

EDUC 131: Educational Technology

Winter 2020

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Office Hours: Mondays 10-11am or email me to set up an appointment.

Prerequisites: This course has no formal prerequisites and does not assume any particular prior knowledge. Prior exposure to learning theories could be helpful, but is not necessary.

Overview

Welcome to the world of educational technology! In this course, we will study several important attempts to introduce technology to education from various perspectives (i.e., historical, theoretical, and experiential). We will discuss the *history* of educational technology and try to evaluate why many innovative technologies have not had a lasting impact. We will discuss some of the *theoretical foundations* of educational technology, including learning theories and beliefs about the role of technology in education. Finally, you will *experience* educational technologies first hand and evaluate how your own experiences compare and contrast with theory and research. The course culminates in a final project where you must either *design* your own educational technology or *integrate* some existing technology into a lesson or course plan.

Our class meetings will be a mix of discussions, interactive activities, and lectures. To facilitate the discussions, each week you will be assigned a mix of readings, experiences, and guiding questions to complete. In addition to giving you material to learn about educational technology, these readings and activities are designed to make you reflect, critically engage with, and even challenge the texts, theories, and technologies. As such, the guiding questions will often have a *before and after* format, where you will be asked to write down your thoughts before engaging with some course material and then asked how your perspective has changed afterwards. These questions (and your accompanying answers) suit multiple purposes:

- 1) They help you more actively engage with the course materials.

- 2) They help [make your change in thinking visible](#), which can be of value to yourself as well as to me, to determine what you are taking away and how useful the materials are in helping you learn.
- 3) They serve as a starting point for our class discussions and allow me to use your answers in class to further the discussion.

Learning Objectives

By taking this course, I expect you will be able to do the following:

- *Define* educational technology and *compare* and *contrast* various definitions that have been proposed.
- *Describe* various educational technologies that have been used throughout history and in the present day.
- *Evaluate* the potential impact of these technologies to support student learning outcomes.
 - SoE Core Competency: **Application**
- *Pinpoint* the theoretical perspectives that underlie these technologies.
 - SoE Core Concept: **Learning**
- *Critically read and analyze* academic papers in educational technology and the learning sciences.
 - SoE Core Competency: **Methodological Practices and Research Design**

(and with different levels of emphasis depending on your choice of final project)

- *Integrate* educational technology into a lesson plan.
 - SoE Core Competency: **Application**
- *Design* educational technologies using the design thinking process and *identify* what considerations go into designing such technology.
 - SoE Core Competency: **Application**

Moreover, I hope that you will be able to use what you learn from this course in situations that might arise in your career (e.g., *to determine* if a new technology that you are being asked to use or buy as a teacher or administrator is a good investment for your class, school, or district).

Course Assignments

Weekly Guiding Questions

As described above, you will be given guiding questions to complete on Canvas each week alongside the readings and experiences. Each of these questions will be graded on a two point scale:

- You get 2 points for answering the question thoroughly and thoughtfully.
- You get 1 point for providing an incomplete or shallow answer.
- You get 0 points if you do not answer the question.

Additionally, if your answer is particularly thought-provoking, you may receive a bonus point. In these cases, I may choose to feature your answer in class. (Note: To respect your privacy, you will be given the option of choosing to not allow your answers to be shared with your peers or to only be shared anonymously.)

Research Paper


The research/opinion paper will be assigned on February 18th and due on March 3rd. It has the following prompt:

What do you think will be the most promising role for technology in education 25 years from now? What do you think should be the most promising role for technology in education? Your answer to the two questions can be the same or different, but you must justify why in either case.

The paper should be around 1500 words and cite at least five references, at least two of which are from the course and two of which are not course readings. More information about the paper will be given when it is assigned, but you are encouraged to think about the prompt as we go through the course.

Final Project

The course will culminate in a final project where you will be given the choice to pursue one of the following:

 *Design your own educational technology*

- Use the design thinking process to find an educational need and develop a technology (or a mock prototype) that addresses that need.
- Assess the potential for your technology to be used in schools.
- For this project you may work in pairs.



Integrate some existing technology into a lesson plan or course plan

- Design a lesson plan or overall course plan that involves the use of technology.
- Document why you are using technology in a particular way and how its use supports student learning.
- This project must be done individually.

