EDP 382D: INSTRUCTIONAL PSYCHOLOGY
Spring 2017, Unique #10930
Wednesdays, 4:00–7:00PM, SZB 432
The University of Texas at Austin

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Office Hours: By appointment

Course Objectives

The purpose of this course is to give you a foundation in instructional psychology. We will focus on how theory and research in psychology can be applied to facilitate learning in educative contexts broadly construed. Each week, we will delve into a new set of issues that all revolve around a particular theme (e.g., instructional approaches, assessing learning, technology, etc.). We will engage with both micro- and macro-level psychological theories as we analyze various aspects of educational practice. My hope is that you will develop an appreciation for the challenges and progress in this area of research, identify limitations to current work, and discuss possible directions for further research. Furthermore, I want you to acquire knowledge that enables you to foster educational innovation, regardless of your career path (e.g., teaching, designing curricula, crafting policy, etc.).

In addition to acquiring some content knowledge, a further goal is to provide you with opportunities to practice skills that will be valuable regardless of your career path:

1) Evaluating research and theories
2) Providing constructive criticism
3) Communicating ideas both orally and in writing
4) Facilitating discussion

As described below, you will have numerous formal and informal opportunities for practice. My hope is that this practice, along with feedback from your classmates and myself, will help you to further develop these skills.

Finally, I want the work that you produce for this course to be useful to you outside of the course. Thus, the main piece of work that you produce will be an educational intervention proposal that combines your interests with a topic from the course. Hopefully, the proposal will be something that you could pursue at some point — either in the near future or later in your career.

Website and Communication

This course has a Canvas site associated with it (http://canvas.utexas.edu/). Canvas will be used to post announcements, course documents, assignments, supplementary materials, and lecture slides. Please check the site regularly for announcements, assignment reminders, and other messages.

The best way to reach me outside of class is via email. I try to respond to email as promptly as possible; if 24 hours have passed without a response, please feel free to re-send the message. Although I will not have set office hours, I would be happy to meet with you individually, so please let me know if you would like to talk. In particular, I encourage you to talk with me about both your educational intervention proposal and your plan for facilitating discussion.

Course Overview

The majority of the course will be structured around discussing articles from the literature. You will be responsible for reading the assigned articles and thinking critically about them prior to class. All readings will be posted to our Canvas site, and they will be divided into core and supplemental articles. Each week, everyone in the class will read the core articles, which will generally consist of reviews and meta-analyses. In addition, you will select one of the supplemental articles to read (but feel free to read more); the supplemental articles will generally be reports of empirical research. To encourage thoughtful reading, I will require you to prepare two questions before class, one question about one or more of core articles and one question about the supplemental article that you chose.

Each class will be divided into three phases. First, we will have a discussion of the core articles in a large group. Each week, two students will be assigned to co-lead of the large group discussion. Second, we will have three simultaneous small group discussions of the supplemental articles. Students will participate in the discussion of whichever supplemental article they chose to read. At the end of the small group discussions, we will come back together as a large group and share some of the take-away points that came out of each discussion. Third, I will prepare you for the readings for the following week by providing some background on the next topic.

In addition to the assigned readings and class sessions, each student will independently develop an educational intervention proposal over the course of the semester; it is expected that this process will involve additional reading that is directly relevant to the proposal. Students will receive feedback on a full draft of their proposal from two of their classmates through a peer-review assignment. I will also provide feedback on the draft.

Evaluation

The basis of evaluation is how much you learn and not how well you do in comparison to others in the class. Here are the key components:

Weekly Questions (10%)

In order to facilitate discussion, you will be required to post two questions to Canvas by noon each Tuesday before class. One of the questions should focus on the core articles, while the other question should be about one of the supplemental articles. Everyone will be able to view all the questions (as well as who posted each question), so please review the questions generated by other students before you come to class.

Discussion Facilitation (10%)

You will be responsible for facilitating discussion once during the course. Each student will co-lead one large-group discussion of the core articles. Discussion leaders are encouraged to discuss their plans with me well in advance of the class, but at least two days before. You have a lot of freedom in how to structure and guide the discussion, so feel free to be creative. I also will help to facilitate discussion as needed.

Analysis Paper (20%)

You will write a short analysis paper in which you will identify an aspect of educational practice and critique it. The specific focus of the paper is up to you, but possibilities include analyzing a pedagogical method, a technology-based learning system or tool, or an instructional resource (e.g., a textbook). The paper should be 2-3 single-spaced pages in length.

