

## Summer 2015

# ITLS 6390 Technology & its Role in the Transformation of Education

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## Course Overview

This course explores the critical role of educational technology as one tool in the transformation of education.

As part of this course we will look broadly at technologies that can be used to support learning. We will start by thinking about the right questions to ask: How do technologies fit in larger systems of activity where people learn? Why does most educational software fail to change education? What does good educational software look like? When is technology useful and when not?

In answering these questions we will examine current thinking on and examples of computers in the formal and informal settings. We will ground our inquiries by examining first hand, several exemplary (and not so exemplary) pieces of educational software.

## Course Objectives

Upon completion of this course students will be able to:

- Describe the role of technology in facilitating educational change
- Apply theoretical principles and technological tools to facilitate educational change

## Course Format

Delivery of this course is online, through the Canvas learning management system. Each week of the course begins and ends on a Friday, although occasionally some assignments may have different deadlines.

You can expect the following from the instructor:

- Weekly overviews or mini-lectures that will offer you some background on the week's readings.
- Quick responses to requests to meet with the instructor by phone, in person, or in a virtual conference room (within 48 hours but more quickly on weekdays).
- Office hours by appointment (phone or video chat). Should there be multiple student requests (at least 1/3 of the class), a formal conference day and time will be scheduled and an announcement encouraging others to participate will be made on the course site.

Because this course is *online*, you will be doing a fair amount of independent reading, writing, and exploration; you need to be a self-motivated and independent learner. Please be aware that the mini-lectures and the course readings are complementary. You will not be able to succeed in this class if you only watch lectures or overviews and skip the readings.

Remember that one of the best ways you can learn is from your *peers*. For this reason I required peer reviews on assignments as well as participation in discussion forums. Remember that these requirements are there for your own learning. Reading each others' work and ideas can be an excellent resource for learning!

### **Asking Questions about the Material**

Questions are best asked on a *discussion board*. Many students will benefit from hearing your questions and others' responses. If you have a question, it is very likely that others do too. The discussion board is a great place for us to learn from each other, sharing questions, answers, experiences, perspectives. Questions regarding personal concerns may also be sent to the instructor via email, but most questions should be posted online.

## **Required Course Readings**

Christensen, C., Horn, M. B., & Johnson, C. W. (2011). *Disrupting class: How disruptive innovation will change the way the world learns* (2<sup>nd</sup> Ed.). New York: McGraw-Hill. ISBN: 978-0-07-174910-7

These textbooks are available through the USU bookstore and also through online retailers (where they are often less expensive).

**Other course readings** are available through links or pdfs online through Canvas.

Recommended text:

Pitler, H., Hubbell, E. R., & Kuhn, M. (2012). *Using technology with classroom instruction that works* (2<sup>nd</sup> ed.). Alexandria, VA: ASCD. ISBN: 978-1-4166-1430-2T

*Other students in past years have found this text helpful for practical ideas about how to use digital technology.*



## Course Overview

5/22	Week 1	Lesson Plan 1
5/29	Week 2	Reading Response 1
6/5	Week 3	Lesson Plan 2
6/12	Week 4	Reading Response 2
6/19	Week 5	Tech Choice Activity 1
6/26	Week 6	Lesson Plan 3
7/3	July 4	— <i>Independence day. No class deadlines</i> —
7/10	Week 7	Reading Response 3
7/17	Week 8	Tech Choice Activity 2
7/24	Week 9	Lesson Plan 4
7/31	Week 10	Reading Response 4
8/7	Week 11	Tech Choice Activity 3
8/14	Week 12	Final Reflections Due

## Class Due Dates

**Assignments** are always due on **Fridays** by 11:59pm.

**Peer Reviews and Comments** on peer's posts are due on **Tuesdays** by 11:59pm.

## Course Requirements

You are expected to check with the course website regularly and meet all posted deadlines. You are also expected to follow the order of the assignments listed in each learning module, unless otherwise posted.