Dates and Deliverables:

- Feb 11 - The project will be assigned.
- March 12/17 - You will present a poster during one of the two class sessions.
- March 17 - You will need to turn in a written report. The written report will document not only the final product but also a *written reflection* of the process used to Design or Integrate the technology.

Your choice of which to pursue could depend on your interest. For example, if you aspire to be a teacher you may choose to go with the Integrate route. However, I encourage you to step outside your comfort zone, as the Design route could be a fun experience that may give you a different lens onto educational technology. Throughout the course, you will be given scenarios that require designing or integrating technologies to prepare you for this project. Note: you do not need to have technical expertise (e.g., programming skills) to design technology.

Grading

There are four components to your grade in the course:

Weekly Guiding Questions - 30%

Paper - 20%

Final Project - 30%

Participation - 20%

Your final grade will be determined based on a [standard grading scale](#):

97%-100% is an A+, 93-96% is an A, 90-92% is an A-, 87-89% is a B+, and so on.

Course Expectations

My role in this course is to provide you with a carefully chosen sequence of activities that can enhance your learning and thinking about educational technology. As such, I aim to be a *facilitator for your learning*, but ultimately, it is up to you to take the most out of the course. Additionally, given the discussion nature of this course and the variety of perspectives associated with educational technology, this is not a one-way course. I aim to learn from you just as I envision you will learn from your classmates and from me. But in order to make sure we can establish a mutually beneficial learning environment, there are a number of things I expect from you.

Weekly Readings and Discussion Questions

Due to the nature of the before and after guiding questions, **it is essential that you follow the instructions for each week's assignments and do them in the order presented.** As such, each week there will be a document on Canvas clearly laying out the steps for each assignment. Weekly guiding questions are due 24 hours before the associated class meeting. It is critical that I receive your submissions on time, so I can read them and adjust the next class accordingly.

Some of the readings may be difficult and may use technical language you are not familiar with. I expect you to look up words or concepts that you are not familiar with as needed. I have tried to select readings that are relatively accessible (both in terms of prior knowledge needed and in terms of language accessibility for English language learners). However, you may find that some readings are just too difficult to comprehend. If that is the case, please let me know (in person or via email), so I can adjust the readings as needed.

Participation

Your participation in class is essential. Answering the guiding questions online is necessary but not sufficient. The guiding questions should give you material to come to class ready to discuss and learn from your peers, but you must voice yourself. In order to encourage students to participate, I want to make sure you all see this class as a safe space where you are encouraged to share your thoughts, opinions, and questions. Even if other students disagree, they may still learn from your perspective, and you can learn from theirs. This quote from one of our readings summarizes how I want you to feel about this class:

The microworld is created and designed as a safe place for exploring. You can try all sorts of things. You will never get into trouble. You will never feel "stupid." It will never say a rude thing to you; it will never embarrass you; it will never fall to pieces or bite you or give you a low grade. You are totally safe in this little world. And yet while being safe, it is also designed to be discovery-rich in the sense that little nuggets of knowledge have been scattered around in it for you to find.

Your participation will be graded based on the amount of comments you make in class, the quality of the comments (e.g., showing an understanding or reflection on the readings and other student's comments), and active listening (e.g., not disengaging from class conversations and giving a chance to other students to speak). I will give you feedback on your participation midway through the course, so you know how to improve if needed.

Attendance

A prerequisite to participating is attendance. You are allowed to miss up to two class sessions (though you are encouraged to attend them all). Beyond two class sessions, every class you miss will reduce your grade by 5%--up to 20% if you miss six or more class sessions.

If you need to miss a class or cannot turn in an assignment on time for a justifiable reason, please email me at least 48 hours ahead of time, so I do not let that affect your grade and/or can offer you an extension. Of course, unanticipated events can sometimes cause you to miss a lecture or a deadline. In such cases, please email me as soon as possible, so I can take that under consideration.

Formative Assessments

While I will not use formal tests for grading, I may occasionally give ungraded "pop quizzes" in class as a formative assessment to help you and I better understand what you have learned.

Academic Integrity

You are expected to abide by [UCI's Academic Integrity Policy](#) at all times:

Academic misconduct, in its most basic form, is gaining or attempting to gain a grade, degree, or other academic accomplishment by any means other than through your own work. No student shall engage in any activity that involves attempting to receive a grade by means other than honest effort, and shall not aid another student who is attempting to do so.

