

DARTMOUTH COLLEGE
EDUCATION 01

Introduction to Education: Learning, Development, and Teaching

Spring Term 2023
Period 10A
Tuesdays & Thursdays, 10:10 AM to 12:00 PM
X-hour: Fridays, 3:30 to 4:20 PM
Dartmouth Hall, room 005
<https://canvas.dartmouth.edu>

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Office hours on your schedule;
e-mail to set appointment

Education must, then, be not only a transmission of culture but also a provider of alternative views of the world and a strengthener of the will to explore them.
Jerome Bruner, 1961, p. 59

"Do you mean ter tell me," he growled at the Dursleys, "that this boy – this boy! – knows nothin' 'abou' – about ANYTHING?" Harry thought this was going a bit far. He had been to school, after all, and his marks weren't bad. "I know some things," he said. "I can, you know, do math and stuff."
J.K. Rowling, 1997, p. 49

Course Description

Education, development, and learning are inextricably intertwined. In this course, we will explore how pre-Kindergarten through high school education is informed by scientific evidence across multiple domains. Topics to be explored may include the educational system in America; the research-to-practice gap and educational misconceptions; social, emotional, and motivational development in school context; memory, strategies, metacognition, and assessment as related to learning; and learning and teaching in early math, science, and reading.

Course Objectives

- 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.

Course Expectations

- This course is designed to support you in developing understanding of key concepts in the field of education related to learning, development, and teaching.
- **My expectations for me, as a teacher:**
 - to share knowledge with you in an organized, principled, evidence-based, accessible, and clear way
 - to support you in your learning, helping you to understand new information and make connections between old and new information as you build your knowledge base
 - to encourage you to be an engaged and active learner in all aspects of the course, and
 - to be available to you: I deeply value interactions with students and believe that such interactions are a foundation for learning (both yours and mine).
- **My expectations for you, as a learner:**
 - that you successfully build a useable, meaningful knowledge base about education
 - that you become more comfortable talking about educational issues in an informed, evidence-based way
 - that you interact with me and your classmates in order to support your learning
 - that you are an engaged and active learner, attending class and contributing meaningfully to our shared conversation as a community of learners in this course
 - that you ask questions both when you don't understand something and when you are just curious to learn more.
- **My expectations for us, as a learning community:**
 - that we support each other as we learn together
 - that our interactions are respectful and civil
 - that we will both choose our language carefully and acknowledge when we have made poor choices
 - that we will give and receive feedback that is thoughtful and conducive to learning
 - that we will recognize that realizing bias can be difficult but is part of the learning process, and
 - that, together, we create a safe, evidence-based learning environment that supports a diversity of thoughts, perspectives, and experiences and honors our intersectional identities.

Assignments

1. Activities: Groupwork

On most days, class time will be split between a lecture and an Activity. One goal of the Activities is to provide an opportunity to discuss and engage with key concepts and small datasets in depth. Another goal of the Activities is to provide an opportunity to practice some of the skills involved in collaborative learning, small-group discussion and problem solving, and working toward a defined common goal. Along with lecture, Activities will provide a foundation on which to begin to construct your own, evidence-based model of learning, development, and teaching.

- Activities will be conducted in small groups, to which you will be assigned pseudorandomly at the beginning of the term; you will remain in the same group throughout the term.
- Activities will be assigned to each group during class.
- Each group will submit its Activity response through a Canvas Assignment for grading. Activities are to be completed and submitted by five minutes before the end of the class period.
- Each member of a group will receive the same grade for each Activity. However, if there is agreement among the majority of a group that a member or members did not contribute meaningfully to the activity and response (or it is my judgment that such is the case), that member may receive a different grade. In general, by choosing not to participate, you affect your own learning; but for group projects, you also compromise others' learning, as your groupmates are robbed of the opportunity to benefit from your insight and perspective in the same way that you have from theirs.
- The goal of the Activities is to have meaningful discussions and engage with the materials as a collaborative group; responding to the specific questions on the Activity sheets simply provides a framework and structure for such discussions (i.e., the quality of the discussion is as important as the answers on the sheet).
- Activities are designed for collaborative, focused work within a limited time (about 35-40 minutes); they require the engagement and participation of all group members.

2. Brief Reflections

As described, the goals of this course are for you to (1) develop a deeper understanding of learning, development, and teaching and (2) begin to apply that knowledge. The Brief Reflections are designed to support these goals directly. You might think of them as a type of reading quiz – *not* to summarize the assigned readings, but to *use* the information in some way in connection to your life.

- These six assignments are due after the first day of class and all six must be submitted by the beginning of class on 25 May. You may choose which readings you want to use for Brief Reflections.
- *Only one Brief Reflection may be submitted per week, so plan ahead.*
- Each Brief Reflection should be submitted after you complete the readings and before lecture. This is because your reflections are about *your* response to the readings (not what is discussed about the readings during lecture).
- Brief Reflections are limited to 250 words each; choose your words carefully and write clearly and well.
- Please use APA style for both your in-text citations and your reference list (the reference list is not included in your word count).
- Brief Reflections will be submitted through the Assignments menu item in Canvas.
- There are two kinds of Brief Reflections and you will be handing in three of each throughout the term:

- Aha Moments

As you begin to become familiar with the key concepts in this course, you will invariably experience aha moments—moments of sudden insight or discovery in which something seems to fall into place, something that has not made sense previously does begin to make sense, you recognize something about yourself that you have not thought about before or are now thinking about differently, or you realize that your beliefs are incompatible with the evidence. Note that this is not just about learning something new, but rather learning something new that really changes your thinking in some way. When you experience an aha moment related to an assigned reading, write a Brief Reflection that describes how and why your thinking has changed. Please include a word count (< 250) for each of your three Aha Moment Brief Reflections.

