

EDUC 616
Masters Foundations of Learning and Teaching
Teaching, Learning, and Leadership Division
The University of Pennsylvania, Graduate School of Education
FALL 2021

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Course Location:
<https://bluejeans.com/850186393/5642>

Office Hours: Wednesday 4pm-5pm
Office Hours Location:
bluejeans.com/rybaker

Course Discussion Forum:
piazza.com/upenn/fall2021/educ616

Course Meeting:
Fridays, 630am-820am

Purpose of Course: This course provides an introduction to past and contemporary theories and perspectives on learning and teaching within and outside of schools. While there is little disagreement about the fundamental role that both learning and teaching play in human activity, as well as culture and society, a range of perspectives exists on what comprises learning, how it occurs, and how it might be prompted by others and through designed environments. Similarly, while “teaching” is a commonplace term in the English language, there is substantial controversy over what constitutes teaching and how desired teaching practices should be determined. The aim of this course is to engage students in grappling with these questions themselves while examining the ways they have been addressed within educational research and practice.

Course Structure: The course begins with an exploration of major theories of learning, theorists that introduced them, and their implications for practice. We then examine several pedagogical frameworks and perspectives and their implications for educational practice. Next, we look at how emerging technologies shape modern learning. Finally, we consider social factors and phenomena that influence and moderate learning in context. In each section, we explore core questions about the nature of teaching and learning:

- Part 1: What constitutes learning? How do prominent theories of learning frame learning, its processes and mechanisms? What are the relationships and disconnections among different learning theories?
- Part 2: What constitutes teaching? How should learning experiences be designed and supported? How is technological change shifting teaching and learning?
- Part 3: How do social and environmental factors shape learning?

Texts to Purchase or Borrow:

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press.

Dewey, J. (1938/1963). *Experience and education*. New York: Collier Books.

Expectations and Assignments: The following expectations and assignments are designed to contribute to your thinking and learning. We will also use your work on them to determine your final course grade.

Class Participation 10%	Weekly Discussion Groups 15%	Learning Reflection 15%	Learning Theory Matrix 10%	Current Educational Challenge 25%	Learning Revision 25%
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Class Participation, Preparation, and Attendance

Our typical class schedule will involve full class meetings on Zoom that cover the full 2 hours. Each class will include lecture and student discussions, drawing on required readings and online resources. You are expected to complete the readings and view online material, attend class, and participate thoughtfully in the activities and discussions, both on the discussion forum and in person. Your engagement and participation are important not only for your own learning but also for the learning of others. Please come to class prepared to explore the ideas discussed in the readings, raise questions, and make connections to your own experience as a learner, teacher, or designer. Please refrain from using non-class communication or work during class sessions. (Grade weight: 10%)

Weekly Discussion Groups on Piazza

We will use the course Piazza site to facilitate processing of readings outside of class. You will be placed in a Piazza discussion group. Each week we will provide several prompts related to the readings. Once you have completed the readings, you will write a short, informal response to one of the prompts (1 to 2 paragraphs). Your initial post is due 24 hours before your class session. (We use them to plan the class session.) You may respond to the posts by your group members up to class time. In preparation for the class meetings, you should read the responses posted by others in your discussion group. (Grade weight: 15%)

Reflection on Your Own Learning

We will begin our exploration of learning by examining some of our own experiences. We will also use this assignment to introduce yourself to us and your discussion group. You will write a vignette of a time that you learned something. Describe the context (scene and events) of this learning experience in as much detail as possible, explain what you learned, and how the experience made you feel. Conclude with a brief reflection on what this experience suggests to you about how learning occurs. Submit your reflection to your Piazza Topic Discussion Group to your small group’s Discussion Board by Sept. 13. Before class on Sept. 17, read all of your group’s vignettes and come to class prepared to discuss themes or interesting differences. More details will be provided in class. (Grade weight: 15%)

Learning Theory Matrix

At the end of the section of the course on learning theories, your group will complete a matrix designed to help you integrate and compare key components and perspectives underlying the three major theories we discussed: Behaviorism, Cognitivism, Socio-cultural/historical. (Grade weight: 10%)

Applying Theory to a Current Educational Problem

This assignment requires students to select a contemporary problem in education or learning (big or small), and consider how two core thinkers discussed in the course would suggest that it be addressed. Students will first outline the contemporary problem they hope to address and then detail how a specific educational theorist who we have studied during the course would address the problem, with clear reference to (and justification from) relevant course readings. Finally, students will discuss how a different educational theorist who we have studied would respond to that solution. Please submit your assignment in your small group's Discussion Board by November 15. More details will be provided in class. (Grade weight: 25%)