Assignments and guiding question answers should be submitted in your own words and should not be copied from outside sources or other students. If you draw inspiration from another text, cite the text. “In your own words” does not mean changing words here and there to look different from someone else’s words; if you find yourself doing that, quote from the text directly. I recognize that different cultures have different attitudes towards plagiarism and attribution, so if anything is unclear, please reach out to me. You should maintain academic integrity because it is the right thing to do and because it supports your own learning. As such, I am not out to get you, but if I find that you are being dishonest or taking advantage of other students, then I will take action as appropriate.

Recordings

In order to respect the privacy of your peers, I ask that you do not audio or video record the class sessions.

Laptop Policy

I ask that you bring a device that can connect to the Internet (whether a mobile phone, tablet, or laptop) to class. If you do not have access to such a device or do not typically bring it to class, you can rent one from the library before class. These devices may be used to ask poll questions and other activities in class.

Other than for activities that require digital devices, you may use laptops or other forms of technology in class **if it helps facilitate your learning in some way**. If I find that technology is distracting at any point in time however, I may kindly ask you to put it away. Also, given the topic of the course, I may ask you at some point how technology is enhancing your learning, so be prepared to answer! :)

Wellness

Your overall well-being should take precedence over this course. Make sure you balance your curricular activities with taking care of your personal health and

wellness. If at any time, you feel that this course or your overall course load is causing you undue stress or affecting your well-being, please reach out to me or consider contacting the UCI Counseling Center (949-824-6457).

Accessibility

I strive to make the course accessible to students with varying needs. If you know in advance of the course that you will need specific accommodations, please let me know and/or contact the Disability Services Center (email: dsc@uci.edu, phone: 949-824-7494), so we can make sure you receive those accommodations. If at any point during the course, you feel some aspect of the course is not accessible, please reach out to me so we can rectify the situation.

Course Topics and Schedule

Orange: Overarching themes and concepts

White: Examining particular technologies

Purple: Project days

Day	Topic	Readings and Videos	Experiences	Assignments
Jan 7	Course Intro			
Jan 9	What is Educational Technology?	Reiser (2012) Ferster (2014) Watters (2018)		
Jan 14	Guiding Frameworks Categorization and Learning Theories	Taylor (1980) Selwyn (2017)		
Jan 16	Guiding Frameworks Assessing Impact	Cohen (1988) Keep (2019)		
Jan 21	Early Teaching Machines Skinner	Skinner (1965) Skinner (1958) <i>Skinner Video</i>		
Jan 23	Early Teaching Machines Pask and Bork	Watters (2015) <i>Pask Video</i> Bork (1993) Bork (1962)	Scientific Reasoning Series	

Jan 28	Intelligent Tutoring Systems Cognitive Tutors	Anderson et al. (1995) Pane et al. (2016) <i>Lumilo Video</i>	Carnegie Learning MATHia	
Jan 30	Intelligent Tutoring Systems ASSISTments and Khan Academy	<i>ASSISTments Videos</i> <i>Khan Video</i>	Assistments Khan Academy	
Feb 4	Intelligent Tutoring Systems ALEKS	ALEKS (2017) <i>ALEKS Video</i>	ALEKS	
Feb 6	Cognitive Psychology and Ed Tech	Resnick & Johnson (1988)		
Feb 11	Ed Tech Integration TPACK and Flipped Classrooms	Koehler & Mishra (2009) Talbert (2017)		Project Assigned
Feb 13	Ed Tech Design	(d.school, 2010)		
Feb 18	Tutoring Turtles Logo and Constructionism	Papert (1987a) Papert (1987b) <i>Papert Videos</i>	Logo	Paper Assigned
Feb 20	Tutoring Turtles Scratch	Resnick et al. (2009)	Scratch	
Feb 25	Connected Learning	Ito (2013) Ito (2015) Choose your own readings		
Feb 27	Project Work Day			
Mar 3	Ed Tech and Equity	Reich & Ito (2017)		Paper Due
Mar 5	The Future(s) of Ed Tech The Horizon Report	Horizon Report (2019)		
Mar 10	The Future(s) of Ed Tech Critical Perspectives	Watters (2014a) Watters (2014b) Selwyn (2015)		
Mar 12	Project Poster Session			

Mar 17
(Finals)

Project Poster Session

**Project
Report Due**