

Research Methods and Program Evaluation (PSYC 5711 WA)

Instructor: Rupert Klein, Ph.D.
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Office Hours: By appointment

Class Meetings: January 9th – April 3rd
Mondays 2:30pm – 5:30pm
11 (3 hour seminars)
Room: RB 3027

Course Overview:

An in-depth and critical review of topics in research methodology, philosophy of science, and research problem formulation.

Course Objectives:

- To be able to explain, compare and contrast various research methodologies and philosophies of science.
- To examine and assess various ways formulating interesting and meaningful research questions and to see the flaws and drawbacks of poor designs
- Examine, investigate and critically appraise various methodologies and practices in the field of psychology
- Construct a detailed and accurate manuscript review

Required Reading: all articles and chapters are provided on d2l.

Evaluation:

Midterm Exam: 35%
Final Exam: 35%
Manuscript Review: 10%
In-Class Presentation: 10%
In-Class Participation: 10%

Grading Scale:

90 – 100%	= A+
80 – 89%	= A
70 – 79%	= B
60 – 69%	= C
50 -- 59%	= D
<50%	= F

Course Schedule (Detailed Readings below)

Date	Topic	Student Presentations (<i>to be determined</i>)
Jan. 9	Introduction, syllabus overview,	
Jan. 16	The Philosophy of Psychological Science	
Jan. 23	Pseudoscience and Misconduct	Elaine : <i>RCTs in an Aboriginal context</i>
Jan. 30 th	Problems with Significance testing	Pope: <i>effect size</i> Ewen: <i>false positive psych</i>
Feb. 06 th	A problem with replication	Pitura: <i>issues in mediation</i> Trovarello: <i>issues meta-analysis</i>
Feb. 13	Conducting interesting research	Chong: <i>challenges in physio</i> Catherine: <i>Qualitative</i>
Feb. 20	Reading Week – class cancelled	
Feb. 27 th	<i>Midterm Exam</i> Self Report	Jones: <i>missing data</i> Wendy: <i>other report data</i>
March 06 th	Question Design	Tzalazidis: <i>dealing w confounds</i> Person: <i>missing data</i>
Mar 13	Sampling and Sample Size	Keir: <i>generalization</i> Dylan: <i>internet responses and novel collection</i>
Mar. 20	Through the Reviewers Glasses	Campbell: <i>IAT</i> Almutahdi: <i>cross cultural</i>
Mar. 27	Publishing	Poirier: <i>longitudinal</i>
April 3 rd	<i>Final Exam</i>	

Note: final date to withdraw without academic penalty is March 10th, 2017

Academic Dishonesty:

- As a graduate student I assume you are familiar, or will familiarize yourself, with Lakehead University's policies on academic misconduct, dishonesty and plagiarism. The links to such information are below:
- <https://www.lakeheadu.ca/faculty-and-staff/policies/student-related/code-of-student-behaviour-and-disciplinary-procedures/node/1046>
- <https://www.lakeheadu.ca/faculty-and-staff/departments/services/provost-vice-president-academic/academic-integrity-plans-policies/academic-dishonesty-regulations>

Classroom Etiquette

- cell phones away and turned off
- the course is structured to encourage discussion and interaction so distraction on the internet (unless part of the class activity) is inappropriate
- please show courtesy and engage in respectful discourse. Non-civil behaviour may have an effect on your participation grades

Tips for Success:

- This is a seminar course and not a class of simple lecturing. Class time is spent partly in instruction but mostly spent interpreting and integrating assigned articles. The assumption that you are coming to class prepared. Therefore:
 - o Read all material before class
 - o Take notes and bring the article and your notes to class
 - o Ask Questions and share your own experiences. Consider difficulties that you have encountered in your own research and discuss

Mid-term and Final Exam

Both mid-term and final exam will consist of several short answer questions. Questions will be based on in-class lectures, assigned articles, and possibly student presentations. Prior to the exams a list of questions will be presented to students on d2l. These are not to be handed in but questions from this list will be selected for the exams. The exams will be in class with a duration of 1 hour.

Manuscript review

Week 9 (covering the topic of 'how to review a manuscript') a manuscript submission will be posted on d2l for students to critique. Students must submit their commentary in the format outlined in class by April 7th (midnight) at the latest. Late papers are not accepted.

In-Class Presentation

Students will select a topic area and article to summarize for the class. The selected article and slides (if used) will be posted on d2l and should adequately explain to the class what the article entailed and the relevance of the article to psychological research. Because questions may be drawn from student presentations the presenter will be evaluated on the basis of clarity, detail and accuracy. Presentations and discussion on the topic should range between 30 to 40 minutes.

In-Class Participation

As senior graduate students you are expected to attend every class and meaningfully contribute to discussions.

1 - 5%: Absent, late or leaves early from class. Does not engage in discussion nor responds to questions. It is evident articles were not thoroughly read and the student is unprepared for class.

6 - 8%: Student attends class regularly, demonstrates understanding of the material, occasionally engages in class discussion and often is able to answer questions on the assigned readings.

9-10%: Student consistently attends class, demonstrates thorough understanding of the material, not only participates in discussion but leads discussion, contributes commentary beyond the assigned material by drawing on other sources (e.g., previous research experience, articles that were read, information heard at conferences, etc...).