- Using What You Know

Much of what we discuss in this course is applicable in everyday life and connects to your lives as students and learners. When you find yourself thinking concretely about how what you have learned from an assigned reading will be useful in the future, write a Brief Reflection that describes how and why you are applying or will apply your new knowledge. Please include a word count (< 250) for each of your three Using What You Know Brief Reflections.

- In essence, the difference between the two kinds of Brief Reflections is that an Aha Moment helps you to make sense of something in the past whereas a Using What You Know helps you to make sense of something in the future.

3. Education in the News Reports

Almost every day, there are news reports about some aspect of American preK-12 education, child development, or student learning. For each of your three Education in the News Reports, choose a story reported in a reputable news outlet, provide a brief but critical summary of the story in your own words (e.g., if it is a report about published research, has it represented that research accurately?), and make one evidence-based, well-reasoned connection to what we know from class.

- These three assignments are due after the first day of class and all three must be submitted by the beginning of class on 25 May.
- Only one Education in the News Report may be submitted per week, so plan ahead.
- Unlike Aha Moments or Using What You Know, Education in the News Reports can relate to anything that we have learned in class at any time—they do not have to be related to information from the class on the day you submit them.
- Reports are limited to 250 words each; choose your words carefully and write clearly and well. Focus less on summary and more on critical analysis and connection.
- Please use APA style for both your in-text citations and your reference list (the reference list is not included in your word count).
- Please also provide a direct link to the news report (also not included in your word count).

- Reports will be submitted through the Assignments menu item in Canvas.

Assignments: Late Policy

- There are no late submissions for groupwork. If you must miss a class and cannot participate with your group remotely, there is a one-time option to complete an alternate 2.5-point assignment as a replacement (this cannot be used for “extra credit” or to “make up” other missed points). Please contact me regarding this alternate assignment as soon as you know that you will not be able to participate in a groupwork session.
- There are no late submissions for Brief Reflections and Education in the News Reports because they are due throughout the term flexibly, on your own schedule (with no more than one of each kind per week). The only deadline is that all six Reflections and three Reports must be submitted by the beginning of class on 25 May; there is no flexibility in this deadline.

Required Reading

- All readings will be available through Canvas.
- Links to the daily assigned readings (as listed in the syllabus in the *Schedule* and *Reading List by Module/Class*) will be provided within each class day Module on Canvas.
- All readings listed in the syllabus and linked on the Canvas site are required reading for the course.
- You are expected to complete the assigned readings before class and you should be prepared to discuss the readings in class.
- I have chosen the readings carefully and I expect you to spend time reading and thinking about them. Building a knowledge base is foundational to understanding (see Course Objectives); the assigned readings will help you to begin to construct such a knowledge base concerning learning, development, and teaching—to which we will add in class through lectures and activities.

Lectures

As noted above, on most days, class time will be split between lecture and activity. I will post the PowerPoint slides that I use for each lecture to the Canvas site for the course *after each unit*. I understand that access to the slides supports your learning. I also understand that having the slides during lecture can encourage attention to wander and decrease active engagement. Given that you will have access to the slides, do not expect to have time to copy every word during class (we will learn about why this is a poor strategy for learning).

Exams

- There will be three in-class exams throughout the term and one final exam during final exam period.
- Each exam will cover all material (e.g., assigned readings, lectures and discussions, Activities) up to and including the class before the exam is given; each is cumulative.
- Exams may include multiple choice, fill-in-the-blank, very short answer (1-2 sentences), and short essay (5-6 sentences) questions.

- Multiple choice and fill-in-the-blank questions will require you to recall information (e.g., vocabulary) flexibly.
 - Very short answer questions will ask you to respond in one or two sentences or phrases, requiring you to select and focus your answers rather than tell me everything that you remember.
 - Short essay questions will require you to use, integrate, and apply information.
 - For all types of questions, our goal is understanding rather than rote memorization.
- All exams are “closed-book” (no use of outside resources); they are designed to assess your understanding, not your ability to find material. To be clear: You may use no resources other than your own brain during the exams. No notes, no PowerPoint slides, no readings, no assignments, no internet, no classmates, etc.
 - There are no “make-up” exams. If there are extenuating circumstances (e.g., illness), please contact me as far in advance as possible.

Canvas (<https://canvas.dartmouth.edu>)

Class resources can be found on the Canvas site for the course, including a copy of the syllabus and course reading links in topic Modules. You will post your Activity responses to Assignments on Canvas and submit other assignments through the Assignments function.

Attendance

In-person class attendance is expected; however, I understand that there may be times when you need to miss class due to illness, family emergencies, or other circumstances. *Please do not attend class if you are ill or are supposed to be in isolation.* Please let me know as early as possible that you will not be able to attend class so that we can try to make arrangements. As usual, you will have access to lecture slides on Canvas after each unit. Further, I encourage you to reach out to classmates for copies of their notes for the class that you missed. We can also discuss other adjustments as appropriate to your specific circumstances.

Into the Future

There are many opportunities to work with elementary and secondary school students—to use what you have learned in this course—while you are at Dartmouth. You can find a list on the Education Minor website: <https://educ.dartmouth.edu/undergraduate/careers> (bottom of page).