### **Online participation (10%)**

Throughout the term, *you are strongly encouraged to participate in weekly discussion forums*, posting comments, asking questions, and responded to each others' posts. This is the primary way in which we have to learn from each other. I will periodically weigh in on the discussion but find that students can learn a great deal when they discuss ideas with each other. This cohort especially can learn much from each other given your diverse teaching and educational experiences.

### **Weekly Assignments (90%) – 15 points each**

#### **Lesson Plans (4)**

##### **Lesson Plan Directions:**

For each lesson plan assignment, you need to create or modify a lesson plan in which you use technology to accomplish a given goal. In each lesson, please have a section in which you describe how technology is used to transform the lesson. Specific requirements for each lesson plan follows. Please note: The lesson plan does not need to be for K-12 education. It could be for business training, military training, Sunday school, etc. If you are not a current K-12 teacher but want to use a K-12

lesson plan for your assignments, you may want to contact class members who are K-12 teachers, who may be able to let you use one of their lesson plans (but please do not use the same lesson for the same assignment).

**Lesson Plan Options:**

- Option 1: Create a lesson plan from scratch.
- Option 2: Modify an existing lesson plan

**Lesson Plan Format:**

Please submit the lesson plan in .doc or .rtf format through the canvas assignments section in the associated learning module. Make sure that the lesson is organized in the following sections:

1. Audience (who is in the class/training?)
2. Instructional objectives (what do you want the audience to be able to do at the end of instruction?)
3. Procedure (What does the instructor do first? Second? What do students do? Etc. This should include how technology is used)
4. What is the role of technology in this lesson plan (hint, it should be aligned with the goal discussed in the readings tied to the lesson plan) and how is its use transformative? Also, please indicate how you think the use of technology will enhance student learning and/or teacher performance.

The level of detail need not be exhaustive. However, there should be enough that a substitute could pick up the plan and know what to do.

**Lesson Plan Grading Criteria:**

My goal is not to assess the quality of the lesson plan on an absolute basis, because that is not the objective of the class. Rather, my goal is to assess the extent to which you used technology to **transform** educational practice. Having students type essays in Microsoft Word rather than write by hand is not necessarily transformative. But if you can justify why it is, then that is what I am looking for.

The assignment is worth up to 15 points.

- Up to 5 points can be earned for the audience, instructional objectives, and procedure (*bullet points 1-3 above*). If you have sufficient detail such that a substitute teacher could use it without problems, then you get the full 5 points.
- Up to 5 points can be earned for *bullet point 4* – the explanation of the transformative role of technology. 5 points is earned if the explanation is well-justified. 4 points is earned if the explanation is lacking an explanation of either how the use of technology is transformative or how this use will enhance student learning or teacher performance. 3 points is earned if the role of technology is explained but neither how such use is transformative nor how such use will enhance learning/performance is explained.

- Up to 5 points can be earned for your *peer review* of a classmate's lesson plan assignment. To earn the full points, your comments need to be constructive, and provide some good suggestions for improvement.

## **Lesson Plans:**

### **Lesson plan 1:**

1. Read intro and chapter 1 of Christensen et al. (2008).
2. Reimagine one lesson by implementing ideas about transformative users of technology inspired by the above reading.

### **Lesson plan 2:**

1. Read chapters 4-5 of Christensen et al. (2008).
2. Reimagine one lesson by implementing ideas about transformative users of technology inspired by the above reading.

### **Lesson plan 3:**

1. Read chapters 7-8 of Christensen et al. (2008).
2. Reimagine one lesson by implementing ideas about transformative users of technology inspired by the above reading.

### **Lesson plan 4:**

1. Read Kafai (2006) and Papert (1980).
2. Review Kafai & Burke (2014), Chapter 1
3. Reimagine one lesson by implementing ideas about transformative users of technology inspired by the above readings on constructionism to restructure a lesson and engage students. This lesson may or may not directly use digital technology but should involve creating something. Remember to keep the spirit of creativity and student-centeredness at the heart of the lesson.

