

ITLS 6540: Learning Theory

Fall 2015, Tuesdays, 9-11:30 AM EDUC 282

Instructor and Teaching Assistant

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Course Description

Instructional Technologists and Learning Scientists alike are centrally concerned with how to design for and support *learning*. This course provides an overview of major theoretical perspectives that attempt to describe how learning works. It also explores some contemporary learning and learning environment issues of interest to instructional technologists and Learning Scientists. This syllabus is for the face-to-face section.

Course Objectives

By the end of this course, students should be able to:

- Differentiate between the behaviorist, cognitivist, and sociocultural paradigms of learning.
- Describe several basic concepts and findings from cognitive research as well as explain how those concepts apply to the design and implementation of learning environments.
- Articulate some specific strategies or frameworks for designing instruction that are informed or motivated by contemporary research.
- Compare between at least two different theories of organizational or professional learning.

Required textbooks and materials

- Martinez, M. E. (2010). *Learning and cognition: The design of the mind*. Upper Saddle River, NJ: Merrill.
- Sawyer, R. K. (Ed.). (2014). *The Cambridge Handbook of the Learning Sciences*: Cambridge University Press. Second Edition.

These textbooks are available through the USU bookstore and also through online retailers (where they are often less expensive). Throughout the course, the books will be abbreviated using the following: L&C – *Learning and Cognition*, CHLS – *Cambridge Handbook of the Learning Sciences*.

Additional readings may be required and will be made available on the course website or through the library course reserves.

Course Format

The course meets face-to-face weekly for on-campus students. There will also be a course website through which you will submit your assignments. The course is divided into modules that have the same content for online students.

The class meetings will primarily involve active group discussion. Therefore, it is *critical* that you do the course readings prior to the class meeting.

Course Requirements

Reading-guide responses.

Throughout the semester, you will need to complete 10 **reading guides**. Each reading guide is a set of challenging questions about the readings or the main ideas for the week. Each reading guide is completed and submitted by a *pair* of students. During the first week, you will find a **reading partner** for the semester with whom you will communicate weekly about the material. Together, you will submit *one* set of reading guide responses. One reading partner will do assignment submission from their Canvas account. Reading guides must be submitted by 2PM Mountain time on Tuesday of the week specified.

Reading guide responses are all short-answer format and each question should require a minimum of a few sentences up to a few paragraphs in response. These are designed to help you reflect about the material and aid in your preparation for midterm and final papers.

Assignments

There are four additional assignments required during this course. They include:

- **Presentation.** In pairs, you will present a summary of one of the articles from the week *Current Cognitive Research on Learning*. The pairs for this assignment do not need to be the same as in your reading partnership. Both presentation partners will receive the same grade. For online students, this will involve uploading a presentation that you have jointly prepared.
- **Community of Practice Essay.** Individually, you will write a 1-2 page essay where you try to understand a particular ‘community of practice’
- **Abstract.** Individually, you will write an abstract for one of the two chapters assigned in the *Collaborative Learning* week (either 20 or 24). The abstract should be up to 200 words (not including title or your name), and it should summarize the main ideas and rhetorical structure of the chapter. You will be marked down if your summary is too long.
- **Presentation or summary.** Individually, you can write a coherent and interesting 1-3-page summary of one of the readings assigned during the week titled *Learning by professionals*, OR you and a partner can prepare a 15-20 minute presentation on one of the week’s readings. If you are presenting, you do not need to submit a written summary, but you will need to turn in your slides. Only one pair will be selected to present for each

of the readings, and those must be determined and approved by the instructor the week before. Each member of the pair will receive the same grade.

Midterm Assessment

You have one midterm Assessment.

In no more than 500 words, clearly describe and distinguish between the Behaviorist, Cognitivist, and Sociocultural perspectives of learning and describe what each may have to offer you as a designer of learning experiences.

Final Paper

You have one final paper that you must complete and submit individually. The topic is stated below so that you can prepare ahead of time as we cover the material throughout the course.

Is the contemporary work we have explored related to learning (most topics covered from 10/13-12/1) adding in a substantive way to our understanding of how to design learning environments? What more needs to be done? Defend your position. As appropriate, provide specific examples.

The paper should be between 5-7 pages, double-spaced and follow APA style for citations. Reference lists at the end do not count toward the page-length requirements or limits.

Class Schedule

IC = Submission or presentation to be done in class, AS = Submission via Canvas Assignment Submission System, 2x = Paired submission, 1x = Individual submission

| Unit | Topics | Readings | Deadlines |
|-------|--|--|---|
| 8/31 | <i>0. Introduction</i> | n/a | |
| 9/8 | <i>1. Behaviorism</i> | L&C Ch. 1-2 | 9/8: Behaviorism Reading Guide, AS, 2x |
| 9/15 | <i>2. Cognitive Architecture</i> | L&C Ch. 3 | 9/15: Cog. Arch. Reading guide, AS, 2x |
| 9/22 | <i>3. Knowledge Representation</i> | L&C Ch. 4, pp. 92-109 | 9/22 Knowledge Rep. Reading Guide, AS, 2x |
| 9/29 | <i>4. Cognitive Development</i> | L&C Ch. 7, pp. 197-212 | 9/29: Cog. Dev. Reading Guide, AS, 2x |
| 10/6 | <i>5. Motivation</i> | L&C Ch. 6, pp. 157-178 Dweck (2007) | 9/20: Motivation Reading Guide, AS, 2x |
| 10/13 | <i>6. Current Cognitive Research on Learning</i> | Pick two: • Dunlosky, Rawson, | 10/13: Class Presentation on Current Learning Literature, |