Course Grade

- Course grades are based on:
 - Attendance and participation, recognizing that participation can take many forms (7.5%)
 - Groupwork Activities (11 at 2.5% each, lowest dropped = 25%)
 - Individual Written Assignments (18%)
 - Brief Reflections (12%)
 - Aha Moments (3 at 2% each = 6%)
 - Using What You Know (3 at 2% each = 6%)

- Education in the News Reports (3 at 2% each = 6%)
- Exams (49.5%)
 - Exam One (11%)
 - Exam Two (11.5%)
 - Exam Three (12%)
 - Final Exam (12.5%)
 - Content Review for Final Exam (2.5%)
- Grading is consistent with the ORC description of scholarship ratings (see http://www.dartmouth.edu/~reg/transcript/grade_descriptions.html).

Responsibilities

- **Academic Honor Principle: working with integrity**
 - All students are expected to uphold all aspects of the Academic Honor Principle (refer to <https://students.dartmouth.edu/community-standards/policy/academic-honor-principle>).
 - Please make sure that you are familiar with the Honor Principle and make sure to ask questions if you are uncertain about how it applies in this course. For example, that all work should be your own (or that of your group), proper APA citations should be used for sources in writing assignments, and all exams are closed-book. Your work being your own means that you may not use AI to create or develop your assignments.
 - Any violation of the Academic Honor Principle regarding your work in this course will result in a zero on the assignment and I am obligated to refer the matter to the Office of Community Standards & Accountability.
- **Community Standards of Conduct: responsibility and respect**

All students are expected to accept individual responsibility for their actions and to respect the rights of others, and to uphold all aspects of our community standards of conduct (refer to <https://students.dartmouth.edu/community-standards/>).
- **Rules for recording**
 - Consent to recording of course meetings that are open to multiple students. By enrolling in this course, I affirm the following:
 - I affirm my understanding that the instructor may record meetings of this course and any associated meetings open to multiple students and the instructor, including but not limited to scheduled and ad hoc office hours and other consultations, within any digital platform, including those used to offer remote instruction for this course;
 - I further affirm that the instructor owns the copyright to their instructional materials, of which these recordings constitute a part, and my distribution of any of these recordings in whole or in part (or any other instructional materials for this course) to any person or entity other than other members of the class without prior written consent of the instructor may be subject to discipline by Dartmouth up to and including separation from Dartmouth.
 - Requirement of consent to one-on-one recording

- By enrolling in this course, I hereby affirm that I will not make a recording in any medium of any one-on-one meeting with the instructor or another member of the class or group of members of the class without obtaining the prior written consent of all those participating, and I understand that if I violate this prohibition, I will be subject to discipline by Dartmouth up to and including separation from Dartmouth, as well as any other civil or criminal penalties under applicable law. I understand that an exception to this consent applies to accommodations approved by SAS for a student's disability, and that one or more students in a class may record class lectures, discussions, lab sessions, and review sessions and take pictures of essential information, and/or be provided class notes for personal study use only.
- **Religious observances**

I recognize that 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 this course, it is your responsibility to please meet with me as soon as possible (before the end of the second week of the term) so that we can discuss appropriate accommodations.

Resources

– **Office hours**

Office hours are on your schedule, not mine. Rather than holding set office hours, which will invariably conflict with your schedules, please talk with me and/or e-mail me (donna.coch@dartmouth.edu) to find a time that works for you for us to talk. Please feel free to schedule to talk with me whether you have specific questions or not.

– **Disability-related accommodations and services**

If you are requesting disability-related accommodations and services for this course, please first register with Student Accessibility Services (SAS; [Apply for Services webpage](#); student.accessibility.services@dartmouth.edu; 1.603.646.9900). Once registered with SAS, please request that an accommodation e-mail be sent to me through A11y (in advance of the need for an accommodation) and schedule a meeting with me so that we can discuss what supports to build into our course; for example, we can determine relevant details such as what role SAS or its [Testing Center](#) may play in accommodation implementation. This process works best for everyone when completed as early in the term as possible. If you have questions about whether you are eligible for accommodations or have concerns about the implementation of accommodations, please contact the SAS office. All inquiries and discussions will remain confidential.

– **Academic skills and efficient/effective learning support**

If you feel that your learning is not as efficient or effective as you would like it to be, please talk with me about approaches to this course and consider using the resources available through the Academic Skills Center (<https://students.dartmouth.edu/academic-skills/about/about-asc/services>), including tutoring and learning skills trainings.

– **Wellness**

I recognize that the academic environment at Dartmouth is challenging, that our terms are intensive, and that classes are not the only demanding part of your life. There are a number of resources available to you to support your wellness, including:

- your undergraduate dean (<https://students.dartmouth.edu/undergraduate-deans/>),
- the Counseling Center (<https://students.dartmouth.edu/health-service/counseling/about>),
- the Uwill teletherapy service (<https://students.dartmouth.edu/health-service/counseling/appointments-services/uwill-teletherapy-services-students>),
- pastoral support, counseling, and spiritual care (<https://students.dartmouth.edu/tucker/about/pastoral-counseling>), and
- the Student Wellness Center (<https://students.dartmouth.edu/wellness-center/>).

I encourage you to use these resources to take care of yourself throughout the term and to feel free to speak with me if you are experiencing difficulties. I have participated in the Campus Connect training. Please do take advantage of these resources and reach out to speak with me or someone else if you are struggling; you are not alone.

– **Sexual safety**

If you do not feel sexually safe, the Title IX Office at Dartmouth (<https://sexual-respect.dartmouth.edu>) provides information about your rights with regard to sexual safety and resources that are available to you. Some of those [resources are summarized here](#). Please note that, as a faculty member, I am obligated to share disclosures regarding conduct under Title IX with Dartmouth's Title IX Coordinator. Confidential resources are also available, including licensed medical or counseling professionals, staff members of organizations recognized as rape crisis centers under state law (e.g., [WISE](#)), or ordained clergy. Please do reach out to speak with someone if you do not feel safe.

