EDUC 616-001 2016C - Foundations of Teaching and Learning

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Instructor

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Office Hours Wednesday 3pm-4pm or by Appointment

Class Location: GSE 007

In this class, we explore key theoretical perspectives on teaching and learning. What is knowledge and knowing? What is learning? What is teaching? What are good teaching and learning? How do contexts influence teaching, knowing, and learning?

In the course, students will learn foundational theoretical perspectives on these questions, while being encouraged to develop answers for themselves, and develop an underpinning for the work that they will carry forward in their professional careers, whether in research or in practice.

Course Texts

[available at Penn University Bookstore or online]

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

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

Course Readings

[available in digital format at Canvas Course Site]

Course Overview

August 31	Class 1	Introductions & Overview	**CANVAS DISCUSSION**
September 7	Class 2	Behaviorism	**CANVAS DISCUSSION**
September 14	Class 3	Cognitive Perspective/Classic Constructivism	**CANVAS DISCUSSION**
September 21	Class 4	Constructionism	**CANVAS DISCUSSION**

| September 28 | Class 5 | Vygotsky | **CANVAS DISCUSSION** |

| October 5 | Class 6 | Progressivism/Dewey | **CANVAS DISCUSSION** |

October 12   Class 7   Education, Social Change, and Responsiveness   **CANVAS DISCUSSION**

October 14   THEORETICAL PAPER PROSPECTUS DUE (NOT A CLASS DAY)

October 17   MIDTERM EXAM DUE (NOT A CLASS DAY)

October 19	Class 8	Community of Learners and Practice	**CANVAS DISCUSSION**
October 26	Class 9	Identity and Diversity	**CANVAS DISCUSSION**
November 2	Class 10	Online Learning	**CANVAS DISCUSSION**
November 9	Class 11	Motivation & Engagement	**CANVAS DISCUSSION**

November 11 THEORETICAL PAPER DUE (NOT A CLASS DAY)

Week of November 16 SPECIAL SESSION TBA   Class 12 Robust Learning   **CANVAS DISCUSSION**

November 16	Class 13	Architectures & Frameworks	**CANVAS DISCUSSION**
November 23	**no class**	**Thanksgiving**	
November 30	**no class**	**To be rescheduled to week of November 16**	
December 7	Class 14	Emerging Methods: EDM	**CANVAS DISCUSSION**

December 14   Class 15   Emerging Methods: Design Research and Automated Experimentation   **CANVAS DISCUSSION**

December 20 FINAL EXAM DUE 5PM (NOT A CLASS DAY)

Course Topics and Weekly Readings

CLASS 1 • August 31 • **Introduction & Overview**

Wortham, S. (2003). Learning in education. In L. Nadel (Ed.), *Encyclopedia of Cognitive Science* (pp. 1079-1082). New York: Macmillan/Nature Publishing Group.

CLASS 2 • September 7 • **Skinner: Behaviorism**

Goodman, J. (2013). Character Management Organizations and the Regulated Environment: Is it worth the prize? *Educational Researcher, 42*(2), 89-96.

Kohn, A. (1993). *Punished by rewards: The trouble with gold stars, incentive plans, A's, praise and other bribes.* (Read **Chapter 1**, Skinner-boxed: The Legacy of Behaviorism, and **Chapter 12**, Good Kids Without Goodies). Boston: Houghton Mifflin.

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

CLASS 3 • September 14 • **Cognitive Perspective/Classic Constructivism**

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

Duckworth, E. (1987). *The having of wonderful ideas and other essays on teaching and learning* (Chapter 1). New York: Teachers College Press.

CLASS 4 • September 21 • **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.

Peppler, K. A., & Kafai, Y. B. (2007). What Videogame Making Can Teach Us About Literacy and Learning: Alternative Pathways into Participatory Culture. *Proceedings of DIGRA 2017.*

CLASS 5 • September 28 • **Vygotsky**

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (pp. 1-91). Cambridge, MA: Harvard University Press.

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.

CLASS 6 • October 5: **Dewey: Progressivism**

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

Greene, M. (2003). Teaching as possibility: A light in dark times. In *The Jossey-Bass Reader on Teaching*, (pp. 62-73). San Francisco: Jossey-Bass.

CLASS 7 October 12 • **Education, Social Change, and Responsiveness.**

Freire, P. (1973). *Education: The Practice of Freedom*. Ch.5 Education and Conscientiza**ção**
(http://www.dicionarioinformal.com.br/capitula%C3%A7%C3%A3o/) (Becoming aware of one's self).

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

Tuhiwai-Smith, L. (1999) *Decolonizing Methodologies.* Introduction and Ch. 7.

hooks, b. (1994). *Teaching to transgress: Education as the practice of freedom*. New York: Routledge. (pp. 13-22).

Freire, P. (1986). Letter to north-american teachers. *Obra de Paulo Freire; Série Manuscritos*.

Course Description

CLASS 8 • October 19: **Communities of Learners and Practice**

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*, 32-42.

Ching, C. C. & Kafai, Y. B. (2008). Peer Pedagogy: Student collaboration and reflection in learning through design. *Teachers College Record, 110*(12), 2601-2632.

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

CLASS 9 • October 26: **Identity & Diversity**

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

Goode, J. (2010). The digital identity divide: how technology knowledge impacts college students. *New Media & Society, 12*(3), 497-513.

Gutierrez, K. D., & Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice. *Educational Researcher*, *32*(5), 19-25.

