

INLS 890-123 Research Design

TERM: Spring 2010

TIME: Thursday, 2:00-4:30 PM

LOCATION: Manning Hall, Room 214

COURSE WEBSITE: http://ils.unc.edu/courses/2010_spring/inls890_123/

INSTRUCTOR: Diane Kelly, Ph.D., Associate Professor

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OFFICE: Manning Hall, Room 204

OFFICE HOURS: Tuesday, 12:30-2:00, Wednesday, 11:00-1:00 and by appointment

Motivation and Purpose

My motivation for teaching this course is to create a forum where Ph.D. students can examine key issues related to research design and methodology. The SILS Ph.D. program offers a two-semester course which introduces students to basic research issues and ILS literature and problems, but there is no Ph.D. course at SILS which teaches students about research methods. I believe that all Ph.D. students should have a firm foundation in, and grasp of, research methods. Currently, it is difficult to see where (and how) students acquire such knowledge. Trial-and-error is important, but so too is formal instruction. INLS 780 (Research Methods) offers some foundation, but it is a Master's course designed with the professional (not researcher) in mind. Not only is there a gap in the formal education for Ph.D. students in this area, there is also a gap for master's students who are interested in taking a more advanced course in research methods.

The purpose of this course is to formally guide students' exploration of, and engagement with, a series of topics related to research design, including theory, measurement and data collection. This course also introduces students to the sociology of science, ethics and scientific integrity.

Understanding research methods is essential to a life of research. Congratulations. You have chosen wisely by signing up for this course because you are unlikely to have a formal opportunity to engage in sustained discussion and exploration of these topics again – you'll be too busy doing your own research! Even if you do not plan to use all of the methods discussed in this course, understanding various methods and approaches to research will give you a better perspective and a greater understanding of the methods you plan to use. Besides, you never know what type of method you'll use in the future.

You all are the second set of students to take this course; our experiences together and your feedback is extremely valuable in helping shape the future of this course. The initial offering of the course in the Spring 2009 was quite successful: some students used their products in this course for their comprehensive exam and/or dissertation proposal, many executed the projects they proposed as a lead-up to their dissertation research and one student even used the proposal to obtain funding to conduct the research. I want your experiences in this course to be just as rewarding.

Assumptions & Prerequisites

This course is for Ph.D. students only (or those considering the Ph.D. program and have had prior experience with basic research methods) or advanced Master's students (where advanced means that the student has completed INLS 780 or some other equivalent). I assume that all students have completed a basic research methods course and have had some exposure to statistics and data analysis. This is not a statistics/data analysis course, although we will discuss a few topics related to power and sampling. I do not assume that all students have completed independent research projects, but I do assume that all students have at least a desire to do so in the future.

Preparation

This course has a heavy reading load. I expect you to prepare for each class by reading the assigned materials. Many of these readings are dense. I do not expect you to understand every single thing in all articles. Remember, read for main ideas and themes and take notes of what you find (otherwise you might forget). You are not reading in preparation for a final exam. You are reading in preparation for discussion. I believe through your engagement with the articles you will absorb important ideas even if you cannot remember all the 'facts' from the articles and/or some things do not make much sense.

Some things will stick, other things will not ... as an example, I encountered many of these readings in the first Ph.D. course I took on research foundations. I remember (a) struggling to read many of the pieces and (b) not understanding 100% of everything that I read. However, to this day, I appreciate the perspective these articles and the process of engagement with difficult texts gave me (and I even remember a few things too!). I still read and consult and study these articles regularly for my own research. And, as a programming note, even though I will be reading many of these pieces for the umpteenth time, I know (and accept) there will still be things that I will not fully understand. I ask your forgiveness now if I am unable to explain something adequately.

We will spend the majority of class time discussing the readings. I will be prepared to introduce the materials and pose some questions for us to consider if we have a hard time starting the discussion or get stuck (although you all may not need any prompting!). Occasionally, I will demonstrate things and present examples for discussion.

A good way for you to prepare for our discussions is to annotate the articles (engage!), note your questions and what appears to be the main ideas and themes of the work. And, again, realize that just because you ask a question in class does not mean that I will be able to answer it. Another good way to prepare for class is to bring in examples from research you've read that illustrate your questions (or email the examples to me ahead of time so that I am better able to respond to your questions).