SCHEDULE §

DATE	TOPIC / [MODULE]†	WHAT TO READ†	WHAT'S DUE°
<i>Week One</i>			
T 28 March	Introduction [1, 2.1]	Syllabus, Diamond	
R 30 March	Overview of US Educ [2.2]	USDoS, Halpert, Mervis, Mervis	
<i>Week Two</i>			
T 04 April	Overview of US Educ [2.3]	CSH, McGuinn, NASSP, Kuhfeld	Activity #1
R 06 April	Evidence-based Educ [3]	Alberts, CfC, Slavin, Boser, Jarrett, Matthews, Chatterjee	
<i>Week Three</i>			
T 11 April	Teachers & Teaching [4]	Finley, Ellison, Hamre, Tomlinson, Darling-Hammond (2), Wall	Activity #2
R 13 April	Midterm Exam One [5]	[no readings]	
<i>Week Four</i>			
T 18 April	Social Processes [6]	Blakemore, Stahl, APA, Weissberg, CASEL	Activity #3
R 20 April	Emotional Processes [7]	Mischel, Duckworth, Lipsett, Blair, Walker	Activity #4
F 21 April	Midterm One returned [8]		
<i>Week Five</i>			
T 25 April	Motivation [9]	Dweck, CEP, Mathewson, Hulleman, Engel	Activity #5
R 27 April	Midterm Exam Two [10]	[no readings]	
<i>Week Six</i>			
T 02 May	Memory [11]	Miller, Orlin, Thorne, Harvard, Paul	Activity #6
R 04 May	Metacognition [12]	TEAL, Pintrich, Fadel, Resnick	Activity #7
F 05 May	Midterm Two returned [13]	[no readings]	
<i>Week Seven</i>			
T 09 May	Strategies [14]	Rohrer, Karpicke, Pan, Terada, May, Buckhalt, Bangsbo	
R 11 May	Assessment [15]	Ronan, AERA, Strauss, Jochim, Darling-Hammond, Weimer, Frey	Activity #8
<i>Week Eight</i>			
T 16 May	Midterm Exam Three [16]	[no readings]	
R 18 May	Science [17]	AERA, Colburn, Nature, Klahr, Sadler, Schneps, NAP	Activity #9
F 19 May	Midterm Three returned [18]	[no readings]	
<i>Week Nine</i>			
T 23 May	Math [19]	Griffin, Devlin, Willingham, Kimball	Activity #10
R 25 May	Reading [20]	Hindman, Koralek, Shanahan, Stainthorp, Hanford	Activity #11*
<i>Week Ten</i>			
T 30 May	Summary & Reflection [21]	Alberts, Stipek, APA/CPSE, Jones, Wong, Fisher	
<i>Final Exam</i>			
Sun 04 June 11:30 AM	Final Exam [22]	[no readings]	

§subject to change

†see detailed list below

*all Brief Reflections, Education in the News Reports by 25 May

READING LIST BY CLASS

The assigned readings listed below should be completed before each class; lectures and Activities assume that you have completed the readings. Clicking on the doi or url provided should directly link to each reading. If a hyperlink brings you to a page filled with nonsense symbols, try clicking on the address in your browser window to highlight it, then pressing the return key. You may need to copy-and-paste some links directly into your browser. If a hyperlink fails, conduct a library or Google search to find the assigned reading.

Week One

Tuesday, 28 March – Module 1: Introduction to the Course

An overview of the course, a preview of some of our topics and themes, and an opportunity to begin thinking about the complexity of learning, development, and education. Please familiarize yourself with the syllabus and the Canvas site for the course; many of your likely questions about the course will be addressed by information included in these resources.

- Syllabus
- Diamond, A. (2007). Interrelated and interdependent. *Developmental Science*, 10(1), 152-158. <https://doi.org/10.1111/j.1467-7687.2007.00578.x>

Thursday, 30 March – Module 2: Overview of the US Education System (Part 2)

An introduction to the school system in America: students, structure, types of schools, and an international comparison; how schools are run: decentralization and local, state, and federal roles; low-income students in US schools: the income-achievement gap and early intervention; and Federal programs: ESEA, NCLB, R2T, ESEA Flexibility waivers, and ESSA.

- U.S. Department of State. (2008). *USA education in brief*.
<http://photos.state.gov/libraries/shanghai/135040/wangrh/education-in-brief-spread-082708.pdf>
- Halpert, J. (2018, March 4). What if America didn't have public schools? *Atlantic Online*.
<https://advance-lexis-com.dartmouth.idm.oclc.org/api/permalink/bb5dfa6c-2d6f-430c-ba5e-5eb9e6ac0046/?context=1516831>
- Mervis, J. (2011a). Past successes shape effort to expand early intervention. *Science*, 333(6045), 952-956. <https://doi.org/10.1126/science.333.6045.952>
- Mervis, J. (2011b). Giving children a head start is possible – but it's not easy. *Science*, 333(6045), 956-957. <https://doi.org/10.1126/science.333.6045.956>

Week Two

Tuesday, 04 April – Module 2: Overview of the US Education System (Part 3)

Continuation of our introduction to the school system in America: students, structure, types of schools, and an international comparison; how schools are run: decentralization and local, state, and federal roles; low-income students in US schools: the income-achievement gap and early intervention; and Federal programs: ESEA, NCLB, R2T, ESEA Flexibility waivers, and ESSA.