| Unit | Topics | Readings | Deadlines |
|-------|---|--|--|
| | | Marsh, Nathan, & Willingham (2013) <ul style="list-style-type: none"> • Clement (1993) • Spencer, Steele, & Quinn (1999) • Palincsar & Brown (1984) • Rittle-Johnson (2006) • Okita, Bailenson, & Schwartz (2007) • Schwartz & Bransford (1998) • Chi, de Leeuw, Chiu, & Lavancher (1994) | IC, 2x |
| 10/20 | <i>7. Situated Cognition/Sociocultural Approaches</i> | Brown, Collins, & Duguid (1989) Lave & Wenger (1991) | 10/20: Sociocultural Reading Guide, AS, 2x |
| 10/27 | <i>8. Vygotsky, Mediation, & Artifacts</i> | Vygotsky Ch. 2, 3, 6 | 10/27: Vygotsky Reading Guide, AS, 2x |
| 11/3 | <i>9. Cognition, Situativity, and the Learning Sciences</i> | CHLS Ch. 2 AND CHLS Ch. 6 Cog Apprenticeship OR Ch.7 Learning in Activity | 11/3: Midterm Assessment due, AS, 1x 11/3: CoP Essay, AS, 1x |
| 11/10 | <i>10. Project-based learning</i> | CHLS Ch. 14 Cognition and Technology Group at Vanderbilt (1990) | 11/10: Project-Based Learning Reading Guide, AS, 2x |
| 11/17 | <i>11. Constructionism</i> | Kafai (2006) Harel (1990) | 11/17: Constructionism Reading Guide, AS, 2x |
| 11/24 | <i>12. Learning by Professionals</i> | Williams (1992) Brown & Duguid (1991) | 11/24: Professional Learning 3-page Reading Summary, AS, 1x OR 11/24: Class Presentation on Professional Learning, IC, 2x |
| 12/1 | <i>13. Collaborative Learning</i> | CHLS Ch. 20 & 24 | 12/1: Abstract for CHLS Ch 20 or 24, AS, 1x |
| 12/8 | <i>14. Metacognition & Scaffolding</i> | CHLS Ch. 3 & 4 Re-read CHLS Ch. 2 Optional selection of Organizational Learning Readings for those doing Corporate Training | None, special in-class activity instead |
| 12/15 | <i>FINAL EXAM</i> | n/a | 12/15: Final Paper, AS, 1x |

Grading

Your final grade will be computed based on the following percentages. 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. Further below are a few notes about grading policies and procedures.

Grade Weightings

| | |
|----------------|-----|
| Reading Guides | 40% |
| Assignments | 15% |
| Midterm Paper | 15% |
| Final Paper | 20% |
| Participation | 10% |

| Grading scale | |
|---------------|------------|
| 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% |

Reading guides and reading partners

Each week, you are expected to communicate and collaborate with a reading partner you choose at the beginning of the semester. You may work with your reading partner in any way you see fit as long as you are *collaborating* and *helping each other*. For example, you might set up a weekly meeting in your office or at the library, email each other regularly, have regular phone calls, or post messages to each other in a private discussion board. You should consider doing a combination of these, not just one.

Reading guides will be graded based on a randomly selected subset of questions in your reading guide. If you wish for feedback on a specific question, you may make a request for the instructor to provide comments. However, if that question was not randomly selected to be graded, it will not count toward your assignment grade.

Your two lowest reading guide grades will be dropped. If you are especially busy one week, you can take a grade of zero and get that grade dropped when your final grade is calculated.

Late submissions

Reading guides are not accepted late. You may submit your summaries or abstracts up to 1 week late with a 50% penalty on your total possible grade. For example, for an assignment worth 20 points, 10 points will be subtracted off of your total grade if it is submitted within 1 week after the deadline. **You may not submit any assignment more than 1 week late.** Late midterm or final papers will not be accepted. Late presentations are not allowed.

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.

Additional readings

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

Brown, J. S., & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science*, 2(1), 40-57.

Chi, M. T. H., de Leeuw, N., Chiu, M.-H., & Lavancher, C. (1994). Eliciting self-explanations improves understanding. *Cognitive Science*, 18, 439-477.

Clement, J. (1993). Using bridging analogies and anchoring intuitions to deal with students' preconceptions in physics. *Journal of Research in Science Teaching*, 30(10), 1241-1257.

Craig, S. D., Chi, M. T. H., & Van Lehn, K. (2009). Improving classroom learning by collaboratively observing human tutoring videos while problem solving. *Journal of Educational Psychology, 101*(4), 779-789.

Dweck, C. S. (2007). The secret to raising smart kids. *Scientific American Mind, 18*(6).

Kafai, Y. B. (2006). Constructionism. In R. K. Sawyer (Ed.). (2006). *The Cambridge Handbook of the Learning Sciences* (pp. 35-46). New York: Cambridge University Press.

Harel, I., & Papert, S. (1990). Software design as a learning environment. *Interactive learning environments, 1*(1), 1-32.

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

Okita, S. Y., Bailenson, J., & Schwartz, D. L. (2007). The mere belief of social interaction improves learning. In D. S. McNamara & J. G. Trafton (Eds.), *Proceedings of the 29th Annual Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Palincsar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction, 1*(2), 117-175.

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

Schwartz, D. L., & Bransford, J. D. (1998). A time for telling. *Cognition and Instruction, 16*(4), 475-522.

Williams, S. M. (1992). Putting case-based instruction into context: Examples from legal and medical education. *Journal of the Learning Sciences, 2*, 367-427.

Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes*. Harvard university press.