Analysis and Revision of Learning Situation

Throughout the semester, we will explore different ways of understanding, explaining, and promoting learning, including factors that might inhibit it. In this assignment, you will draw on some of these perspectives to consider how to improve learning. You will identify a specific instance in your experience where intended learning did not go as planned. In this instance you might be the learner, the teacher, or an outside observer. You will first describe the instance, focusing on what didn't go as planned. You will then use frameworks and perspectives from the course to explain what may have contributed to this outcome. Your analysis should attend to how learning was conceptualized, the nature of the designed learning opportunity/environment, including the role of the teacher (if appropriate), the learner's experience, and other social or contextual factors that might have contributed. You will conclude your paper with a short description of how you might change the learning situation to make it more successful. More details will be provided in class. (Grade weight: 25%)

Grading Policy: Specific grading criteria will be given with each assignment. When assigning grades, we follow the university graduate grading system in which an A denotes distinguished work; B good work; C unsatisfactory; D poor; and F failure. Assignments are graded on a four point scale that can be converted to letter grades as follows: A (3.85 - 4.0), A- (3.5 - 3.85), B+ (3.15 - 3.5), B (2.85 - 3.15), and so on.

COVID Era Policies: Attendance and participation are critical to both your grade and to your learning processes in this class. Considerable effort has been made to accommodate the unique learning conditions we are working under as the pandemic continues into 2021. We expect that you will attend class as much as you are physically able to, as we believe this strengthens the social connections that are important to learning. However, if COVID conditions—or worse, the actual virus—prevents you from being able to join, please let us know so that we can work out appropriate accommodations. Given that this course will be taught fully online, we encourage you to strengthen your social and professional connections with your cohort by finding other ways to support each other during this time. Study groups and even simple forms of emotional support are important to learning in the best of times, and so we hope you embrace opportunities to strengthen your community of practice this semester.

Course Topics and Readings

Part I: Learning theorists and theories

Week #1/September 3 Introduction: Theorizing Teaching and Learning

Week #2/September 10 Skinner and Behaviorism

Required Readings:

Wortham, S. (2003). Learning in education. In L. Nadel (Ed.), *Encyclopedia of Cognitive Science*. New York: Nature Publishing Group.

Skinner, B. F. (1954, Spring). The science of learning and the art of teaching. *Harvard Educational Review*, 86-97.

Donahoe, J. W. (1999). Edward L. Thorndike: The Selectionist Connectionist. *Journal of the Experimental Analysis of Behavior*, 72, 451–454.

Carr, S. (2014). Adapted Excerpt from Hope Against Hope: three schools, one city, and America's struggle to educate its children. *Policy Futures in Education*, 12(8), 992-1001.

Reflection on your own learning due Sept. 13

Week #3/September 17 Piaget: Cognitive theories

Siegler, R. S. (1998). *Children's thinking, Third edition*. Englewood Cliffs, NJ: Prentice-Hall. (Chapter 2, Piaget's theory of development)

Piaget, J. (1973). *To understand is to invent*. (excerpt pp. 3-20). New York: Penguin.

Anderson, R. C. (1984). Role of the reader's schema in comprehension, learning, and memory. In R. Anderson, J. Osborn, & R. Tierney (Ed.), *Learning to read in American schools: Basal readers and content texts* (pp. 243-257). Hillsdale, NJ: Erlbaum.

Week #4/September 24 Vygotsky: Sociocultural/historical theories

Vygotsky, L. S. (1930/1978). *Mind and Society: The development of higher psychological processes*. (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press. Read Chapters 1, 3, 4, and 6.

Wertsch, J. V. (1988). L. S. Vygotsky's "New" theory of mind. *American Scholar*, 57, 81-90.

Part 2: Pedagogies and the Shaping of Learning

Week #5/Oct. 1 "Instructionism" and Direct Instruction

Bloom, B.S. (1978) *Human Characteristics and School Learning*. Ch.1: Individual Differences in Learners and Learning.

Merrill, M. D. (2002). First principles of instruction. *Educational technology research and development*, 50(3), 43-59.

Bloom, B. *Taxonomy of Educational Objectives: Book 1: Cognitive Domain*. Pp. 1-24, 62-77, 89-96, 120-124, 144-148, 162-172, 185-192, 201-207. White Plains, NY: Longman.

Learning Theory Matrix due (One per group) Oct. 4

Week #6/October 8 Dewey and Progressivism

View online: [John Dewey's Theories on Education and Learning: An Introduction to His Life and Work](#)

Dewey, J. (1938/1963). *Experience and education*. New York: Collier Books. Ch. 1, 3, 4, 5, and 7

Jerome Bruner (1971). After John Dewey, What? In Jerome S. Bruner (Ed.), *On knowing: Essays for the left hand*. New York: Atheneum, pp. 58-59, 76-78.

Tan, C. (2020). Beyond high-stakes exam: A neo-Confucian educational programme and its contemporary implications. *Educational Philosophy and Theory*, 52(2), 137–148.

Week#7/October 15 Socio-Cultural and Vygotsky-Inspired Applications

Moll, L. C. (2000). Inspired by Vygotsky: Ethnographic experiments in education. In C. D. Lee and P. Smagorinsky (Eds.), *Vygotskian perspectives on literacy research: Constructing meaning through collaborative inquiry*. Cambridge: Cambridge University Press, 256-269.

Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation* (Chapters 1 and 2, pp. 29-58). Cambridge: Cambridge University Press.

Rogoff, B. (2008). Observing sociocultural activity on three planes: Participatory appropriation, guided participation, and apprenticeship. *Pedagogy and practice: Culture and identities*, 58-74.

Bereiter, C., Scardamalia, M., Cassells, C., & Hewitt, J. (1997). Postmodernism, knowledge building, and elementary science. *The Elementary School Journal*, 97(4), 329-340.

Applying theory to a current educational problem (prospectus) due Oct. 18

Week #8/October 22 Liberation and Critical/Culturally Relevant Pedagogy

Freire, P. (1968) *Pedagogy of the Oppressed*. Ch. 2.

Freire, P. (1973). *Education: The Practice of Freedom*. Ch.5 Education and Conscientização .

Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant pedagogy. *Theory Into Practice*, 34(3), 159–165.

Delpit, L. (1988). The silenced dialogue: Power and pedagogy in educating other people's children. *Harvard Educational Review*, 58(3), 280-298.

Ntseane, P. G. (2011). Culturally sensitive transformational learning: Incorporating the Afrocentric paradigm and African feminism. *Adult Education Quarterly*, 61(4), 307–323.

Week #9/October 29 Adaptive Learning Systems and their Uses

VanLehn, K. (2006). The behavior of tutoring systems. *International journal of artificial intelligence in education*, 16(3), 227-265.

Koedinger, K. R., Corbett, A. T., & Perfetti, C. (2012). The Knowledge-Learning-Instruction framework: Bridging the science-practice chasm to enhance robust student learning. *Cognitive Science*, 36(5), 757-798.

Baker, R.S. (2016) Stupid Tutoring Systems, Intelligent Humans. *International Journal of Artificial Intelligence and Education*, 26 (2), 600-614.

Optional Readings (examples of adaptive learning systems around the world):

Feng, M., Cui, W., & Wang, S. (2018). Adaptive learning goes to China. In *International Conference on Artificial Intelligence in Education* (pp. 89-93).

Baker, R.S., Al Yammahi, A., El Sebaaly, J., Nadaf, A., Kapp, A., Adjei, S. (2020) Can Computer-Based Learning Environments Mitigate Large Class Size? *Proceedings of the 28th International Conference on Computers in Education*. (United Arab Emirates)

Muralidharan, K., Singh, A., & Ganimian, A. J. (2019). Disrupting education? Experimental evidence on technology-aided instruction in India. *American Economic Review*, 109(4), 1426-1460.

McReynolds, A. A., Naderzad, S. P., Goswami, M., & Mostow, J. (2020). Toward Learning at Scale in Developing Countries: Lessons from the Global Learning XPRIZE Field Study. In *Proceedings of the Seventh ACM Conference on Learning@ Scale* (pp. 175-183). (Tanzania)

Brinkhuis, M., Cordes, W., & Hofman, A. (2020). Governing games: Adaptive game selection in the Math Garden. In *ITM Web of Conferences* (Vol. 33, p. 03003). EDP Sciences. (Netherlands)

Week #10/November 5 Learning in a Digitally Connected World

View this video: [The Future of Learning: Networked Society](#)

Ito, Mizuko, Kris Gutiérrez, Sonia Livingstone, Bill Penuel, Jean Rhodes, Katie Salen, Juliet Schor, Julian Sefton-Green, S. Craig Watkins. 2013. *Connected Learning: An Agenda for Research and Design*. Irvine, CA: Digital Media and Learning Research Hub. (Read pp. 32-87.)

Kafai, Y. B. & Burke, Q. (2013). Computer programming goes back to school. *Phi Delta Kappan*, 95(1), 63–65.

