

IAT 834 *Mixed Methods in Design Research*

3 credits

Winter/Spring 2017

Instructor: Dr. Alissa Antle

DRAFT course description – subject to change.

Aims

The course covers a range of ways of knowing and inquiring in design research by providing a comparison of different methodological approaches that can be used in design evaluation. It will focus on understanding how to design mixed method research to explore and investigate how humans interact with computer-mediated environments. The course is designed as a second research methods course.

The course has two main aims:

1. To help students make sense of the research they can be expected to encounter in published research in art and design, human computer interaction and technology studies in their graduate program and their professional practice.
2. To provide the basis for more intensive study using a mixed methods evaluation approach in the conduct of their own design oriented research.

Who should take this course

Graduate students in Interactive Arts and Technology, Psychology, Sociology, Computing, Communications, Engineering, Cognitive Science, Education or Contemporary Arts.

Pre-requisites and course enrolment

Students should have an introductory course in research methods and/or research design. Students will benefit from having clearly defined research questions for their thesis work in place.

Outcomes

The overall learning goals for the course are for students to understand and be able to discuss different methodological traditions and to be able to critique and design mixed method evaluations of human use of computer-mediated environments.

- Understand and be able to explain the epistemological origins of several main traditions including: quantitative (e.g., post-positivism), qualitative (e.g., constructionism) and hybrid or mixed (e.g., pragmatism).
- Be able to critically analyze the methods and results of a variety of design evaluations found in published conference and journal proceedings in art, design, technology, psychology, and, sociology.
- Be able to develop and apply a set of criteria to choose an evaluation approach based on the design to be evaluated.
- Be able to identify and discuss the assumptions underlying the choice of a particular design evaluation approach.

- Be able to propose and design viable and rigorous research studies which focus on evaluating humans in the context of technology design and/or use.
- Understand the difference between a methodology and a method.

Topics

This course builds a foundation for design evaluation research by providing an introduction to the epistemological origins of different inquiry traditions (e.g., empiricism, ethnography, and phenomenology) which can be used to evaluate human use of computer-mediated environments. This foundation will be used to analyze recent evaluations of design frameworks, concepts, prototypes and systems which use mixed quantitative and qualitative methods of inquiry. While this is not a course in using any particular method, students will have the opportunity to plan and design evaluations using mixed methods which may include: analytical methods (e.g., heuristics evaluation, interface criticism), observational (field, lab), query (interview, survey) and experimental (controlled, quasi).

Week by Week (to be confirmed)

Week 1: Terms in Design Evaluation: paradigm, epistemology, ontology, methodology, method.

Week 2: Paradigm Wars: Positivism vs. Constructivism and along came Pragmatism.

Week 3: Strategies of Inquiry in Design Research

Week 4: Approaches to Design Evaluation

Week 5: Types of Mixed Methods Designs

Week 6: The Role of Theory in Design Research

Week 7: Validity, Reliability & Triangulation in Design Research

Week 8 - 11: Case Analyses of Mixed Methods Studies in Design Research

Weeks 12 - 13: TBD

Evaluation & Grading

- Quiz 15%
- Presentation 20%
- Research Design (Proposal) 50%
- Participation 15%

References

Full reading list to be announced.

Required Text

Creswell, J.W. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. (4th edition) Sage, 2013.

Optional Texts:

Evans and Rooney, *Methods in Psychological Research*, Sage, 2008.

David Martin, *Doing Psychology Experiments*, Wadsworth, 2003.

Mike Kuniavsky, *Observing the User Experience*, Morgan Kaufmann, 2003

Articles including:

Buchanan, Strategies of Inquiry in Design Research, Presentation At NELDRIC – Network of Leading Design Research and Innovation Centers Founding meeting at the University of Art and Design Helsinki on 21 September 2005.

Cross N., Designerly Ways of Knowing: Design Discipline versus Design Science, *Design Issues*, Vol. 17, No. 3. (Summer, 2001), 49-55.

Fallman, Why research-oriented design isn't design-oriented research. Proceedings of Nordes: Nordic Design Research Conference, Copenhagen, Denmark , 2005.

Friedman, K. Creating Design Knowledge: From Research into Practice, Department of Knowledge Management, Norwegian School of Management, Oslo, 2000.

Friedman, Theory construction in design research: criteria: approaches, and methods. *Design Studies* , 24, 6, November 2003, 507-522

Harrison, S., Sengers, P., and Tatar, D. Making epistemological trouble: Third-paradigm HCI as successor science. *Interacting with Computers*. 23, 5, 2011, 385-392.

Rogers, Y. New Theoretical approaches for Human-Computer Interaction. *Annual Review of Information, Science and Technology*, 38, 2004, 87-143.

Sengers, Must Design be Scientific? DIS 2006 Workshop on Exploring Design as a Research Activity, June 2006.

Stolterman, E. & Wiberg, M. Concept-driven interaction design research, *Human-Computer Interaction* 25, 2, 2010, 95–118.

Vetting Wolf et al. Dispelling Design as the 'Black Art' of CHI, CHI 2006.

Zimmerman, J. Stolterman, E. and Forlizzi. J. 2010. An analysis and critique of Research through Design: towards a formalization of a research approach. In Proceedings of the 8th ACM Conference on Designing Interactive Systems (DIS '10). ACM, New York, NY, USA, 310-319.