### General Information

<table>
<thead>
<tr>
<th>Professor: Michele Tine</th>
<th>Class Time: (10A) Tu, Th 10:10 a.m.-12:00 p.m.</th>
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</thead>
<tbody>
<tr>
<td>Email: <a href="mailto:michele.tine@dartmouth.edu">michele.tine@dartmouth.edu</a></td>
<td>X-hour: W 3:30-4:20 p.m.</td>
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<tr>
<td>Phone: 603-646-9043</td>
<td>Location: Life Sciences Center 100</td>
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<tr>
<td>Office: Raven House 211</td>
<td>Office Hours: Tuesday 12:30 p.m. - 2:30 p.m. and by appointment</td>
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### 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

- To not only become familiar with, but also begin to develop a deeper understanding of, a wide range of concepts related to learning, development, and teaching.

- To begin to apply interdisciplinary, empirical evidence to construct and use your own model of learning, development, and teaching.

### 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 Readings’ link on the Canvas page. 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.

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 completed EDUC01 Participant Confirmation Form to me in class anytime before the due date. 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 the due date. 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.

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 neuroscience and education research. The assignment has 3 parts. 1) Find and summarize a news article reporting on a neuroscience 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 neuroscience research and education. Detailed instructions are on Canvas. Your paper should be 1.5 pages double-spaced, so make sure every word counts.
Brief Assignment #3:

Constructing Valid Assessment Answers

Student assessment is a hot topic in the field of 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.

4. Midterm Exams

There will be two midterm exams given in class. The first midterm will include content covered up to and including the class period before the exam. The second midterm 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 also be a final exam and it will be cumulative. The final exam 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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<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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<td>Brief Assignment #3: 6%</td>
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<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 who may need disability-related academic adjustments and services for this course are encouraged to see me privately as early in the term as possible. Students requiring disability-related academic adjustments and services must consult the Student Accessibility Services office (205 Collis Student Center, 646-9900, Student.Accessibility.Services@Dartmouth.edu). Once SAS has authorized services, 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 you have questions about whether you qualify to receive academic adjustments and services, you should contact the SAS office. All inquiries and discussions will remain confidential.

Academic Honor Principle

I take the Academic Honor Principle seriously and expect you to do the same. You are expected to familiarize yourself with and uphold all aspects of the Academic Honor Principle. You can find it stated at http://www.dartmouth.edu/judicialaffairs/honor/index.html. 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.

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
Tu March 28 Welcome, Overview, and Introduction

FOUNDATIONS OF EDUCATION
Th March 30 Overview of US Educational System: School Structure
US Department of Education (2008). *USA education in brief* (pp. 1-28*).


Tu April 4 Education Policy: Efforts
Miller, T. & Hanna, R. (2014). Four years later, are race to the top states on track? *Center for American Progress, 1-12.* Retrieved from https://www.americanprogress.org/issues/education/report/2014/03/24/86197/four-years-later-are-race-to-the-top-states-on-track/


Th April 6 Education Policy: Effectiveness


FOUNDATIONS OF NEUROSCIENCE
Tu April 11  Brain Development


DUE: BRIEF ASSIGNMENT #1

FOUNDATIONS OF MIND, BRAIN, & EDUCATION (MBE)
Th April 13  Neuromyths and Research-Practice Gap


MULTIDISCIPLINARY APPROACH

CLASSROOM COGNITION
Tu April 18  Memory


Th April 20  NO CLASS TODAY. PROFESSOR TINE AT RESEARCH CONFERENCE.

Tu Apr 25  MIDTERM #1

W April 26  Higher Level Thinking and Learning: Strategy and Problem Solving


Th April 27  Motivation


CLASSROOM INSTRUCTION

Tu May 2  Differentiated Learners/Learning Styles


**Th May 4**  
**Effectiveness of Different Teaching Methods**  


**DUE: BRIEF ASSIGNMENT #2**

**CLASSROOM CONTENT**  
**Tu May 9**  
**Math**  


**Th May 11**  
**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 16**  
**MIDTERM #2**
Th May 18  Reading


**CLASSROOM EXPERIENCE: EMOTATIONAL AND SOCIAL PROCESSES**

Tu May 22  Emotional Processes in Learning


**DUE: BRIEF ASSIGNMENT #3**

Th May 25  Social Processes in Learning


Tu May 30  Reflections and Moving the Field Forward


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

M June 2  FINAL EXAM at 3:00 p.m.
References


Pekrun, R., Goetz, T., Titiz, W., & Perry, R. (2002). Academic emotions in students' self-
regulated learning and achievement; a program of qualitative and quantitative research. *Educational Psychologist, 37*(2), 91-105.