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

CLASS 10 • October 21: **Online Learning**

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.

Fishman, B., Konstanantopoulos, K., Kubitskey, B., Vath, R., Park, G., Johnson, H., & Edelson, D. (2014). Comparing the impact of online and face-to-face professional development in the context of curriculum implementation. The *Journal of Teacher Education*.

Breslow, L., Pritchard, D. E., DeBoer, J., Stump, G. S., Ho, A. D., & Seaton, D. T. (2013). Studying learning in the worldwide classroom: Research into edX's first MOOC. *Research & Practice in Assessment*, *8*.

CLASS 11 November 11: **Motivation and Engagement**

Yeager, D. S., Walton, G. M., Brady, S. T., Akcinar, E. N., Paunesku, D., Keane, L., ... & Gomez, E. M. (2016). Teaching a lay theory before college narrows achievement gaps at scale. *Proceedings of the National Academy of Sciences*, 201524360

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

D'Mello, S., & Graesser, A. (2012). Dynamics of affective states during complex learning. *Learning and Instruction*, *22*(2), 145-157

CLASS 12 • Special Session, Week of November 16: **Robust Learning**

Bransford, J. D., & Schwartz, D. L. (1999). Rethinking transfer: A simple proposal with multiple implications. *Review of research in education*, *24*, 61-100.

Baker, R. S., & Corbett, A. T. (2014). Assessment of robust learning with educational data mining. *Research & Practice in Assessment*, *9*.

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.

CLASS 13 • November 16: **Architectures and Frameworks**

Choi, S. Y. (1986). Application of component display theory in designing and developing CALI. *Calico Journal*, *3*(4), 40-45.

Ritter, S., Anderson, J. R., Koedinger, K. R., & Corbett, A. (2007). Cognitive Tutor: Applied research in mathematics education. *Psychonomic bulletin & review*, *14*(2), 249-255.

CLASS 14 • December 7: **Emerging Research Methods: Educational Data Mining**

Baker, R. S., & Yacef, K. (2009). The state of educational data mining in 2009: A review and future visions. *JEDM-Journal of Educational Data Mining*, *1*(1), 3-17.

Baker, R., Siemens, G. (2014) Educational data mining and learning analytics. In Sawyer, K. (Ed.) *Cambridge Handbook of the Learning Sciences: 2nd Edition*, pp. 253-274.

CLASS 15 • December 14: **Design Experiments/Research and Automated Experimentation**

Cobb, P., Confrey, J., Lehrer, R., & Schauble, L. (2003). Design experiments in educational research. *Educational researcher*, *32*(1), 9-13

Koedinger, K. R., & Sueker, E. L. (1996). PAT goes to college: Evaluating a cognitive tutor for developmental mathematics. In *Proceedings of the 1996 international conference on Learning sciences* (pp. 180-187). International Society of the Learning Sciences

Williams, J. J., Ostrow, K., Xiong, X., Glassman, E., Kim, J., Maldonado, S. G., ... & Heffernan, N. (2015, March). Using and designing platforms for in vivo educational experiments. In *Proceedings of the Second (2015) ACM Conference on Learning@ Scale* (pp. 409-412). ACM

Assignments EDUC 616

A theoretical paper will be due on November 11. This theoretical paper will require the student to select a topic (in consultation with the instructor), and argue for a specific position for how the field of learning analytics must change to meet the needs of 21st century education or learning sciences. Students will be required to turn in a 1-page paper prospectus for the theoretical paper on October 14, which will be graded as well. Extensions for the paper and prospectus deadlines will only be available in case of instructor error or extreme circumstances (assignments in other classes, research studies, and so on do not count as extreme circumstances; serious injury, illness, or death in the family do count as extreme circumstances). Outside of these circumstances, late hand-ins will not be accepted (e.g. zero credit will be given).

All assignments should be sent to the instructor via email. The assignment title and email title should be 616-YOURLASTNAME-ASSIGNMENTNAME. Assignments can be submitted in Microsoft Word or PDF format.

Midterm and final exams will be given. Both exams are open-book; open-resource; open-web. However, collaborating on the exam with other students or anyone else at all is NOT ALLOWED. The exams will be made available on the course webpage 48 hours before the due date.

Class participation involves both attendance and active (and constructive) participation in classroom discussions. While it is not expected that you will memorize every paper assigned for the class, it is expected that you will have studied the readings to the degree that you can participate actively in discussions.

Grading

- Theoretical Paper Prospectus 10%
- Theoretical Paper 20%
- Midterm Exam 25%
- Final Exam 25%
- Class Participation 20%

Please note that assignment criteria and dates may be changed and/or further detailed during the term.

Using CANVAS

1. Go to http://penngse.instructure.com
2. Click on Log in and enter your PennNet ID and password.
3. Click on EDUC616-001-2016 MASTERS FNDS TCH & LRN

Periodically, I will email the class via Canvas. To be sure that you receive these messages, please make sure that your contact information is up-to-date.

PLAGIARISM

Plagiarism will result in a failing grade. The preferred style for bibliographic referencing is APA (*American Psychological Association*). You can find details about APA documentation on the following helpful website: **http://www.wisc.edu/writing/Handbook/DocAPA.html** **(http://www.wisc.edu/writing/Handbook/DocAPA.html)** . For educational research, the most popular database is ERIC (*Education Resources Information Center*). This can be found online at: **http://www.eric.ed.gov/** **(http://www.eric.ed.gov/)** .

Assignments Summary: