INST 6540: Learning Theory

Fall 2012, Tuesdays, 9-11:30 AM EDUC 282 (on-campus)
Fall 2012, Online through Canvas (online)

Instructor and Teaching Assistant

Professor: Victor Lee
Office: EDUC 227
Office Hours: Wednesdays, 2:30-4PM (on-campus) and by appointment (online and on-campus)
Phone: 435-797-7562
E-Mail: victor.lee@usu.edu

Teaching Assistant: Nam Ju Kim
Office: EDUC 225
E-Mail: namju1001@gmail.com

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, and it also explores some contemporary learning and learning environment issues of interest to instructional technologists and the field of Learning Sciences. This course is offered to face-to-face and online students simultaneously.

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 and 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.). (2006). *The Cambridge Handbook of the Learning Sciences*: Cambridge University Press.

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. Online students will also submit their assignment in the course site. Online and face-to-face students are welcome to and invited to post in the discussion boards.

For on-campus 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. For online students, it is important to post discussion comments and questions in the online discussion boards.

There are also a few activities you must complete by a set date prior to certain readings. Those activities and deadlines will be announced in class or on the Canvas site.

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 three 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.
- **Abstract.** Individually, you will write an abstract for one of the two chapters assigned in the *Cognition, Situativity, and the Learning Sciences* week. 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 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 10/9-11/27) 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 in APA style. 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
8/28	0. Introduction	n/a	
9/4	1. Behaviorism	L&C Ch. 1-2	9/4: Behaviorism Reading Guide, AS, 2x
9/11	2. Cognitive Architecture	L&C Ch. 3	9/11: Cog. Arch. Reading guide, AS, 2x
9/18	3. Knowledge Representation	L&C Ch. 4, pp. 92-109	9/18: Knowledge Rep. Reading Guide, AS, 2x
9/25	4. Cognitive Development	L&C Ch. 7, pp. 197-212	9/25: Cog. Dev. Reading Guide, AS, 2x
10/2	5. Motivation	L&C Ch. 6, pp. 157-178 Dweck (2007)	10/2: Motivation Reading Guide, AS, 2x
10/9	6. Current Cognitive Research on Learning	Pick one: • Craig, Chi, & Van Lehn (2009) • Clement (1993) • Mayer (1997) • Palincsar & Brown (1984) • Rittle-Johnson (2006) • Okita, Bailenson, & Schwartz (2007) • Schwartz & Bransford (1998) • Chi, de Leeuw, Chiu, & Lavancher (1994)	10/9: Class Presentation on Current Learning Literature, IC, 2x
10/16	7. Situated Cognition/Sociocultural Approaches	Brown, Collins, & Duguid (1989) Lave & Wenger (1991)	10/16: Sociocultural Reading Guide, AS, 2x
10/23	8. Cognition, Situativity, and the Learning Sciences	CHLS Ch. 1 AND CHLS Ch .4 OR CHLS Ch. 6	10/23: Abstract for CHLS Ch 4 or 6, AS, 1x
10/30	9. Dynamic Memory and Learning	Schank, Fano, Bell, & Jona (1993/1994) CHLS Ch. 14	10/30: Midterm Assessment due, AS, 1x 10/30: Dynamic Memory Reading Guide, AS, 2x
11/6	10. Project-Based Learning	CHLS Ch. 19 & 20 Cognition and Technology Group at Vanderbilt (1990)	11/6: Project-Based Learning Reading Guide, AS, 2x
11/13	11. Constructionism	CHLS Ch 3	11/13: Constructionism Reading Guide, AS, 2x
11/20	12. Learning by	Williams (1992)	11/20: Professional Learning 3-page Reading

	Professionals	Brown & Duguid (1991)	Summary, AS, 1x OR 11/20: Class Presentation on Professional Learning, IC, 2x
11/27	13. Technology-supported Learning	CHLS Ch. 8 & 24	None (Thanksgiving week).
12/4	14. Organizational and Workplace Learning	Dochy, Laurijssen, & Kyndt (2011) Gijbels & Spaenhoeven (2011)	None, special in-class activity instead
12/11	FINAL EXAM	n/a	12/11: 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

You may submit your reading guides, summaries, or abstracts up to 1 week late with a 50% penalty on your total possible grade. For example, for a reading guide worth 20 points, 10 points will be subtracted off of your total grade if it is submitted within 1 week after the deadline. **<u>You may not submit any assignment more than 1 week late.</u>** 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.

Dochy, F., Laurijsen, J., & Kyndt, E. (2011). Systems thinking and building learning organizations: P. Senge. In F. Dochy, D. Gijbels, M. Segers & P. Van den Bossche (Eds.), *Theories of Learning for the Workplace: Building blocks for training and professional development programs* (pp. 87-114). New York: Routledge.

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

Gijbels, D., & Spaenhoven, R. (2011). On organisational learning: C. Argyris. In F. Dochy, D. Gijbels, M. Segers & P. Van den Bossche (Eds.), *Theories of Learning for the Workplace: Building blocks for training and professional development programs* (pp. 115-124). New York: Routledge.

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

Mayer, R. E. (1997). Multimedia learning: Are we asking the right questions? *Educational Psychologist, 32*(1), 1-19.

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 coprehension-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.

Schank, R. C., Fano, A., Bell, B., & Jona, M. (1993/1994). The design of goal-based scenarios. *The Journal of the Learning Sciences, 3*(4), 305-346.

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.