Activity #1: NAEP

- Council on School Health. (2013). The crucial role of recess in school. *Pediatrics*, 131(1), 183-188. <https://doi.org/10.1542/peds.2012-2993>
- McGuinn, P. (2016). From No Child Left Behind to the Every Student Succeeds Act: federalism and the education legacy of the Obama administration. *Publius: The Journal of Federalism*, 46(3), 392-415. <https://doi.org/10.1093/publius/pjw014> [NB: read for the main ideas and a sense of the historical arc]
- National Association of Secondary School Principals. (2016). *Every Student Succeeds Act (ESSA) overview*. [https://www.nassp.org/advocacy/essa-toolkit/essa-facts-sheets/every-student-succeeds-act\(essa\)-overview?SSO=true](https://www.nassp.org/advocacy/essa-toolkit/essa-facts-sheets/every-student-succeeds-act(essa)-overview?SSO=true)
- Kuhfeld, M., Soland, J., Lewis, K., & Morton, E. (2022, March 3). The pandemic has had devastating impacts on learning. What will it take to help students catch up? *Brookings, Brown Center Chalkboard*. <https://www.brookings.edu/blog/brown-center-chalkboard/2022/03/03/the-pandemic-has-had-devastating-impacts-on-learning-what-will-it-take-to-help-students-catch-up/>

Thursday, 06 April – Module 3: Evidence-based Education

We will discuss the nature of evidence in education; scientific experiments and how we might know “what works”; the research-to-practice gap; and misconceptions about learning, development, and education.

- Alberts, B. (2009). Making a science of education. *Science*, 323(5910), 15. <https://doi.org/10.1126/science.1169941>
- Chiefs for Change. (2016, July 7). *Policy brief: ESSA and evidence: why it matters* [Policy brief]. https://chiefsforchange.org/wp-content/uploads/2016/07/essa_evidence_matters.pdf
- Slavin, R. (2017, June 6). Research and practice: “tear down this wall.” *Huffington Post*. http://www.huffingtonpost.com/entry/research-and-practice-tear-down-this-wall_us_5940daffe4b04c03fa2616c6#
- Boser, U. (2017, March 4). *What do people know about excellent teaching and learning?* Center for American Progress. <https://cdn.americanprogress.org/content/uploads/2017/03/10122018/TeachingAndLearning-brief.pdf>
- Jarrett, C. (2017, July 20). *Oh dear, even people with neuroscience training believe an awful lot of brain myths*. The British Psychological Society. <https://www.bps.org.uk/research-digest/oh-dear-even-people-neuroscience-training-believe-awful-lot-brain-myths>

- Matthews, R. (2000). Storks deliver babies ($p = 0.008$). *Teaching Statistics*, 22(2), 36-38.
<https://doi.org/10.1111/1467-9639.00013>
- Chatterjee, R. (2015). Out of the darkness. *Science*, 350, 372-375.
<https://doi.org/10.1126/science.350.6259.372>

Week Three

Tuesday, 11 April – Module 4: Teachers and Teaching

Teachers play multiple roles and are responsible for both content and context. Today, we talk about PCK, design and delivery of curriculum, active and passive learning environments, the ZPD, transfer, academic language, classroom culture, and expectations; we also discuss certification.

Activity #2: Becoming a Public School Teacher: Alternative Routes

- Finley, T. (2014, January 2). *8 strategies for teaching academic language*. Edutopia.
<https://www.edutopia.org/blog/8-strategies-teaching-academic-language-todd-finley>
- Ellison, K. (2015, December). Being honest about the Pygmalion effect. *Discover Magazine*, 36(10), 44-49. <https://www.discovermagazine.com/mind/being-honest-about-the-pygmalion-effect>
- Hamre, B.K. (2014). Teachers' daily interactions with children: an essential ingredient in effective early childhood programs. *Child Development Perspectives*, 8(4), 223-230.
<https://doi.org/10.1111/cdep.12090>
- Tomlinson, C.A. (2012). Watching us work. *Educational Leadership*, 69(7), 92-93.
<http://search.ebscohost.com.dartmouth.idm.oclc.org/login.aspx?direct=true&AuthType=ip,url,uid&db=a9h&AN=75242237&site=ehost-live&scope=site>
- Darling-Hammond, L. (2000). How teacher education matters. *Journal of Teacher Education*, 51(3), 166-173. <https://doi.org/10.1177/0022487100051003002>
- Darling-Hammond, L., & Tucker, M. (2017, October). If you want a world-class education system, then empower our teachers. *The Hill*.
<http://thehill.com/opinion/education/355199-want-a-world-class-education-system-in-america-empower-our-teachers>
- Wall, C.R.G. (2016). From student to teacher: changes in preservice teacher educational beliefs throughout the learning-to-teach journey. *Teacher Development*, 20(3), 364-379.
<https://doi.org/10.1080/13664530.2016.1149509>

Thursday, 13 April: Module 5

- Midterm Exam One

Week Four

Tuesday, 18 April – Module 6: Social Processes in Learning and Teaching

Much learning occurs through social experience. We will discuss the development of theory of mind; the social context of learning in the classroom, including peer social status, stereotype threat, and collaborative or cooperative learning; and SEL approaches.

