ITLS 7300: Research in Instructional Technology and Learning Sciences
Spring 2021
Monday 9:30-12pm
ZOOM- possibly move to face-to-face

Instructor
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Course Description
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.

Course Objectives
- Students will be able to identify theory or theoretical perspectives in a given research study
- Students will be able to explain the epistemological underpinnings and approaches associated with design-based research
- Students will be able to identify two or more current topics of contemporary relevance to Instructional Technology or Learning Sciences and justify why those are of community interest.
- Students will demonstrate relative improvement in their individual ability to conceptualize, describe, or present scholarly research
- Students will think about their own theoretical framework, research questions, methods, and sample.

Course Format
The course will meet weekly however I am open to a hybrid format where we spend some week discussing online and some in zoom. **Zoom attendance is mandatory**. *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.*

Join Zoom Meeting
(removed for publication)

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.

Required textbooks and materials
There is one required text for the course:

> Maxwell, J. (2013). *Qualitative Research Design: An interactive Approach*. Los Angeles: Sage.

Please note all assignments will be based on the pages in the 3rd edition:
https://www.amazon.com/Qualitative-Research-Design-Interactive-Approach/dp/1412981190
You can rent the ebook for the semester for less than $22.

Course Requirements
There are 3 types of assignments in this class.

1. **Quotes and Notes.**   This is an informal individual assignment. 20% of grade.

The purpose of these Quotes and Notes on the reading is to facilitate reflection and analytic insight. I want you to reflect on the main point of the articles, your thoughts about it, identify connections or implications to your own research or the future of the field. I created a template for you to use. I won't have you turn in memos for every reading. However, I hope that you get in the habit of writing memo's on every article you read.

Quotes and Notes must be submitted electronically prior to the associated week's class meeting to receive credit.

2. **Discussion Facilitation.** This is a group assignment (2-3 people). 30% of grade.

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 the assigned readings. The purpose of the assignment is not to provide a summary. Instead, you must understand the 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. You will be graded as Credit/No Credit.

3. **Researcher-in-Training Assignments.** This is an individual assignment. 50% of grade.

One of the most difficult steps of graduate school is coming up with research questions and deciding on your research topic. Regardless of whether you plan a qualitative or quantitative study, the exercises in the Maxwell book are designed to help you figure out who you are as a researcher and what you would like to research. Throughout the term, you will be given in-class guidance and then required to submit or present your own independent efforts related to the 6 exercises in the Maxwell book:

> Exercise 2.1: Researcher Identity Memo (p.34-35)

Exercise 3.1: Creating a Concept Map for your study (p.62)
Exercise 4.1: Developing your research questions (p.84)
Exercise 5.2: Questions and Methods Matrix (p.119)
Exercise 6.1: Dealing with Validity Threats (p.136)
Exercise 7.1: Developing a proposal argument (p.158)

All assignments will be turned in through the Canvas submission system.

Late submissions
Late assignments *will not* be accepted except only in the case of a personal or family emergency.
Grading scale
There is no curve for the class. Grades will be assigned based on the scale below.

Quotes and Notes	20%
Discussion Facilitation/Participation	30%
RiT Assignments	50%

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. You also are not permitted to submit work previously completed for another course or other project for this course.

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 circumstance is required for an extension to be considered.

Course Topics and Schedule

Date	Topic	Readings	Assignments Due
1/25	Introduction to the course	Hoadley, 2018	
2/1	Conceptual Frameworks	Ravitz and Riggan, 2012, Chapters 1-3	
2/8	Model for Research Design and Researcher Identity	Maxwell (2013), Chapters 1 & 2	Researcher Identity Memo (exercise 2.1, p.34-35 Maxwell).
2/15	Presidents day- No class		
2/22	Thinking about your Conceptual Frameworks

AND

Debates in the field: Situated Learning vs Cognition | Maxwell (2013), Chapter 3 AND

Anderson, Reder, & Simon (1996); Greeno (1997) | Exercise 3.1: Creating a Concept Map for your study and memo explaining it (p.62)

Be prepared to share with classmates.

Quotes & Notes |
| 3/1 | Debates in the field: Technology and Learning | Clark (1994); Clark & Estes (1998); Kozma (1994a); Kozma (1994b); | Quotes & Notes |
| 3/8 | Research Questions: What do you want to understand? | Maxwell (2013), Chapter 4 AND

Clarke-Midura et al (2020)

Philip, Bang, & Jackson (2018) | Exercise 4.1: Developing your research questions (p.84)

Be prepared to share with classmates.

We will break down my article in terms of conceptual framework, rq, methods.. |
| 3/15 | Interaction Analysis: Special guest lecture by Deborah Silvis and Colin Eliot-Hennessey | Readings TBD | |
| 3/22 | Methods- What will you actually do?
RPP and Equity in Science Education | Maxwell (2013), Chapter 5 AND Penuel, (2017) | Exercise 5.2: Questions and Methods Matrix (p.119) |
| 3/29 | Design-Based Research- Seminal Readings | Brown, 1992
Collins 1992
Collins et al, 2004 | Quotes & Notes |
| 4/5 | Validity: How might you be wrong? | Maxwell (2013), Chapter 6 AND Litts et al 2020 | Exercise 6.1: Dealing with Validity Threats (p.136) |
| 4/12 | Emerging Topics in the LS: RPP and Equity | Penuel et al, (2020) | Quotes & Notes |

4/19	Research Proposals	Maxwell (2013), Chapter 7	Exercise 7.1: Developing a proposal argument (p.158)
4/26	Emerging Topics in the LS: AI and the future of learning	Rochelle et al, (2020)	

Readings

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

Bang, M. & Vossoughi, S. (2016) Participatory Design Research and Educational Justice: Studying Learning and Relations Within Social Change Making, Cognition and Instruction, 34:3, 173-193, DOI: 10.1080/07370008.2016.1181879

Brown, A. L. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings. *The journal of the learning sciences*, *2*(2), 141-178.

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.

Clarke-Midura, J., Sun, C., & Pantic, K. (2020). Making Apps: An Approach to Recruiting Youth to Computer Science. *ACM Transactions on Computing Education (TOCE)*, *20*(4), 1-23.

Collins, A. (1992). Toward a design science of education. In *New directions in educational technology* (pp. 15-22). Springer, Berlin, Heidelberg.

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

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

Hoadley, C. (2018). A short history of the learning sciences. In International handbook of the learning sciences (pp. 11-23). Taylor and Francis.

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.

Litts, B.K., Tehee, M., Jenkins, J., Baggaley, S., Isaacs, D., Hamilton, M.M. and Yan, L. (2020), "Culturally disruptive research: a critical (re)engagement with research processes and teaching practices", Information and Learning Sciences, Vol. 121 No. 9/10, pp. 769-784. https://doi.org/10.1108/ILS-02-2020-0019

Maxwell, J. (2013). *Qualitative Research Design: An interactive Approach*. Los Angeles: Sage.

Penuel, W. R. (2017). Research–practice partnerships as a strategy for promoting equitable science teaching and learning through leveraging everyday science. Science Education, 101(4), 520-525.

Penuel, W. R., Riedy, R., Barber, M. S., Peurach, D. J., LeBouef, W. A., & Clark, T. (2020). Principles of collaborative education research with stakeholders: Toward requirements for a new research and development infrastructure. *Review of Educational Research*, *90*(5), 627-674.

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.

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

Roschelle, J., Lester, J. & Fusco, J. (Eds.) (2020). *AI and the future of learning: Expert panel report* [Report]. Digital Promise. https://circls.org/reports/ai-report.