Fall 2024 ITLS-7025-001 Syllabus

Course Information

ITLS 7025—Foundations in Instructional Technology and Learning Sciences[1]

Wednesday, 9:00 a.m. - 11:30 a.m.

EDUC 215C

Instructor Information

Instructor: David F. Feldon, Ph.D.

Office: EDUC 213 or CEHS Associate Dean's Office

Phone: (435) 797-0556

Office Hours: By appointment

E-mail: david.feldon@usu.edu

Required Texts

Required readings available via Canvas.

Purpose

This course is intended to engage doctoral and other advanced students in Instructional Technology and Learning Sciences in rigorous examination of methodological approaches, theoretical constructs, and topic areas that are of great historical import or are currently being seriously explored in the areas of Instructional Technology and Learning Sciences. It is also a space to work more on additional discipline-specific research skills.

Objectives

Students in this course will learn to:

1. Identify theory or theoretical perspectives in a given research study
2. Explain the epistemological underpinnings and approaches associated with relevant methodologies
3. Describe current research and historical debates related to Instructional Technology or Learning Sciences and offer recommendations for promising directions for future research.
4. Demonstrate relative improvement in their individual ability to conceptualize, describe, or present scholarly research
5. Articulate their own theoretical framework, research questions, methods, and sampling strategies in the form of a written research proposal.

Expectations of Students	· Actively engage with the course material and find ways to make it relevant to your professional and academic needs and goals · Challenge statements that are confusing or with which you disagree · Engage in class dialogue with thoughtfulness, openness, and respect · Attend class having read and taken notes on the readings due · Work to develop your writing and speaking skills throughout the course
Expectations of Instructor	· Available during and outside of class time to address questions and concerns · Will respond to messages and emails within 48 hours · Provide clear explanations of research principles and methodologies · Conduct an intellectually challenging and rigorous course
Absences	**If you find it absolutely necessary to be absent from class because of illness or an emergency, you are responsible to master *all* information presented during your absence. Do not ask the instructor to repeat important information—identify a classmate who will help you.** **It is important to understand that the purpose of the lectures is not to explain the readings**. While time will be spent on clarification, most of the material presented in class will serve as an extension of relevant ideas and issues. As such, attendance and participation in class will be necessary aspects of the learning process, in addition to the readings. Consequently, absences should be avoided to prevent you from falling behind and missing information for which you will be responsible.
Incompletes	Please note that I only give incomplete grades in rare and exceptional cases.
Administrative Issues	All administrative issues will be handled according to established USU and CEHS policies.
Special Needs	Any student requiring accommodations based on a **disability** is required to register with the Office of Student Disability Services each semester. A letter of verification for approved recommendations can be obtained through OSD.

Grading

Papers more than one week late will not be accepted unless a student has experienced an extreme emergency (contact the instructor). A paper received from one day to seven days late will receive a one full letter grade reduction.

Discussion facilitations cannot be made up. Only in the most extreme individual circumstances will the instructor modify this policy.

Keep in mind a course grade of "F" will be given to any student who submits a term paper that is not original (i.e. when any part of the paper is written by someone else, plagiarized and/or purchased).

Course Requirements

	Percent of Grade
Class Participation and Minor Assignments	10%
Discussion Facilitation	20%
Article Critique	20%
Literature Review/Research Proposal	50%

Assignments

Discussion Facilitation:

On a date selected during the first class meeting, you and a partner will choose one class to **take the lead on discussion facilitation** for all assigned readings. The purpose of the assignment is not to provide a summary. Instead, you must understand the collective readings at a deep level to identify the central issues and controversies and formulate driving questions to serve as the focus of the discussion for that day. The instructor will provide support as necessary both prior to and during the facilitation to ensure a successful interaction for the class as a whole. Credit is given on the basis of evident preparation and comprehension of core issues in the readings discussed, not on the success of the class interaction itself. Credit/No Credit.

Critique:

Select a published empirical study in your area of interest and critique it applying concepts from the course. The critique will be 2-3 pages, single-spaced. The article critiqued must be included with the critique submission. The critique will also be delivered as a formal presentation in class. Graded.

Literature Review/Research Proposal:

A research proposal or literature review of **approximately 12 single-spaced pages** in length (excluding references) will be required in this course. This is a departure from APA format, but please make the adjustment. You can choose any empirical research topic within the realm of instructional technology or learning sciences for your proposal that is appropriate to serious academic inquiry. If you are doing a research proposal, the paper will entail a literature review sufficient to justify the research questions/hypotheses and variables identified. The topic/research question+methodology selected **must be approved by the instructor in an email**. See the course schedule for approval timeline. Graded.

Structure of the Paper

When you have selected your research question and method, send a one paragraph description of the paper you are proposing to write to david.feldon@usu.edu. I will review your proposal and get back to you with either approval or a suggested revision (I do not want to control your interest, only to keep you out of trouble). Do not start your review until I have returned e-mail with my approval of your topic. Keep this e-mail and submit a copy of it with your paper.

Grading

Papers more than one week late will not be accepted unless a student has experienced an extreme emergency (contact the instructor). A paper received from one day to seven days late will receive a one full letter grade reduction.

Presentations cannot be made up. Only in the most extreme individual circumstances will the instructor modify this policy.

Any case involving academic dishonesty or any other violation of the Honor Code will be referred to the University for further action.

Date	Topic	Assignment Due
August 28	Introduction Course Expectations Course Structure Method vs. Methodology	
September 4	Theories vs. theories	Berliner (2002); Feldon (2012); Maxwell (2004); Nuthall (2005)
September 11	Conceptual Frameworks Operational Definitions and Framing Research Questions	Ravitch & Riggan (2012, chs. 1-3); Sutton & Staw (1995)
September 18	NO CLASS	
September 25	Situated Learning vs. Cognition Facilitator: Idris	Anderson, Reder, & Simon (1996); Greeno (1997); Sfard (1998)
October 2	Technology and Learning Facilitator: Sariah Critique: Constructivism vs. Instructivism	Clark (1994); Clark & Estes (1998); Kozma (1994a,b)
October 9	Facilitator: Sina Critique: Defining the Learning Sciences	Kirschner, Sweller, & Clark (2006) +KSC-replies; De Jong et al. (2023); Sweller et al. (2023)
October 16	Facilitator: Ana Critique: Sina Emergent Missions in the Learning Sciences	Kolodner (2023-response to Lee); Lee (2022); Nathan & Alibali (2010); Pea & Linn (2020) McKenney (2018); Philip, Bang, & Jackson (2018); Tofel-Grehl (2023)
October 23	Facilitator: Critique: Ana	Email research question and general literature review type for paper.

	Design-Based Research	The Journal of Learning Sciences Special Issue (Barab & Squire, 2004; diSessa & Cobb, 2004; Dede, 2004; Kelly, 2004); Anderson & Shattuck, 2012; Sandoval (2014); Vakil et al. (2016)
October 30	Facilitator: Shaf Critique: Idris Interviews and Observations	
November 6	Facilitator: Kelly Critique: Kelly Co-Design	diSessa (2007); diSessa & Sherin (1998); Hallden, Haglund, & Stromdahl (2007)
November 13	Facilitator: Critique: Shaf	Cognition & Instruction Special Issue (Goldman et al., 2022; Ko et al., 2022; Philip et al., 2022; Lee et al., 2022; Schneider Kavanagh et al., 2022; Tabak, 2022)
November 20	NO CLASS--ASHE	
November 27	NO CLASS--THANKSGIVING	
December 4	Roundtable paper presentations	Roundtable paper presentations
December 11	NO CLASS	Final Paper due via email by midnight

Required References

Readings

Readings will be posted to course Canvas site and available in PDF format for download.

Anderson, J. R., Reder, L., & Simon, H. A. (1996). Situated learning and education. *Educational Researcher,* 25(4), 5-11.

Barab, S., & Squire, K. (2004). Design-based research: Putting a stake in the ground. *The Journal of the Learning Sciences, 13*(1), 1-14.

Berliner, D. (2002). Educational research: The hardest science of all. *Educational Researcher, 31*(8), 18-20.

Clark, R. E. (1994). Media will never influence learning. *Educational Technology Research and Development, 42*(2), 21-29.

Clark R. E. & Estes, F. (1998) Technology or Craft: What are we doing?

Educational Technology, *38*(5), 5-11.

Collins, A., Joseph, D., & Bielaczyc, K. (2004). Design research: Theoretical and methodological issues. *The Journal of the Learning Sciences, 13*(1), 15-42.

Dede, C. (2004). If design-based research is the answer, what is the question? A commentary on Collins, Joseph, and Bielaczyc; diSessa and Cobb; and Fishman, Marx, Blumenthal, Krajcik, and Soloway in the JLS special issue on design-based research. *The Journal of the Learning Sciences, 13*(1), 105-114.

De Jong, T., Lazonder, A., Chinn, C., Fischer, F., Gobert, J., Hmelo-Silver, C., et al. (2023). Let's talk evidence – the case for combining inquiry-based and direct instruction. *Educational Research Review*. https://doi.org/10.1016/j.edurev.2023.100536

diSessa, A. (2007). An interactional analysis of clinical interviewing. *Cognition & Instruction, 25,* 523-565.

diSessa, A. A., & Cobb, P. (2004). Ontological innovation and the role of theory in design experiments. *The Journal of the Learning Sciences, 13*(1), 77-103.

diSessa, A., & Sherin, B. (1998). What changes in conceptual change? *International Journal of Science Education, 20*, 1155-1191.

Feldon, D. F. (2012). Validity of learning. In N. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 3381-3383). New York: Springer.

Goldman, S., Hmelo-Silver, C., & Kyza, E. (2022). Collaborative design as context for teacher and researcher learning: Introduction to the special issue. *Cognition & Instruction, 40,* 1-6.

Greeno, J. G. (1997). On claims that answer the wrong questions. *Educational Researcher, 26*(1), 5-17.

Halldén, O., Haglund, L., & Strömdahl, H. (2007). Conceptions and contexts: On the interpretation of interview and observational data. *Educational Psychologist*, *42*, 25-40.

Kelly, A. (2004). Design research in education: Yes, but is it methodological? *The Journal of the Learning Sciences, 13*(1), 115-128.

Kirschner, P., 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.

Ko, M., Hall, A., & Goldman, S. (2022). Making teacher and researcher learning visible: Collaborative design as a context for professional growth. *Cognition & Instruction, 40,* 27-54.

Kolodner, J. (2023). Learning engineering: What it is, why I'm involved, and why I think more of you should be. *Journal of the Learning Sciences, 32*, 305-323.

Kozma, R. (1994a). Will media influence learning? Reframing the debate. *Educational Technology Research & Development, 42*(2), 7-19.

Kozma, R. (1994b). A reply: Media and methods. *Educational Technology Research & Development, 42*(3), 11-14.

Lee, U., DeLiema, D., & Gomez, K. (2022). Equity conjectures: A methodological tool for centering social change in learning and design. *Cognition & Instruction, 40,* 77-99.

Lee, V. (2022). Learning sciences and learning engineering: A natural or

artificial distinction? *Journal of the Learning Sciences*. DOI: 10.1080/10508406.2022.2100705

Maxwell, J. (2004). Causal explanation, qualitative research, and scientific inquiry in education. *Educational Researcher, 33*(2), 3-11.

McKenney, S. (2018). How can the learning sciences (better) impact policy and practice? *Journal of the Learning Sciences, 27,* 1-7.

Nuthall, G. (2005). The cultural myths and realities of classroom teaching and learning: A personal journey. *Teachers College Record, 107*(5), 895-934.

Pea, R., & Linn, M. (2020). Personal perspectives on the emergence of the learning sciences: 1970s-2005. *Frontiers in Education, 5,* article 130.

Philip, T. M., Bang, M., & Jackson, K. (2018). Articulating the "how," the "for what," the "for whom," and the "with whom" in concert: A call to broaden the benchmarks of our scholarship. *Cognition & Instruction, 36*, 83-88.

Philip, T., Pham, J., Scott, M., & Cortez, A. (2022). Intentionally addressing nested systems of power in schooling through teacher solidarity co-design. *Cognition & Instruction, 40,* 55-76.

Ravitch, S. A., & Riggan, M. (2012). *Reason & rigor: How conceptual frameworks guide research*. Los Angeles, CA: SAGE.

Sandoval, W. (2014). Conjecture mapping: An approach to systematic educational design research. *Journal of the Learning Sciences, 23,* 18-36.

Schneider Kavanagh, S., Fox Resnick, A., Ghousseini, H., Gotwalt, E., Cordero-Siy, E., Kazemi, E., & Dutro, E. (2022). Breaking the fourth wall: Reaching beyond observer/performer binaries in studies of teacher and researcher learning. *Cognition & Instruction, 40,* 126-147.

Schwartz, D., & Bransford, J. (1998). A time for telling. *Cognition & Instruction, 16,* 475-523.

Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. *Educational Researcher, 27*(2), 4-13.

Sutton, R., & Staw, B. (1995). What theory is not. *Administrative Science Quarterly, 40,* 371-384.

Sweller, J., Zhang, L., Ashman, G., Cobern, W., & Kirschner, P. (2023). Response to De Jong et al.'s (2023) paper "Let's talk evidence – The case for combining inquiry-based and direct instruction. *Educational Research Review.* https://doi.org/10.1016/j.edurev.2023.100584

Tabak, I. (2022). Productive tension in research practice partnerships: Where substance and politics intersect. *Cognition & Instruction, 40,* 171-177.

Tofel-Grehl, C. (2023). " There is no room for me, for a Hawaiian, in science": Rightful presence in community science. *Journal of Research in Science Teaching*, 60(8), 1879–1911.

Vakil, S., McKinney de Royston, M., Nasir, N., & Kirshner, B. (2016). Rethinking race and power in design-based research: Reflections from the field. *Cognition & Instruction, 34,* 194-209.

[1] The instructor reserves the right to modify the syllabus as needed during the course to meet students' learning needs.