Educational Intervention Proposal (50%)

You will develop a proposal for an intervention that combines your interests with a topic from the course. The proposed intervention can be framed as either a research study or a plan for implementation in educational practice. You will have numerous deadlines to help you stay on track (see Schedule below). The formal selection of a topic is required, but it will not be graded. You will hand in two drafts of the full proposal. Formal feedback will be provided on the first draft (see next section on Peer Review) and a tentative grade will be assigned. After revising the proposal to incorporate the feedback, you will submit a final draft and a final grade will be assigned that takes into account the degree of improvement. The proposal should be 10-12 double-spaced pages in length. If the proposal focuses on conducting a research study, then it should be written in APA style (see Resources for Writing folder in the files on Canvas).

Peer Review (10%)

You will be asked to write a formal review for two of your classmates' educational intervention proposals. Each review should be no longer than two double-spaced pages and provide constructive criticism to help improve the proposal. Reviews will be graded on a five-point scale.

Policy for Late Assignments

If you do not submit an assignment when it is due, then points will be deducted from the grade that you would have received had you turned in the assignment on time. 5% of the total points for the assignment will be deducted per day (or fraction thereof) that it is overdue; assignments that are more than 20 days overdue will receive a grade of 0. Extensions for individual assignments may be granted if you ask at least one day in advance.

Schedule

Date	Topic	Major Assignments*
1/18	Introductions & Course Overview	
1/25	Evaluating Research & Theories	
2/1	History of Instructional Psychology; Theories of Learning & Motivation	
2/8	Teaching Approaches I — Strategies & Activities	
2/15	Teaching Approaches II — Pedagogical Methods	
2/22	Teaching Approaches III — Motivation & Emotion	
3/1	Assessing the Efficacy of Instruction	
3/8	Teacher Knowledge and Practices	Topic for Educational Intervention Proposal
3/15	*No Class (Spring Break)*	
3/22	Structuring Learning	Analysis Paper
3/29	Student Characteristics	
4/5	Technology I — Personalizing Learning	
4/12	Technology II — Multimedia & Virtual Environments	
4/19	Assessing Learning	First Draft of Educational Intervention Proposal
4/26	Curricula	
5/3	TBD	Peer-Reviews
5/10	*No Class (Finals)*	Final Draft of Educational Intervention Proposal

** See Readings section for information on assigned articles*

Readings

(Core readings are italicized; supplemental readings are normal font)

1/25 – Evaluating Research & Theories

Roediger, H. L., & McCabe, D. P. (2007). Evaluating experimental research. In R. J. Sternberg, H. L. Roediger, & D. F. Halpern (Eds.), Critical thinking in psychology (pp. 15-36). Cambridge University Press.

Dennis, S., & Kintsch, W. (2007). Evaluating theories. In R. J. Sternberg, H. L. Roediger, & D. F. Halpern (Eds.), Critical thinking in psychology (pp. 143-159). Cambridge University Press.

Hattie, J. (2013). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge. Chapters 1-3, pp. 1-38.

2/1 – History of Instructional Psychology; Theories of Learning & Motivation

Glaser, R. (1982). Instructional psychology: Past, present, and future. American Psychologist, 37, 292-305.

Gagne, R. M., & Dick, W. (1983). Instructional psychology. Annual Review of Psychology, 34, 261-295.

Mayer, R. E. (1996). Learners as information processors: Legacies and limitations of educational psychology's second metaphor. Educational Psychologist, 31, 151-161.

Bruner, J. S. (1961). The act of discovery. Harvard Educational Review, 31, 21-32.

Skinner, B. F. (1954). The science of learning and the art of teaching. Harvard Educational Review, 24, 86-97.

2/8 – Teaching Approaches I: Strategies & Activities

Hattie, J. (2013). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge. Chapter 9, pp. 161-199.

Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013). Improving students' learning with effective learning techniques promising directions from cognitive and educational psychology. Psychological Science in the Public Interest, 14, 4-58.

Koedinger, K. R., Booth, J. L., & Klahr, D. (2013). Instructional complexity and the science to constrain it. Science, 342, 935-937.

Marsh, E. J., & Sink, H. E. (2010). Access to handouts of presentation slides during lecture: Consequences for learning. Applied Cognitive Psychology, 24, 691-706.

Rittle-Johnson, B. (2006). Promoting transfer: Effects of self-explanation and direct instruction. Child development, 77, 1-15.

Blunt, J. R., & Karpicke, J. D. (2014). Learning with retrieval-based concept mapping. Journal of Educational Psychology, 106, 849-858.