Activity #3: Evaluating SEL Curricula

- Blakemore, S.-J. (2010). The developing social brain: implications for education. *Neuron*, 65(6), 744-747. <https://doi.org/10.1016/j.neuron.2010.03.004>
- Stahl, R.J. (1994). *The essential elements of cooperative learning in the classroom* (ED370881, 1994-03-00). ERIC Digest. <http://files.eric.ed.gov/fulltext/ED370881.pdf>
- American Psychological Association. (2006, July 15). *Stereotype threat widens achievement gap*. <http://www.apa.org/research/action/stereotype.aspx>
- Weissberg, R., Durlak, J.A., Domitrovich, C.E., & Gullotta, T.P. (2016, February 15). *Why social and emotional learning is essential for students*. Edutopia. <https://www.edutopia.org/blog/why-sel-essential-for-students-weissberg-durlak-domitrovich-gullotta>
- CASEL. (2020, November). *CASEL's SEL framework: what are the core competence areas and where are they promoted?* <https://casel.s3.us-east-2.amazonaws.com/CASEL-SEL-Framework-11.2020.pdf>

Thursday, 20 April – Module 7: Emotional and Self-regulation Processes in Learning and Teaching

An introduction to emotions, including academic emotions; the development, measurement, and teaching of emotional self-regulation; and the emotional context of learning, focusing on stress and toxic stress.

Activity #4: Academic Emotions

- Mischel, W., Ayduk, O., Berman, M.G., Casey, B.J., Gotlib, I.H., Jonides, J., Kross, E., Teslovich, T., Wilson, N.L., Zayas, V., & Shoda, Y. (2011). 'Willpower' over the life span: decomposing self-regulation. *Social, Cognitive, and Affective Neuroscience*, 6(2), 252-256. <https://doi.org/10.1093/scan/nsq081>
- Duckworth, A.L., & Seligman, M.E.P. (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science*, 16(12), 939-944. <https://doi.org/10.1111/j.1467-9280.2005.01641.x>
- Lipsett, A-B. (2011). Supporting emotional regulation in elementary school: brain-based strategies and classroom interventions to promote self-regulation. *LEARNing Landscapes*, 5(1), 157-175. <https://www.learninglandscapes.ca/index.php/learnland/article/view/Supporting-Emotional-Regulation-in-Elementary-School-Brain-Based-Strategies-and-Classroom-Interventions-to-Promote-Self-Regulation/539>
- Blair, C. (2012). Treating a toxin to learning. *Scientific American Mind*, 23(4), 64-67. <https://doi.org/10.1038/scientificamericanmind0912-64>
- Walker, S.O., & King, M.S. (2016, 6 June). 'Toxic stress' in the classroom: how a public health approach could help. *Washington Post*.

https://www.washingtonpost.com/news/education/wp/2016/06/06/toxic-stress-in-the-classroom-how-a-public-health-approach-could-help/?utm_term=.c7e57965c9d7

Friday, 21 April – Module 8: Midterm Exam One returned

Week Five

Tuesday, 25 April – Module 9: Motivational Processes in Learning and Teaching

An introduction to intrinsic and extrinsic motivation; key constructs for supporting motivation; achievement motivation, mindsets, and goals; and curiosity.

Activity #5: Goal Setting

- Dweck, C.S. (2007/2008). The secret to raising smart kids. *Scientific American Mind*, 18(6), 36-43. <https://doi.org/10.1038/scientificamericanmind1207-36>
- Center on Education Policy. (2012). *Student motivation—an overlooked piece of school reform*. <http://files.eric.ed.gov/fulltext/ED532666.pdf>
- Mathewson, T.G. (2019). *How to unlock students' internal drive for learning*. The Hechinger Report. <https://hechingerreport.org/intrinsic-motivation-is-key-to-student-achievement-but-schools-kill-it/>
- Hulleman, C.S., & Harackiewicz, J.M. (2009). Promoting interest and performance in high school science classes. *Science*, 326(5958), 1410-1412. <https://doi.org/10.1126/science.1177067>
- Engel, S. (2013). The case for curiosity. *Educational Leadership*, 70(5), 36-40. http://search.ebscohost.com.dartmouth.idm.oclc.org/login.aspx?direct=true&AuthType=ip_url_uid&db=a9h&AN=85177949&site=ehost-live&scope=site

Thursday, 27 April: Module 10

- Midterm Exam Two

Week Six

Tuesday, 02 May – Module 11: Memory Processes in Learning and Teaching

Today, we discuss the components of a model of memory in educational context, including the sensory register, attention, short-term and working memory, and long-term memory; the role of sleep in memory; and multitasking.

Activity #6: Memory in the Classroom

- Miller, M.D. (2011). What college teachers should know about memory: a perspective from cognitive psychology. *College Teaching*, 59(3), 117-122. <https://doi.org/10.1080/87567555.2011.580636>

- Orlin, B. (2013, September 9). When memorization gets in the way of learning. *The Atlantic*. <https://www.theatlantic.com/education/archive/2013/09/when-memorization-gets-in-the-way-of-learning/279425/>
- Thorne, G. (2003, January 1). *What are some problems students have with memory?* Center for Development and Learning. <http://www.cdl.org/articles/what-are-some-problems-students-have-with-memory/>
- Harvard Medical School & WGBH. (2007). *Sleep, learning, and memory*. Healthy Sleep. <http://healthysleep.med.harvard.edu/healthy/matters/benefits-of-sleep/learning-memory>
- Paul, A.M. (2013, May 3). *You'll never learn!* Slate. http://www.slate.com/articles/health_and_science/science/2013/05/multitasking_while_studying_divided_attention_and_technological_gadgets.html

Thursday, 04 May – Module 12: Metacognition in Learning and Teaching

An introduction to metacognition and its components; examples of metacognitive development and illusion; metacognition and mindfulness; and teaching metacognitive strategies.