Assignments

There are four major written assignments for this course. Three require you to write a medium-length paper (about 6-8 pages) and make a short, formal presentation to class (about 10 minutes). The fourth and final paper will be slightly longer (~12 pages expected, but up to 15) and also requires a 10-minute presentation. The assignments are:

- Theory Paper (20%) and Presentation/Reviews (5%)
- Measurement Paper (20%) and Presentation/Reviews (5%)
- Method Paper (20%) and Presentation/Reviews (5%)
- Proposal Paper (20%) and Presentation (5%)

Theory Paper. You will pick a theory, describe it and its origins and evolution, discuss 2-3 empirical research articles which use the theory and identify some problems in ILS which the theory might be useful for exploring and/or explaining. In your discussion of the 2 empirical research articles, be sure to discuss (a) which part(s) of the theory is used; (b) how the theory is represented in the study method; and (c) how the findings from the studies extend or contradict the theory. Your initial description of the theory should be written in a style similar to the descriptions found in Fisher, et al. (2005), although you do not need to provide quite so many references.

Measurement Paper. You will pick a concept (e.g., self-efficacy), discuss its origins and relations to theory and describe how it has been defined and measured (include a description of standard measures, if any exist, and any tests of validity and reliability). You will also compare and contrast how the concept has been defined and measured in 2 empirical research articles. In your discussion of these articles indicate potential problems with, and limitations of, how the concept was measured. Be sure to discuss how the concept was defined nominally and operationally, and what the results look like with respect to the measure. [TIP: the concept can be one that is identified in the theory you investigated in the previous assignment, but you should include a different pair of empirical papers.]

Method Paper. You will pick a method or data collection technique, describe it (how does it work?) and its origins (if possible), discuss major uses of the method, discuss major validity and reliability issues associated with the method, discuss/compare/contrast 2 empirical research articles which use the method, and identify some problems in ILS for which the method would be useful for investigating.

Proposal Paper. You will write a short research proposal. This includes (a) a general description of the topic and problem; (b) description of one or more theories you will use to focus your research; (c) statement of the research questions and/or hypotheses; (d) statement of the importance of the study (why is it needed?); (e) short literature review (~5 pages); and (f) method for investigating the problem. The bulk of this paper should be about the method. You do not have a lot of space, so be concise and get to the point quickly. (Note: being concise does not mean omitting and/or skimming over the details.) You will describe the method in detail including how you will define, operationalize and measure concepts. You will describe the study procedures and any instruments. You will describe a sample and your recruitment strategy. Finally, you will describe what you hope to learn from the study.

Presentations. Each paper will be accompanied by a short, formal, in-class presentation. There will be two types of presentations: regular presentations, where you have up to 10 minutes to provide an overview of your paper to class and one Pecha-kucha session (a handout will be provided; you can also visit the website: <http://www.pecha-kucha.org/>). You will present your theory and measurement paper as regular presentations and we'll do the Pecha-Kucha session for the Method paper. I've not ever done one of these, so I'll also participate!

The purpose of these presentations is for you to share what you've learned with the class (a 'show-and-tell' of sorts) and for you to develop and refine your presentation skills. We will also spend time following your presentation discussing your work – in 'workshop' format. In most cases, your paper will not be due until the following week, so you'll be able to incorporate what you learn from our discussion of your work into your paper.

You are required to provide some visual material to accompany your presentation. This might be power-point slides or a handout. You will be timed and you will receive feedback from two people about your presentation (me and one other student).

At each presentation session, you will be responsible for providing one other person with written feedback about their presentation. Take notes during the presentation and then prepare a short memo summarizing your observations. Email this to the person 1-2 days following their presentation (copying me).

I will also video record your presentations and you will be required to watch each recording and submit a one-page (memo-style) critique of your presentation the week following the presentation. In your critique, you might discuss (1) positive and negative things; (2) things you'd like to focus on and improve for the next presentation and (3) a narrative about questions you had when preparing and/or giving the presentation and the decisions you made.

Observe the following technical specifications when writing your papers:

- Use the APA style guide to format your paper and references. Pay close attention to any 'default' styles in your Word processing application and make sure that this style is the same as the APA, especially with respect to line spacing.
- Provide a separate reference page.
- Give your paper a title. Whatever title you choose, it should reflect clearly and concretely the content of your paper.
- Double-space your paper, use one-inch margins and 12-point font.
- Proof-read and copy-edit your paper. Points will be deducted for gratuitous spelling and grammatical errors.

My expectation is that you will do original work in this course. It is fine for you to build on your previous work, but it is unacceptable to submit the same work (or nearly the same work) that you used for another course or as part of your research assistantship (if applicable).