## **Reading Responses (4)**

### **Reading response general description**

For these assignments, you will engage in critical reflection of the readings. In doing so, you will describe how you believe the readings apply to your school/ institution/ experience. Your response should not uncritically list the main points of the reading, but should provide evidence of understanding of the readings and your reaction to them. There may be readings that you do not agree with at all. That is fine and indeed welcome: in that case, please ensure that you explain why you do not agree with the reading. Please compose your reflection in .doc or .rtf format and submit through the appropriate assignment function in the corresponding learning module. Each reading response should be about 400-500 words (or the equivalent of a 1 page single-spaced, 12-point font).

### **Reading response grading criteria**

Each reading response is worth up to 15 points. You will receive 10 points if your response (a) is of the correct length, (b) shows critical reflection on and effective

application of the reading topics to your experience, and (c) addresses one or more of the questions to consider. Up to 5 points can be earned for your *comments on at least two classmates' reflections*. To earn the full points, your comments need to be constructive, provide some good suggestions for improvement, or respond substantively to your classmates' ideas.

## Reading Responses

**Reading response 1:** Christensen et al. (2008): Intro and chapters 1-3.

Make an attempt to respond to the ideas and narrative in a critical manner. This may include a short summary of the key points of the reading. Extend these points to your own ideas. Make argument(s). Use personal experiences and other relevant literature (empirical, if possible) to augment your position. Extend your thoughts to other relevant situations.

Some questions to consider:

- What are your initial impressions of the book?
- In what ways have you seen your own institution / school adapt to changes?
- In what ways have you shown the kind of flexibility required to adapt to a modifying educational landscape?
- How can technology mediate differences between student-centric, individualized approaches and standardization within curriculum?
- What is the take home message of this reading?

**Reading response 2:** Christensen et al. (2008): Chapters 4-6.

Make an attempt to respond to the ideas and narrative in a critical manner. This may include a short summary of the key points of the reading. Extend these points to your own ideas. Make argument(s). Use personal experiences and other relevant literature (empirical, if possible) to augment your position. Extend your thoughts to other relevant situations.

Some questions to consider:

- How does Christensen describe the “new commercial system?”
- What do you think this system might look like, in consideration of Christensen’s examples?
- How does this system fit within a broad view of pre-K (e.g., preschool) experiences?
- The author described some feasibility issues. What other feasibility issues do you sense either on a broad level or within the context of your subject matter/ level?
- What is the take-home message?

**Reading response 3:** Christensen et al. (2008): Chapters 7-9 and conclusion.

Make an attempt to respond to the ideas and narrative in a critical manner. This may include a short summary of the key points of the reading. Extend these points to your own ideas. Make argument(s). Use personal experiences and other relevant literature (empirical, if possible) to augment your position. Extend your thoughts to other relevant situations.

Some questions to consider:

- What are some of the take-home messages will stick with you (positively and/or negatively)?
- What makes the ideas realistic or unrealistic?
- How might you extend, or improve upon the thoughts and techniques described in the book(s)?

- How did your program in preservice teaching (or business training, or other undergraduate program) help prepare you for what you face(d) in your current position? In what ways did it not?
- If you did not have any pre-service teaching / business training/etc. experiences, what would have assisted you the most? What do you think are the most beneficial areas of research that assist you, or will assist instructors of the future, in your field?
- How should reform be handled on a local level, and in a broad sense? Do these ideas seem realistic?
- What does Christensen mean by the “tools of power and separation”?

**Reading response 4:** Kafai & Burke (2014) Chapters 1 & 7, Dikkers Chapter 2, Papert (1980), Kafai (2006), Blikstein (2013).

Make an attempt to respond to the ideas and narrative in a critical manner. This may include a short summary of the key points of the reading. Extend these points to your own ideas. Make argument(s). Use personal experiences and other relevant literature (empirical, if possible) to augment your position. Extend your thoughts to other relevant situations.

Some questions to consider:

- How is it different to use educational technology to support kids creating/making versus using/playing?
- Why do these authors advocate for kids creating with technology rather than just having adults make experiences to teach kids?
- What kinds of challenges arise when we engage kids with creating with digital technologies in schools and classrooms?
- What kinds of crafts background do you have (not just with paper or sewing but perhaps woodworking, scrapbooking...)
- Beyond just “making,” what are some of the social aspects of supporting kids’ creative work?

### Tech Choice Activities & Reflections (3)

Reading about technology only gets us so far. In these tech choice activities you get to actually explore and play with some technology and reflect on what it’s like to actually use it. Some of the listed activities are more on the popular, informal side of educational technologies and some are more structured and formal. *Caveat:* A few hours is hardly a full experience of what is possible with particular technologies, but hopefully this gives you some experience of what it’s like to be a user.

The expectation is that you will *review* the articles related to the technology, *play* (2-3 hours) with the technology and *blog* about your experiences in a short (400-500 word, single-spaced) reflection on what your experiences were like. Consider putting in some screenshots of what your experiences were like—this will help your classmates know what you’re talking about. Some questions you might answer include:

- *What was it like to actually use this particular technology?*
- *What surprised you? What did you enjoy? What did you find frustrating?*
- *How might you incorporate this into a classroom lesson?*

- What did you learn from the readings about best practices for using this technology in learning environments?

## Tech Choice Activity Options (Choose 3 of 7)

1. Playing with Virtual Manipulatives (VM): <http://nlvm.usu.edu>
  - Complete the VM Exploration Part 1 activity. (Do Part II if you're enjoying yourself! Consider doing this yourself and then doing it with a child in your family or your class.
  - Complete the Hopper activity.
  - Review Chapter 1 of the VM book.
  - Review the VM Sample Activity (it's about the Hopper activity).
  - Review Moyer-Packingham's paper on the Meta Analysis of Virtual Manipulatives. (Note: this paper is basically reviewing 88 studies on virtual manipulatives and saying when and under what conditions they work best).
    - Optional: There is a podcast of Patricia and colleague Arla talking about this study: [http://mathed.podomatic.com/entry/2014-02-04T16\\_34\\_01-08\\_00](http://mathed.podomatic.com/entry/2014-02-04T16_34_01-08_00)
  - How is the experience of doing math different with virtual manipulatives versus physical ones or even no manipulatives? How did the structure of the activities presented help you explore VM? What did you think of the hopper activity? How might you use this sort of thing in a class (math or otherwise)?
  
2. Play Gamestar Mechanic: <http://gamestarmechanic.com>
  - Play for 3+ hours on Gamestar Mechanic (follow quests for introductory game design).
  - Review the curriculum guide: <https://sites.google.com/a/elinemedia.com/gsmlearningguide/home>
  - What kinds of thinking skills are you learning while designing games? What do you think kids might learn from creating games in some of the ways described in the curriculum guide? What was fun about this activity? Could you imagine going further in it? How might you integrate this in a class?
  
3. Exploring a Science Education Virtual World: Whyville: [whyville.net](http://whyville.net)
  - Create an avatar on Whyville and spend a few hours playing Whyville science games. You must advance 3 levels in Breeding dragons, play the Skater Game & the Spin Game, and choose between some of the other games (like creating your daily meals in the Health setup, Observing at the Reef, Designing a virus?)
  - What kinds of things can you learn through these games? Are some games more useful than others? What would cheats for these games look like? How might you integrate these games with classroom instruction? Or how might you integrate a connected experience (like the costume contest) into your teaching?
  - Email Debbie with your username and she will give you 500 clams to dress your avatar (Debbie's username is oriahsiri). Post a screenshot of your avatar!
  - Review Chapters 1 & 7 of Kafai & Fields (2013). *Connected Play: Tween Life in a Virtual World*.

- Review Kafai et al (2014) Breeding Dragons
  - Watch the 5-minute interview with Debbie about cheating and the 15-minute TEDxUSU talk about Tween Activism in a Virtual World. Both are linked on Canvas.
4. Writing Stories on a Social Networking Forum: [Storybird.com](http://Storybird.com)
- Create 1-2 stories by assembling children's book illustrations and writing a story on Storybird. Share them with a few "IRL – in real life" friends, including Debbie (stareyes@gmail.com)
  - Read some of the more popular stories on the site and the kinds of comments that are written. How does this feedback influence the creator? What kind of feedback is the most helpful? How is writing online in a fanfiction site different from writing for a teacher in a class? How could we take advantage of either the technological design of fanfiction SNF (or DIY based SNF), the social structure for feedback and reviews, or the interest-driven nature of the writing in classes? (Think outside the box).
  - Review Grimes & Fields (2012).
  - Review Black (2009).
  - Review Lammers, Magnifico, & Curwood (2014).
5. Creating Interactive Media with Scratch: [scratch.mit.edu](http://scratch.mit.edu)
- Following some tutorials, create a simple Scratch project. Perhaps have a couple of characters talk to each other, or create some fun actions on screen.
    - Tutorials are here at the top of the page:  
<http://scratch.mit.edu/help/>
    - There's also a starter guide
  - Check out some of the most viewed or featured Scratch projects on the homepage. What kinds of things might kids learn from creating and sharing these projects? From looking at others' work, seeing inside, and leaving comments?
  - Review Brennan & Resnick (2013).
  - Review Fields, Vasudevan, & Kafai (in press).
  - Review Kafai & Burke (2014) Chapter 4.
6. Create an E-Textile (i.e., light-up birthday card and light-up bracelet)
- ***Email Debbie for supplies at least 2 weeks in advance with an address she can ship to (1 week for her to mail you supplies, 1 week for you to make the project)***
  - Create a copper circuit project and a small bracelet. (See instructional manuals linked on Canvas).
  - What was it like to use technology to make something tangible? What was exciting, frustrating, fun, confusing? What kinds of mistakes did you make? What kinds of things were you learning? Who did you show your products to? What were their responses?
  - Review Textile Messages Chapters 1 & 6.
  - Review Fields & King (2014).
7. Play Minecraft
- *Play the Minecraft demo (or actual, if you want to purchase it) version for the full amount of time allowed. Option to play in Survival or Creative modes.*

- What was it like to play on Minecraft? What did you build, what did you have to learn? What was exciting, frustrating, fun, confusing? What kinds of mistakes did you make? What kinds of things were you learning? How might you apply this to various learning situations?
  - Review Dikkers Chapter 3 for guidance on playing (have this by your side!).
  - Review Dikkers Chapter 7.
  - Choose one other Dikkers chapter to review (4, 5, etc. ).
8. Play a popular video game (requires instructor approval for game) or Play Radix
- Watch Sebastian Deterding's keynote talk from Games + Learning + Society 2012 (linked in Canvas).
  - Review Kurt Squire (2012). *Video games and learning: Teaching and participatory culture in the digital age*. (Chapters 1& 6).
  - Review Tim Saunders' description of his own gamified (non-technical) classroom teaching: <https://ravsak.org/games-we-play-leveraging-gameful-learning>
  - Suggested games include: Civilization 3, 4, or 5; Sim City; the Sims; Little Big Planet; any console/computer role-playing game; any console/computer first person shooter; adventure games... [Note: most casual games do not count (i.e., Angry Birds, Flappy Bird, etc.)]

### **Grading scale**

There is no curve for the class. Grades will be assigned based on the scale below, with your final grade rounded to the nearest tenth of a percentage point.

<b>Grading scale</b>	
A	93 – 100%
A-	90 – 92.9%
B+	87 – 89.9%
B	83 – 86.9%
B-	80 – 82.9%
C+	77 – 79.9%
C	73 – 76.9%
C-	70 – 72.9%
D+	67 – 69.9%
D	63 – 66.9%
D-	60 – 62.9%

### **Resubmission Policy**

Resubmission of assignments on which you lost points is possible by two weeks from the date I submit feedback, or Friday, **July 31**, whichever comes first. You only get to resubmit once per assignment. You may only resubmit if your original submission is complete (i.e., if you submit a partial lesson plan by the original due date, you do not get a chance to resubmit). *If the original submission was late or incomplete, then you cannot resubmit*, barring instructor permission. You may only do this for up to two assignments.