2/15 – Teaching Approaches II: Pedagogical Methods

Hattie, J. (2013). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge. Chapter 10, pp. 200-236.

Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. Educational Psychologist, 41, 75-86.

Michaelsen, L. K., & Sweet, M. (2008). The essential elements of team-based learning. New directions for teaching and learning, 2008, 7-27.

Crouch, C. H., & Mazur, E. (2001). Peer instruction: Ten years of experience and results. American Journal of Physics, 69, 970-977.

Schmidt, H. G., De Volder, M. L., De Grave, W. S., Moust, J. H., & Patel, V. L. (1989). Explanatory models in the processing of science text: The role of prior knowledge activation through small-group discussion. Journal of Educational Psychology, 81, 610-619.

2/22 – Teaching Approaches III: Motivation & Emotion

Schunk, D. H. (2016). Learning theories. Pearson. Chapter 8, pp. 340-395.

Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. Review of Educational Research, 81, 267-301.

Paunesku, D., Walton, G. M., Romero, C., Smith, E. N., Yeager, D. S., & Dweck, C. S. (2015). Mind-set interventions are a scalable treatment for academic underachievement. Psychological science, 26, 784-793.

Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. Journal of Educational Psychology, 98, 209-218.

Hulleman, C. S., & Harackiewicz, J. M. (2009). Promoting interest and performance in high school science classes. Science, 326, 1410-1412.

3/1 – Assessing the Efficacy of Instruction

Wieman, C., & Gilbert, S. (2014). The teaching practices inventory: a new tool for characterizing college and university teaching in mathematics and science. CBE-Life Sciences Education, 13, 552-569.

Wieman, C. (2015). A better way to evaluate undergraduate teaching. Change: The Magazine of Higher Learning, 47, 6-15.

Stroebe, W. (2016). Why good teaching evaluations may reward bad teaching: On grade inflation and other unintended consequences of student evaluations. Perspectives on Psychological Science, 11, 800-816.

Centra, J. A. (1975). Colleagues as raters of classroom instruction. The Journal of Higher Education, 327-337.

MacNell, L., Driscoll, A., & Hunt, A. N. (2015). What's in a name: Exposing gender bias in student ratings of teaching. Innovative Higher Education, 40, 291-303.

Kupermintz, H. (2003). Teacher effects and teacher effectiveness: A validity investigation of the Tennessee Value Added Assessment System. Educational Evaluation and Policy Analysis, 25, 287-298.

3/8 – Teacher Knowledge and Practices

Hattie, J. (2013). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge. Chapter 7, pp. 108-128.

Calderhead, J. (1996). Teachers: Beliefs and knowledge. In D. C. Berliner & R. C. Calfee (Eds.), Handbook of Educational Psychology (pp. 709-725). New York: Macmillan.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. Educational Researcher, 4-14.

Kim, C., Kim, M. K., Lee, C., Spector, J. M., & DeMeester, K. (2013). Teacher beliefs and technology integration. Teaching and Teacher Education, 29, 76-85.

Wayne, A. J., Yoon, K. S., Zhu, P., Cronen, S., & Garet, M. S. (2008). Experimenting with teacher professional development: Motives and methods. Educational Researcher, 37, 469-479.

3/22 – Structuring Learning

Hattie, J. (2013). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge. Chapter 6, pp. 72-107.

Reiser, B. J. (2004). Scaffolding complex learning: The mechanisms of structuring and problematizing student work. The Journal of the Learning Sciences, 13, 273-304.

Carpenter, S. K., Cepeda, N. J., Rohrer, D., Kang, S. H., & Pashler, H. (2012). Using spacing to enhance diverse forms of learning: Review of recent research and implications for instruction. Educational Psychology Review, 24, 369-378.

Atkinson, R. K., Renkl, A., & Merrill, M. M. (2003). Transitioning from studying examples to solving problems: Effects of self-explanation prompts and fading worked-out steps. Journal of Educational Psychology, 95, 774-783.

Weinstein, Y., & Roediger III, H. L. (2012). The effect of question order on evaluations of test performance: How does the bias evolve?. Memory & Cognition, 40, 727-735.

3/29 – Student Characteristics

Hattie, J. (2013). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge. Chapter 4, pp. 39-60.

Pellegrino, J. W., & Glaser, R. (1979). Cognitive correlates and components in the analysis of individual differences. Intelligence, 3, 187-215.

Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning styles concepts and evidence. Psychological Science in the Public Interest, 9, 105-119.