Activity #7: The MAI

- Teaching Excellence in Adult Literacy. (2010). *TEAL Center fact sheet no. 4: metacognitive processes*. https://lincs.ed.gov/sites/default/files/4_TEAL_Metacognitive.pdf
- Pintrich, P.R. (2002). The role of metacognitive knowledge in learning, teaching, and assessing. *Theory Into Practice*, 41(4), 219-225. https://doi.org/10.1207/s15430421tip4104_3
- Fadel, C., Trilling, B., & Bialik, M. (2016, August 10). *The role of metacognition in learning and achievement*. KQED MindShift. <https://www.kqed.org/mindshift/2016/08/10/the-role-of-metacognition-in-learning-and-achievement/>
- Resnick, B. (2017, October 19). *Is mindfulness meditation good for kids? Here's what the science actually says*. Vox. <https://www.vox.com/science-and-health/2017/5/22/13768406/mindfulness-meditation-good-for-kids-evidence>

Friday, 05 May – Module 13: Midterm Exam Two returned

Week Seven

Tuesday, 09 May – Module 14: Strategies for Strengthening Learning and Teaching

Consideration of some simple, specific things that students and teachers can do to improve learning and teaching, involving testing, spacing, interleaving, note-taking, sleep, physical activity, and feedback.

- Rohrer, D., & Pashler, H. (2010). Recent research on human learning challenges conventional instructional strategies. *Educational Researcher*, 39(5), 406-412.

- <https://doi.org/10.3102/0013189X10374770>
- Karpicke, J.D. (2016, June). *A powerful way to improve learning and memory*. American Psychological Association. <http://www.apa.org/science/about/psa/2016/06/learning-memory.aspx>
 - Pan, S.C. (2015, 4 August). *The interleaving effect: mixing it up boosts learning*. Scientific American. <https://www.scientificamerican.com/article/the-interleaving-effect-mixing-it-up-boosts-learning/>
 - Terada, Y. (2017). *Why students forget-and what you can do about it*. Edutopia. <https://www.edutopia.org/article/why-students-forget-and-what-you-can-do-about-it>
 - May, C. (2014, 3 June). *A learning secret: don't take notes with a laptop*. Scientific American. <https://www.scientificamerican.com/article/a-learning-secret-don-t-take-notes-with-a-laptop/>
 - Buckhalt, J. A. (2011). Insufficient sleep and the socioeconomic status achievement gap. *Child Development Perspectives*, 5(1), 59-65. <https://doi.org/10.1111/j.1750-8606.2010.00151.x>
 - Bangsbo, J., Krstrup, P., Duda, J., Hillman, C., Andersen, L.B., Weiss, M., Williams, C.A., Lintunen, T., Green, K., Hansen, P.R., Naylor, P.-J., Ericsson, I., Nielsen, G. Froberg, K., Bugge, A., Lundbye-Jensen, J., Schipperijn, J., Dagkas, S., Agergaard, S., ... Elbe, A.-M. (2016). The Copenhagen Consensus Conference 2016: children, youth, and physical activity in schools and during leisure time. *British Journal of Sports Medicine*, 50, 1177-1178. <https://doi.org/10.1136/bjsports-2016-096325>

Thursday, 11 May – Module 15: Assessing Learning and Teaching

A discussion about how assessment is used in education and policy: the purposes of assessment, high-stakes testing and cut scores under NCLB, testing and the CCSS, changes in assessment under ESSA, and formative assessments.

Activity #8: Creating Test Items

- Ronan, A. (2015, April). *Every teacher's guide to assessment*. Edudemic. <http://www.edudemic.com/summative-and-formative-assessments/>
- AERA Council. (2000, July). *Position statement on high-stakes testing in pre-K-12 education*. American Educational Research Association. http://www.aera.net/About-AERA/AERA-Rules-Policies/Association-Policies/Position-Statement-on-High-Stakes-Testing/mid/16176/dnnprintmode/true?SkinSrc=%5bG%5dSkins%2f_default%2fNo+Skin&ContainerSrc=%5bG%5dContainers%2f_default%2fNo+Container
- Strauss, V. (2014, August 29). State education board slams Obama administration's testing policies. *Washington Post*. https://www.washingtonpost.com/news/answer-sheet/wp/2014/08/29/state-education-board-slams-obama-administrations-testing-policies/?utm_term=.ee1a6a0b9299
- Jochim, A., & McGuinn, P. (2016, Fall). The politics of the Common Core assessments. *Education Next*, 16(4), 44-52. <https://www.educationnext.org/the-politics-of-common-core-assessments-parcc-smarter-balanced/>

- Darling-Hammond, L. (2014). *Beyond the bubble test: why we need performance assessments*. EdWeek.
http://blogs.edweek.org/edweek/education_futures/2014/07/beyond_the_bubble_test_why_we_need_performance_assessments.html?print=1
- Weimer, M. (2012). *Deep learning vs. surface learning: getting students to understand the difference*. The Teaching Professor. <https://www.teachingprofessor.com/topics/for-those-who-teach/deep-learning-vs-surface-learning-getting-students-to-understand-the-difference/>
- Frey, N., Fisher, D., & Johnson, C. (2007, September). Student roles in common formative assessments. *California English*, 18-20.
<https://drive.google.com/file/d/0B6ccPhGavxBUY20yZXZZMTF5TDg/view>

Week Eight

Tuesday, 16 May: Module 16

- Midterm Exam Three

Thursday, 18 May – Module 17: Learning and Teaching Science

A selective introduction to some key concepts in science learning: scientific misconceptions; constructivism, assimilation, accommodation, and conceptual change; inquiry-based or discovery learning and explicit instruction; and the NGSS.

Activity #9: Next Generation Science Standards

- AERA. (2007, Summer). Science education that makes sense. *Research Points: Essential Information for Education Policy*, 5(1), 1-4.
<http://www.aera.net/Portals/38/docs/Publications/Science%20Education.pdf>
- Colburn, A. (2000). Constructivism: science education's "grand unifying theory." *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 74(1), 9-12.
<https://doi.org/10.1080/00098655.2000.11478630>
- Learning in the wild. (2010, 8 April). [Editorial]. *Nature*, 464, 813-814.
<https://doi.org/10.1038/464813b>
- 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*, 14(2), 217-238. <https://doi.org/10.1007/s10956-005-4423-5>
- Sadler, P.M. (Producer), & Schneps, M.H. (Director). (1988). *A private universe* [Film]. Annenberg Media. <https://www.learner.org/series/a-private-universe/1-a-private-universe/> (20:14)
- Schneps, M.H., & Sadler, P.M. (2010). *A Private Universe* online resources. *Science in School*, 17, 1-2. https://www.scienceinschool.org/wp-content/uploads/2014/11/issue17_privateuniverse.pdf
- Committee on a Conceptual Framework for New K-12 Science Education Standards, Board on Science Education, Division of Behavioral and Social Sciences and Education, &

National Research Council. (2012). *A framework for K-12 science education: practices, crosscutting concepts, and core ideas* (Summary, pp. 1-4). National Academies Press. <https://www.nap.edu/download/13165>

Friday, 19 May – Module 18: Midterm Exam Three returned

Week Nine

Tuesday, 23 May – Module 19: Learning and Teaching Math

An overview of some key concepts in mathematical development: two systems for processing number; number sense, facts, procedures, and concepts; flexible thinking in math; the “math wars”; and providing examples and analyzing error patterns.

Activity #10: *Common Core State Standards for Mathematics*

- Griffin, S. (2004). Building number sense with Number Worlds: a mathematics program for young children. *Early Childhood Research Quarterly*, 19(1), 173-180. <https://doi.org/10.1016/j.ecresq.2004.01.012>
- Devlin, K. (2017, January 1). *Number sense: the most important mathematical concept in 21st Century K-12 education*. Huffington Post. http://www.huffingtonpost.com/entry/number-sense-the-most-important-mathematical-concept_us_58695887e4b068764965c2e0
- Willingham, D.T. (2009/2010, Winter). Is it true that some people just can't do math? *American Educator*, 14-19, 39. <https://www.aft.org/sites/default/files/periodicals/willingham.pdf>
- Kimball, M., & Smith, N. (2013, October 28). The myth of “I’m bad at math.” *The Atlantic*. <https://www.theatlantic.com/education/archive/2013/10/the-myth-of-im-bad-at-math/280914/>

Thursday, 25 May – Module 20: Learning and Teaching Reading

A brief survey of some central ideas and themes in reading development: emergent literacy, language, and print; the contents of the Report of the National Reading Panel; and teachers' knowledge about reading.

Activity #11: *Evidence for ESSA*

- Hindman, A.H., Wasik, B.A., & Snell, E.K. (2016). Closing the 30 million word gap: next steps in designing research to inform practice. *Child Development Perspectives*, 10(2), 134-139. <https://doi.org/10.1111/cdep.12177>
- Koralek, D., & Collins, R. (1997, December). *How most children learn to read*. Reading Rockets. <http://www.readingrockets.org/article/how-most-children-learn-read>
- Shanahan, T. (2005). *The National Reading Panel report: practical advice for teachers*. Learning Point Associates. <http://files.eric.ed.gov/fulltext/ED489535.pdf>

- Stainthorp, R. (2003, March). Use it or lose it. *Literacy Today*, 34, 16-17.
http://search.ebscohost.com.dartmouth.idm.oclc.org/login.aspx?direct=true&AuthType=ip_url,uid&db=a9h&AN=12329889&site=ehost-live&scope=site
- Hanford, E. (2019, December 5). There is a right way to teach reading, and Mississippi knows it [Opinion]. *New York Times*. <https://www.proquest.com/blogs-podcasts-websites/there-is-right-way-teach-reading-mississippi/docview/2321850505/se-2?accountid=10422>

Week Ten

Tuesday, 30 May – Module 21: Summary and Reflection

Concluding discussion: constructing a model of learning, development, and teaching in review; wrap-up and reflection on the course. Readings for today provide a review of many of the concepts we have encountered throughout the term.

- Alberts, B. (2011). Getting education right. *Science*, 333(6045), 919.
<https://doi.org/10.1126/science.1212394>
- Stipek, D. (2011). Education is not a race. *Science*, 332(6037), 1481.
<https://doi.org/10.1126/science.1209339>
- American Psychological Association, Coalition for Psychology in Schools and Education. (2015). *Top 20 principles from psychology for preK-12 teaching and learning*.
<http://www.apa.org/ed/schools/cpse/top-twenty-principles.pdf>
- Jones, S.M., & Kahn, J. (2017-2018, Winter). The evidence base for how learning happens: a consensus on social, emotional, and academic development. *American Educator*, 41(4), 16-21, 42-43. https://www.aft.org/ae/winter2017-2018/jones_kahn
- Wong, A., Green, A., & Zhou, L. (2015). Can schools be fixed? *The Atlantic*.
<https://www.theatlantic.com/education/archive/2015/12/hope-and-despair-k-12-education/421800/>
- Fisher, D., & Frey, N. (2021, September). Why do students disengage [Show & tell: a video column]. *Educational Leadership*, 17(1), 76-77. <https://www.ascd.org/el/articles/show-and-tell-a-video-column-why-do-students-disengage>

Final Exams

Sunday, 04 June – Module 22: Final Exam

The final exam will be on Sunday, 04 June at 11:30 AM. You will have the full three-hour period to complete the exam.