Psychology 349: Seminar in Advanced Research Methods
Department of Psychology
University of Vermont

Spring 2010
3 Credit Hours

Monday, 10:30-1:30
John Dewey Hall 238
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Office Hours: By appointment

Class Participation. Regular class attendance and participation are requirements for an “A” grade.

Course Structure. This is an advanced seminar. The seminar format requires that students be responsible for and lead the discussion on assigned topics. On most topics, I will provide an overview and emphasize key points. Discussion will follow the overview.

Grading. A course grade is assigned on the basis of the average of all graded assignments. Some assignments may be ungraded, but I will provide written comments and suggestions to be applied to future assignments. Short assignments will involve written, methodological critiques about published research articles. They are described later in this syllabus.

Required Readings:

Numerous articles are also assigned. Most of them are available on the web at: https://www.uvm.edu/~tstickle/349

I will provide you with a login and password to gain access to these articles.
Readings as listed below.

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<tr>
<th>Date</th>
<th>Topic and Readings</th>
<th>References</th>
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<tr>
<td>1/25</td>
<td><strong>Falsifiability, Little Green Men, Science, and Pseudoscience</strong>  &lt;br&gt;Chapters 1-4 in Stanovich</td>
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3/8  No class spring break
3/15  Randomization and Experimental Design
Kazdin, Chapters 5 & 6

3/22  Issues in Measurement I and interpretation (AKA, limitations of null hypothesis tests and randomized experiments)

3/29  Quasi-experiments and non-equivalent groups
Kazdin, Chapter 7

4/5  Natural Experiments
4/12 **Issues in Measurement II – Classical Test Theory**
Crocker, L., and Algina, J. (1986). Introduction to classical and modern test theory, Classical test theory, and Reliability and the classical true score model.

4/19 **Measurement III – Item Response Theory**

4/26 **Program Evaluation**

5/3 **Measurement IV - Meta-analysis and validity generalization**
Measurement is not always about measurement theory. At times, we might be interested in collecting data that serves as an indicator of other unobservable entities such as research findings. Meta-analysis is one method for gathering and making sense out of multiple research findings.
Assignments

Each exercise should be typed, double-spaced, and concise. Do not restate the methods and aims of the study, but do include a copy of the article you are discussing. Do not simply rehash each article and restate what the authors have said. You are to critique the article you choose in ways relevant to the assignment. The purpose of these assignments is to apply the concepts and principles that we cover in class readings and discussion. Each assignment builds on those concepts and the final assignment is a comprehensive application of the concepts and principles covered in the class. These assignments will increase your ability to critically assess and design research. They will also prepare you to competently participate in peer review of research. Please feel free to come to me for any clarification or questions about the assignments.

2/22 Pick an article of interest to you that reports an empirical finding. Write a purposely misleading but persuasive one page or shorter summary of the article for publication in the Washington Post. This summary is written in a journalistic style. In the following 2-4 pages, discuss how the newspaper reader may be mislead by your presentation of the original scientific article.

3/29 Choose one research article that uses correlational (observational) methods. That is, associations are reported between independent and dependent variables but there is not random assignment to treated and control groups. A longitudinal study qualifies as a correlational design if no intervention is made. Evaluate the study's adequacy in terms of threats to validity and use of causal inference. Do not survey all possible threats to validity; rather, emphasize those that apply most directly to your particular study. Discuss how the study's design could be improved.

4/12 Pick an article in your field of research interest that you think is especially weak and should not have been published. Pretend you are reviewing the article prior to publication and make the case against its publication. The article chosen should not be one that is widely recognized in your field as flawed or inadequate.

4/19 Choose a research article in your field that reports on development, validation, factor structure, and/or general psychometric properties of a measure. Psychometrics and measurement must be a primary focus of the article. Using the concepts of measurement covered in the course, write a critique of the measure. Your critique should address strengths, weaknesses, and make recommendations for research to refine or improve the measure.

Read the article as if it has been submitted for publication to the same journal and you have been asked to provide an anonymous review. Your review should cover the relevant methodological and statistical issues discussed in this course (and elsewhere). In particular, you should address sampling, measurement, importance of the question(s), randomization (or lack of), handling of non-equivalent groups, summary of the relevant literature, important omissions from the relevant literature, attention to threats to validity, causal statements and their justification, appropriateness of statements about generalizability of the findings, justification of conclusions and claims made in the discussion section, whether appropriate limits to the study’s design, method, analysis, and conclusions were adequately addressed, and any other important aspects of the study.

Again, do not restate what is said in the paper, rather, discuss and critique what was said and done. Reviews for journals generally provide a short, one paragraph summary of the submitted manuscript and then discussion of its strengths and weaknesses. This paper should be 5 – 10 pages in length.