Gašević, D., Zouaq, A., & Janzen, R. (2013). “Choose your classmates, your GPA is at stake!” The association of cross-class social ties and academic performance. *American Behavioral Scientist*, 57(10), 1460-1479.

Part 3: Social Factors and Phenomena that Influence Learning

Week #11/November 12 **Identity and Culture**

Gee, J. P. (2001). Identity as an analytic lens for research in education. In W. G. Secada (Ed.), *Review of Research in Education*, 25, 99-126. Washington, D.C.: AERA.

Zhang, J. (2013). Collaboration, technology, and culture. In Cindy Hmelo-Silver, Angela O'Donnell, Carol Chan, & Clark Chinn (Eds.), *International Handbook of Collaborative Learning* (pp.495-508). Philadelphia, PA: Taylor & Francis.

Machalow, R., Goldsmith-Markey, L., and Remillard, J. (2020) Critical Moments: Pre-Service Mathematics Teachers' Narrative Arcs and Mathematics Orientations over 20 Years. *Journal of Math Teacher Education*.

Applying theory to a current educational problem due Nov. 15

Week #12/November 19 **Motivation and Engagement**

Järvelä, S., & Renninger, K. (2014). Designing for learning: Interest, motivation, and engagement. 668-685.

Duckworth, A. L. & Eskreis-Winkler, L. (2013). True grit. *The Observer*, 26(4), 1-3.

Baker, R.S.J.d., Rossi, L.M. (2013) Assessing the Disengaged Behavior of Learners. In Sottolare, R., Graesser, A., Hu, X., & Holden, H. (Eds.) *Design Recommendations for Intelligent Tutoring Systems -- Volume 1 -- Learner Modeling*. U.S. Army Research Lab, Orlando, FL, pp. 155-166, 2013.

Grant, H. & Dweck, C. S. (2001). Cross cultural responses to failure: Considering outcome attributions with different goals. In F. Salili, C. Chiu, & Y. Hong (Eds.), *Student motivation: The culture and context of learning* (pp. 203-219). New York: Kluwer.

Week #13/November 24 (special date! Wednesday is a Friday!) **Constructionism**

Papert, S., & Harel, I. (1991). Situating constructionism. *Constructionism*,36, 1-11.

Hay, K. E. & Barab, S. A. (2001). Constructivism in practice: A comparison and contrast of apprenticeship and constructionist learning environments. *The Journal of the Learning Sciences*, 10 (3), 281-322.

Holbert, N., Berland, M., & Kafai, Y. B. (Eds.). (2020). *Designing constructionist futures: The art, theory, and practice of learning designs*. MIT Press. Ch. 1: Introduction.

Week #14/December 3 **Effective Learning Strategies**

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

Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R., (2009). Learning Styles: Concepts and Evidence. *Psychological Science in the Public Interest*, 9(3), 105-119.

Howard-Jones, P. A. (2014). Neuroscience and education: myths and messages. *Nature Reviews Neuroscience*, 15(12), 817-824.

de Jong, T. (2010). Cognitive load theory, educational research, and instructional design: Some food for thought. *Instructional Science*, 38(2), 105–134.

Week #15/December 10 Emotions and Learning

Oberle, E., & Schonert-Reichl, K. A. (2017). Social and emotional learning: Recent research and practical strategies for promoting children’s social and emotional competence in schools. *Handbook of social behavior and skills in children*, 175-197

Boekaerts, M., & Pekrun, R. (2015). Emotions and emotion regulation in academic settings. *Handbook of educational psychology*, 3, 76-90.

Elfenbein, H. A., & Ambady, N. (2002). On the Universality and Cultural Specificity of Emotion Recognition: A Meta-Analysis. *Psychological Bulletin*, 128(2), 203-235.

Week #16/December 17 Social Factors that Mediate Learning

Shafir, E. & Mullainathan, S. (2013). Scarcity: Why Having Too Little Means So Much. New York: Times. (Chapter 2, pp. 39-60).

Maloney, E. A., Schaeffer, M. W., & Beilock, S. L. (2013). Mathematics anxiety and stereotype threat: Shared mechanisms, negative consequences and promising interventions. *Research in Mathematics Education*, 15(2), 115–128.

Huang, J., & Klinger, D. (2006). Chinese Graduate Students at North American Universities: Learning Challenges and Coping Strategies. *Comparative and International Education*, 35(2).

Listen to this 20-min. podcast: [Common Ground in the Classroom](#)

Analysis and Revision of Learning Situation due Dec. 20