Topics for Presentations:

- Qualitative Research (broad area discuss with professor specific topic)
- Overview of Mixed-Method (Qualitative/Quantitative) Research Designs: When to use, why, and what are the benefits?
- Issues surrounding Mediation
- Cross-Cultural Research
 - o Ethics issues
 - o Explain the theory of emergence, persistence and expression of geographic variation
- Very Brief overview on design and implementation of Longitudinal Design
- False-Positive Psychology: Can anything be significant?
- Other Report Data
- Controlling for Confounds
- Problems with meta-analyses: no substitute for a replication
- How to estimate and interpret effect sizes.
- Uses and abuses of the coefficient alpha
- How to deal with Missing Data and Attrition
 - o Practical guidelines
 - Careless responding
 - Insufficient effort responding
 - Survey non-response
- Internet Surveys and novel data collection:
 - o can we trust internet designs?
 - o Mechanical Turk: best practice and review of prevailing literature
- Random-Control trials
- Generalizing results
- Challenges in Physiological Data Collection/Analysis
- Implicit Attitude Measures: consistency, stability and convergent validity

Detailed Readings Outline:

Week 0 (First class):

Objective: cover course logistics and expectations. Discuss and select articles for presentations

Week 1: The Philosophy of Psychological Science

Bowling, A. (2007). The philosophical framework of measurement. In Bowling, A. (Ed.), *Research methods in health: Investigating health and health services* (pp. 118-132). New York: Oxford University Press.

Week 2: Pseudoscience and Misconduct

Stroebe, W., Postmes, T., & Spears, R. (2012). Scientific misconduct and the myth of self-correction in science. *Perspectives on Psychological Science, 7*(6), 670-688.

Lilienfeld, S., Lynn, S. & Lohr, J. (2003). Science and pseudoscience in clinical psychology: Initial thoughts, reflections and considerations. In Lilienfeld, S., Lynn, S. & Lohr, J. (Eds.), *Science and pseudoscience in clinical psychology* (pp. 1-14). New York: The Guildford Press.

Week 3: Problems with Significance Testing

Cohen, j. (1990). Things I have learnt so far. *American Psychologist, 45*(12), 1304-1312.

Ferguson, C. & Heene, M. (2012). A vast graveyard of undead theories: Publication bias and psychological sciences aversion to the null. *Perspectives on Psychological Science, 7*(6), 555-561.

Week 4: A Problem with Replication?

Pashler, H. & Harris, C. (2012). Is the replicability crisis overblown: Three arguments examined. *Perspectives on Psychological Science, 7*, 531-536.

Gilbert, D. T., King, G., Pettigre, S., & Wilson, T. D. (2016). Comment on "Estimating the reproducibility of psychological science." *Science, 251*, 1037a.

Maxwell, S. E., Lau, M. Y., & Howard, G. S. (2015). Is psychology suffering from a replication crisis? What does "failure to replicate" really mean? *American Psychologist, 70*, 487-498.

Week 5: Conducting Interesting Research

Gray, K. & Wegner, D. (2013). Six guidelines for interesting research. *Perspectives on Psychological Science*, 8(5), 549-553.

Rozin, P. (2007). Exploring the landscape of modern academic psychology: Finding and filling the holes. *American Psychologist*, 62(8), 754-766.

Abelson, R. (1995). Interestingness of argument. In Abelson, R. (Ed.), *Statistics as principled argument* (pp. 156-169). New York: Psychological Press.

Week 6: Self-Report

Paulhus, D. & Vazire, S. (2007). The self-report method. In Robins, R., Farley, C., & Krueger, R. (Eds.), *Handbook of research methods in personality psychology* (pp. 224-239). New York: The Guildford Press.

Baumeister, R., Vohs, K., & Funder, D. (2007). Psychology as the science of self-reports and finger movements: Whatever happened to actual behavior? *Perspectives on Psychological Science*, 2(4), 396-403.

Week 7: Question Design

Schwarz, N., Knauper, B., Oyserman, D., & Stich, C. (2008). The psychology of asking questions. In de Leeuw, E., Hox, J., & Dillman, D. (Eds.), *International Handbook of Survey Methodology*. (pp. 18-34). New York: Lawrence Erlbaum Associates.

Fowler, F. & Cosenza, C. (2008). Writing effective questions. In de Leeuw, E., Hox, J., & Dillman, D. (Eds.), *International Handbook of Survey Methodology*. (pp. 136-160). New York: Lawrence Erlbaum Associates.

Week 8: Sampling and Sample Size

Lohr, S. (2008). Coverage and sampling. In de Leeuw, E., Hox, J., & Dillman, D. (Eds.), *International Handbook of Survey Methodology*. (pp. 97-112). New York: Lawrence Erlbaum Associates.

Streiner, D. (2006). Sample size in clinical research: When is enough enough? *Journal of Personality Assessment*, 87(3), 259-260.

Maxwell, S., Kelley, K., & Rausch, J. (2008). Sample size planning for statistical power and accuracy in parameter estimation. *Annual Review of Psychology*, 59, 537-563.

Week 9: On Being a Reviewer

Streiner, D. (2007). A shortcut to rejection: How not to write the results section of a paper. *Canadian Journal of Psychiatry*, 52(6), 385-389.

Week 10: Publishing

Bakker, M., van Dijk, A., & Wicherts, J. (2012). The rules of the game called psychological science. *Perspectives on Psychological Science*, 7(6), 543-554.

Nosek, B., Spies, J., & Motyl, M. (2012). Scientific Utopia II: Restructuring incentives and practices to promote truth over publishability. *Perspectives on Psychological Science*, 7(6), 615-631.