.

*Option #2: Write a hypothetical study experience overview*
If you are unable to participate or uninterested in participating in a research study, you may write a hypothetical study experience overview. First, locate an empirical article that has college student participants. Second, in approximately one page, write a bulleted list that summarizes what you would experience if you were a participant in the study. Third, in approximately five sentences, explain one experiential aspect of the study that you think the researchers could improve upon without sacrificing the scientific integrity of the study. Hand in your overview to me in class anytime before **Thur May 26.** Attach a copy of the first page of the empirical article, including the abstract.

3. Brief Assignments
There will be three brief assignments due throughout the term. They are due at the start of class.

**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 Canvas. **Due Tue April 12.**

**Brief Assignment #2:**
*Neuroscience and Education in the News.*
This assignment is designed with two primary goals: to critically evaluate scientific and education reports in the media and to explore the connections between brain and education research. The assignment has 3 parts. 1) Find and summarize a news article reporting on a brain or an education finding. 2) Find the original scientific article and then assess the accuracy of the claims made in the news article. 3) Discuss the links between brain research and education. Detailed instructions are on Canvas. Your paper should be 1.5 pages double-spaced, so make sure every word counts. **Due Thus May 5.**
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.

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 Canvas. Please note: I will pull a handful of your questions and include them on the final exam. Due Tues May 24.

4. Midterm Exams
There will be two midterm exams given in class. The first will be on Thur April 21. The first midterm will include content covered up to and including the class period before the exam. The second midterm will be on Tues May 17 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.

5. Final Exam
There will be a final exam on FRIDAY, June 3 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.

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<thead>
<tr>
<th>Course Requirements and Grading</th>
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<tbody>
<tr>
<td>Participation and Attendance: 4%</td>
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<tr>
<td>Participation in a Research Study: 2%</td>
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<tr>
<td>Brief Assignment #1: 6%</td>
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<td>Brief Assignment #2: 6%</td>
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<tr>
<td>Brief Assignment #3: 6%</td>
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<tr>
<td>Midterm #1: 22%</td>
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<td>Midterm #2: 22%</td>
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<td>Final: 32%</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 percent will be deducted from the grade of any assignment turned in one day late and an additional five percent 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 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.

#### FOUNDATIONS

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tr>
<td>Tu March 29</td>
<td>Welcome, Overview, and Introduction</td>
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#### FOUNDATIONS OF EDUCATION

**Th March 31**  
Overview of US Educational System: School Structure  


**Tu April 5**  
Education Policy: Efforts  


**Th April 7**  
Education Policy: Effectiveness  


FOUNDATIONS OF NEUROSCIENCE
Tu April 12  Brain Development


DUE: BRIEF ASSIGNMENT #1

FOUNDATIONS OF MIND, BRAIN, & EDUCATION (MBE)
Th April 14  Neuromyths and Research-Practice Gap


CLASSROOM COGNITION
Tu April 19  Memory


Th April 21  MIDTERM #1

MULTIDISCIPLINARY APPROACH
Tu April 26  
**Motivation**


W April 27  
**Higher Level Thinking and Learning: Strategy and Problem Solving**


Th April 28  
**NO CLASS TODAY. PROFESSOR TINE AT RESEARCH CONFERENCE.**

**CLASSROOM INSTRUCTION**

Tu May 3  
**Differentiated Learners/Learning Styles**


Th May 5  
**Effectiveness of Different Teaching Methods**


**DUE: BRIEF ASSIGNMENT #2**

**CLASSROOM CONTENT**

**Tu May 10**

**Math**


**Th May 12**

**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 May 17**

**MIDTERM #2**

**Th May 19**

**Reading**


**CLASSROOM EXPERIENCE: EMOTIONAL AND SOCIAL PROCESSES**

**Tu May 24**  
**Emotional Processes in Learning**  


**DUE: BRIEF ASSIGNMENT #3**

**W May 25**  
**Social Processes in Learning**


**Th May 26**  
**Reflections and Moving the Field Forward**


**DUE: PARTICIPATION IN A RESEARCH STUDY OPTION #1 OR #2**

**Tu May 31**  
**NO CLASS TODAY. PROFESSOR TINE AT RESEARCH CONFERENCE.**

**F June 3**  
**FINAL EXAM at 3:00 p.m.**
References