Grading Scale

[H] High Pass (95% - 100%)

[P+] Pass + (90% - 94%)

[P] Pass (85% - 89%)

[P-] Pass - (80% - 84%)

[L] Low Pass (70% - 79%)

[F] Fail (0% - 69%)

UNC Honor Code and Campus Code

It shall be the responsibility of every student at the University of North Carolina at Chapel Hill to obey and to support the enforcement of the Honor Code, which prohibits lying, cheating, or stealing when these actions involve academic processes or University, student, or academic personnel acting in an official capacity.

It shall be the further responsibility of every student to abide by the Campus Code; namely, to conduct oneself so as not to impair significantly the welfare or the educational opportunities of others in the University community.

Schedule

Jan 14 Introductions; Research in ILS and Doing Science

- National Academy of Sciences (1995). On being a scientist: Responsible conduct in research, second edition. Online: <http://www.pnas.org/content/86/23/9053.full.pdf>.
- Siever, R. (1968). Science: Observational, experimental and historical. *American Scientist*, 56, 70-77.
- Suchman, E. A. (1954). The principles of research design. In J. T. Doby (Ed.) *An Introduction to Social Research* (pp. 49-50).

Jan 21 Philosophy of Science

- Pitt, J. (1988). Introduction. *Theories of Explanation*, (pp. 3-8). Oxford University Press.
- Kuhn, T. S. (1970). Chapter 2: The route to normal science. *Structure of Scientific Revolutions* (pp. 10-22), University of Chicago Press.
- Bryman, A. (1984). The debate about quantitative and qualitative research: A question of method or epistemology? *British Journal of Sociology*, 35(1), 75-92.

Jan 28 Theory

- Bates, M. J. (2005). An introduction to metatheories, theories and models. In K.E. Fisher, S. Erdelez and L. E. F. McKechnie (Eds.), *Theories of Information Behavior*, (pp. 1-24). Information Today, Inc.
- Littlejohn, S. (1992). Chapter 2: Theory in the process of inquiry. *Theories of Human Communication*, (pp. 21-37), Wadsworth Publishing Co.
- Fiske, S. T. (2004). Mind the gap: In praise of informal sources of formal theory. *Personality and Social Psychology Review*, 8(2), 132-137.
- From Fisher, Erdelez and McKechnie's book, *Theories of Information Behavior*, Miwa, Bandura's Social Cognition (pp. 54-57).
- From Fisher, Erdelez and McKechnie's book, *Theories of Information Behavior*, select two theories (chapters) to read. Be prepared to share the theories you read from Fisher, et al. and discuss which is most/least useful according to the criteria listed in Littlejohn.

Feb 04 Research Questions and Problems, Hypotheses, Variables

- Kelly, D. (2009). Methods for evaluating interactive information retrieval systems with users. *Foundations and Trends in Information Retrieval* 3(1-2) (pp. 25-39).
- Sproull, N. (1988). *Handbook of Research Methods: A Guide for Practitioners in the Social Sciences* (pp. 27-35). Scarecrow Press.
- Goode, W. J. & Hatt, P. K. (1962). *Methods in social research*, McGraw-Hill Publishers, (pp. 68-73).
- Compeau, D. R. & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly* (June), 189-211.

Feb 11 Theory Workshop

DUE: Theory Presentation (Paper Due)

Feb 18 Measurement

- Neuman, W. L. (1994). Chapter 8: Specialized measurement topics, scales and indexes. *Social Research Methods: Qualitative and Quantitative Approaches* (pp. 145-168). Allen and Bacon, Inc.
- Kelly, D. (2009). Methods for evaluating interactive information retrieval systems with users. *Foundations and Trends in Information Retrieval* 3(1-2) (pp. 39-43).

Examples:

- O'Brien, H. L. & Toms, E. G. (2010). The development and evaluation of a survey to measure user engagement. *Journal of the American Society for Information Science and Technology*, 61(1), 50-69.
- Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports*, 51, 663-671. (Related to Bandura's Theory of Social Cognition and concept of self-efficacy; also related to Compeau and Higgins)

Reference and Optional

- For your reference: Miller, D. C. & Salkind, N. J. (2002). Part 7: Assessing social variables: Scales and indexes. *Handbook of Research Design and Social Measurement (6th Edition)*. Sage Publications, (pp. 449-555).
- [Optional]: For measures used in interactive information retrieval research, read Kelly, D. (2009). Methods for evaluating interactive information retrieval systems with users. *Foundations and Trends in Information Retrieval 3(1-2)*, (Section 10).

Feb 25 Measurement Workshop; Validity and Reliability

- Kelly, D. (2009). Methods for evaluating interactive information retrieval systems with users. *Foundations and Trends in Information Retrieval 3(1-2)*, (pp. 176-181).

DUE: Measurement Presentations (Paper Due on March 04)

March 04 Surveys & Questionnaires

- Vaus, D. (2002). Editor's introduction: Social surveys – an overview. *Social Surveys*, v.1, (pp. iv-xliv), Sage Publications.
- Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). Chapter 1: An introduction and a point of view. *The Psychology of Survey Response* (pp. 1-22). Cambridge University Press.
- Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). Chapter 8: Selecting a response: Mapping judgments to survey answers. *The Psychology of Survey Response* (pp. 230-254). Cambridge University Press.
- **Guest: Teresa Edwards, Odum Institute**

March 11 Spring Break

March 18 Experiments

- Campbell, D. T. & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Rand McNally & Company.
- Kelly, D. (2009). Methods for evaluating interactive information retrieval systems with users. *Foundations and Trends in Information Retrieval 3(1-2)* (34-60; 71-83).

March 25 Unobtrusive Measures and Naturalistic Studies

- Andersen, J. W. (1989). Unobtrusive measures. In P. Emmert & L. Barker (Eds.) *Measurement of communication behavior* (pp. 249-266). Longman Publisher.
- Bochner, S. (1979). Designing unobtrusive field experiments in social psychology. In L. Sechrest (Ed.) *Unobtrusive Measurement Today*, (pp. 33-46), Jossey-Base Inc., Publishers.
- Browne, J. (1976). The used-car game and Field work for fun and profit. In M. P. Golden (Ed.), *The Research Experience* (pp. 60-84), F.E. Peacock Publishers, Inc.

April 01 Interviews

- Stewart, D. W., Shamdasani, P. N., & Rook, D. W. (2007). The focus group moderator. In *Focus Groups: Theory and Practice (2nd ed.)*, (pp. 69-87). Thousand Oaks, CA: Sage.
- Rubin, H. J., & Rubin, I. S. (2005). Structuring the interview. In *Qualitative Interviewing: The Art of Hearing Data (2nd. ed.)*, (pp. 129-151).
- Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, 51(4), 327-58.
- Stewart, D. W., Shamdasani, P. N., & Rook, D. W. (2007). Conducting the focus group. In *Focus Groups: Theory and Practice (2nd ed.)*, (pp. 88-107). Thousand Oaks, CA: Sage.
- **VISITOR: Prof. Phil Edwards**

April 08 Method Workshop (Pecha-Kucha)

- **DUE: Method Presentation & Paper (3:15-4:30)**
- **VISITOR: Fred Stutzman (Network Analysis) (2:00-3:00)**

April 15 No Class: CHI Conference

April 22 Diaries, Experience Sampling and Logging

- Alaszewski, A. M. (2006). Chapter 1: The development and use of diaries. *Using Diaries for Social Research* (pp. 1-23), Sage Publications.
- Agosto, D. E. & Hughes-Hassell, S. (2006). Toward a model of the everyday life information needs of urban teenagers, part 1: Theoretical model. *Journal of the American Society for Information Science and Technology*, 57(10), 1394-1403.
- Agosto, D. E. & Hughes-Hassell, S. (2006). Toward a model of the everyday life information needs of urban teenagers, part 2: Empirical model. *Journal of the American Society for Information Science and Technology*, 57(11), 1418-1426.
- **VISITOR: Prof. Sandra Hughes-Hassell** [Diane is out of town.]

April 29 Issues in Data Analysis and Ethics

- Abelson, R. P. (1995). Chapter 1: Making claims with statistics. *Statistics as Principled Argument* (pp. 1-16), Lawrence Erlbaum Associates, Publishers.
- Rubin, H.J. & Rubin, I.S. (2005). *Qualitative interviewing: The art of hearing data*. Thousand Oaks, CA: Sage Publications (Chs. 10, 11).
- Kelly, D. (2009). Methods for evaluating interactive information retrieval systems with users. *Foundations and Trends in Information Retrieval* 3(1-2), (pp. 182-192).

May 06 Final Class

DUE: Proposal Presentation & Paper

COOKOUT AT DIANE'S AFTERWARDS!