Whitener, E. M. (1989). A meta-analytic review of the effect on learning of the interaction between prior achievement and instructional support. Review of Educational Research, 59, 65-86.

Miserandino, M. (1996). Children who do well in school: Individual differences in perceived competence and autonomy in above-average children. Journal of Educational Psychology, 88, 203-214.

4/5 – Technology I: Personalizing Learning

Bomash, I., & Kish, C. (2015). The improvement index: Evaluating academic gains in college students using adaptive lessons. Knewton, Inc.

Graesser, A. C., Conley, M. W., & Olney, A. (2012). Intelligent tutoring systems. In K. R. Harris, S. Graham, & T. Urdan (Eds.), APA Educational Psychology Handbook (Vol. 3): Application to Learning and Teaching (pp. 451-473). Washington D.C.: American Psychological Association.

Long, P., & Siemens, G. (2011). Penetrating the Fog: Analytics in Learning and Education. EDUCAUSE Review, 46, 30-40.

D'Mello, S., Picard, R. W., & Graesser, A. (2007). Toward an affect-sensitive AutoTutor. *IEEE Intelligent Systems*, 4, 53-61.

Roll, I., Aleven, V., McLaren, B. M., & Koedinger, K. R. (2011). Improving students' help-seeking skills using metacognitive feedback in an intelligent tutoring system. Learning and Instruction, 21, 267-280.

4/12 – Technology II: Multimedia & Virtual Environments

Mayer, R. E. (2002). Multimedia learning. In B. H. Ross (Ed.), Psychology of Learning and Motivation (pp. 85-139). New York: Academic Press.

Owston, R. D. (1997). The World Wide Web: A technology to enhance teaching and learning?. Educational researcher, 26, 27-33.

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, 13-25.

Barab, S. A., Gresalfi, M., & Ingram-Goble, A. (2010). Transformational play using games to position person, content, and context. Educational Researcher, 39, 525-536.

Umanath, S., Butler, A. C., & Marsh, E. J. (2012). Positive and negative effects of monitoring popular films for historical inaccuracies. Applied Cognitive Psychology, 26, 556-567.

4/19 – Assessing Learning

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

Duckworth, A. L., & Yeager, D. S. (2015). Measurement matters assessing personal qualities other than cognitive ability for educational purposes. Educational Researcher, 44, 237-251.

Sternberg, R. J. (2007). Culture, instruction, and assessment. Comparative Education, 43, 5-22.

Wiliam, D., Lee, C., Harrison, C., & Black, P. (2010). Teachers developing assessment for learning: Impact on student achievement. Assessment in Education, 11, 49-65.

Topping, K. (1998). Peer assessment between students in colleges and universities. Review of Educational Research, 68, 249-276.

4/26 – Curricula

Hattie, J. (2013). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge. Chapter 8, pp. 129-160.

Mayer, R. E. (2004). Teaching of subject matter. Annual Review of Psychology, 55, 715-744.

Pressley, M., Raphael, L., Gallagher, J. D., & DiBella, J. (2004). Providence-St. Mel School: How a school that works for African American students works. Journal of Educational Psychology, 96, 216-235.

Libarkin, J. (2008, October). Concept inventories in higher education science. Report for National Research Council Promising Practices in Undergraduate STEM Education Workshop, 1-13.

Grove, N. P., Hershberger, J. W., & Bretz, S. L. (2008). Impact of a spiral organic curriculum on student attrition and learning. Chemistry Education Research and Practice, 9, 157-162.

University Requirements

Special Needs: The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. To determine if you qualify, please contact the Dean of Students at 471-6259; TTY 471-4641.

Religious Holy Day Observance: If an assignment or exam falls due on a day when you are observing a religious holy day, I will work with you to find a time to submit the work.

Academic Dishonesty and Plagiarism: The University of Texas at Austin takes academic dishonesty and plagiarism very seriously. Students who violate University rules on academic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. For further information, please visit http://deanofstudents.utexas.edu/sjs/academicintegrity.html.

The twelfth class day is **February 1st**, which is the last day to possibly get a refund if you drop a class.

Safety information: Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.

Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.

Students requiring assistance in evacuation shall inform their instructor in writing during the first week of class.

In the event of an evacuation, follow the instruction of faculty or class instructors.

Do not re-enter a building unless given instructions by The University of Texas at Austin Police Department or Fire Prevention Services office.

Other important Emergency
Information: http://www.utexas.edu/safety/preparedness/

Behavior Concerns Advice Line: Use this resource to help fellow UT members about whom you have concerns BCAL: 232-5050