### **USU Criteria for Make-Up of Missed Assignments or Projects**

Students will be allowed to make up assignments or projects at full credit only if they meet one of the following criteria:

- Incapacitating illness prevents a student from attending classes for a minimum period of two weeks,
- A death in the family,

- Financial responsibilities requiring a student to alter a schedule to secure needed employment,
- Change in work schedule as required by employer (with verification) or,
- Other emergencies deemed appropriate by the instructor.

If there are extenuating circumstances, a student may petition the instructor for time beyond the deadline. Documentation of the circumstances cited to justify the make-up is required.

## **Academic Integrity - “The Honor System”**

Each student has the right and duty to pursue his or her academic experience free of dishonesty. The honor system is designed to establish the higher level of conduct expected and required of all Utah State University students.

*The Honor Pledge:* To enhance the learning environment at USU and to develop student academic integrity, each student agrees to the following Honor Pledge: “I pledge, on my honor, to conduct myself with the foremost level of academic integrity.” A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the USU community;
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and
- Is a welcomed and valued member of Utah State University

## **Plagiarism**

As stated in the USU Student Code, plagiarism is “the act of representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes using materials prepared by another person or by an agency engaged in the sale of term papers or other academic materials.”

Plagiarism is harmful both for the author of the original work and for the plagiarizer. Any individuals involved in plagiarizing work will receive an automatic fail for the assignment or project and will be immediately reported to the university administration.

## **Persons with Disabilities**

Students with documented disabilities who are in need of academic accommodations should immediately notify the instructor and/or contact the Disability Resource Center at (435) 797-2444 and fill out an application for services. Accommodations are individualized and in accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1992.

## Incompletes

In accordance with University policy, incompletes are not to be given for poor performance. There will be no incompletes given except for conditions beyond the student's control, including:

- Incapacitating illnesses that prevent a student from attending classes for a period of at least two weeks
- A death in the immediate family
- Financial responsibilities requiring a student to alter course schedule to secure employment
- Change in work schedule as required by an employer

Other, *unexpected* emergencies may be considered on a case-by-case basis. Regardless of the cause for the incomplete, appropriate documentation of the circumstances is required for an extension to be considered.

## Written Assignments

Unless otherwise advised in advance, all written assignments are to be completed in the following format:

1. MS Word file with **your name** and assignment type in the file name.
2. 8.5 x 11, single-spaced.
3. Times or Times New Roman, 12 pt. font, **your name** on first page.
4. Submitted by electronic copy through email.

### **ALL ASSIGNMENTS MUST BE ORIGINAL WORK**

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>. For educational research, the most popular database is ERIC (*Education Resources Information Center*). This can be found online at: <http://www.eric.ed.gov/>.

### **10 Pointers for Good Academic Essay Writing**

1. A good general rule to follow in the structure of your papers is “tell them what you’re going to say, tell them, then tell them what you said”. In the introduction, provide a roadmap of what you are going to say in the paper. It will help your own organization and organizes the paper for the reader to follow your arguments along.
2. Be explicit about your questions, thesis, perspective and put it up front in your introduction. It’s best not to leave your reader(s) guessing what the paper is about.
3. Provide signposts or points to your roadmap, e.g., “in this section, the following point...” or “to summarize” or “having covered the...we will now turn to...”
4. Section titles are also good as signposts but be sure that the content of the section reflects the title of the section.

5. Use transition sentences that build from previous information and connects to the next.
6. Explain terms. Don't put them in quotes and assume the reader will know what you mean. Try very hard not to make assumptions about what the reader knows even though you know who the reader is and he/she might be an expert in your topic. The point is for you to demonstrate that you know the material.
7. Be consistent with your bibliographic referencing style.
8. Be careful not to over-generalize, e.g., "many theorists..." when you are only referencing one study.
9. Don't assume everyone sees or agrees with your perspective, you need to convince the reader of your perspective.
10. Summarize in the conclusion, what you wrote about in the body of the paper. Tie your conclusions back to your original question...how have you proven, answered, shown, presented information that addresses it. Don't introduce new information in the conclusion. It detracts from the cohesiveness.