



Field Experiments in Education Research ED PSYCH 711-003 – Spring 2025

<i>Lecture</i>	Tues/Thur 1:00 – 2:15 pm
<i>Room</i>	Education Sciences 218
<i>Credits</i>	3 credits ¹
<i>Instruction</i>	Face-to-face
<i>Website</i>	https://canvas.wisc.edu/courses/435031
<i>Instructor</i>	Dr. James E. Pustejovsky (pronounced “PUHS-tea-UV-ski” or “Pusto” for short)
<i>Pronouns</i>	he/him/his
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<i>Office hours</i>	Wednesdays 11:00 – 12:00, Thursdays 11:00 – 12:00

1/21 Course introduction

- Further: Hedges and Schauer (2018). Randomised trials in education in the USA.
- Further: Gueron (2016). The Politics and Practice of Social Experiments: Seeds of a Revolution

1/23 A validity typology

- Primary: Shadish, Cook, & Campbell (2002), chapters 2 and 3.

1/28 Examples of field experiments

- Bring your own!

1/30 Institute of Education Sciences applications

- Primary: IES RFA (2022-84305A or 2022-84324A)

¹ This class meets for two, 75-minute class periods each week over the Spring semester and carries the expectation that students will work on course learning activities (reading, writing, problem sets, studying, etc) for about 3 hours out of the classroom for every class period.

2/4 Logic Models and Theories of change

- Primary: Kekahio et al. (2014). Logic models: A tool for effective program planning, collaboration, and monitoring.
- Primary: Peck (2020). *Experimental Evaluation Design for Program Improvement*, Chapter 2.
- Recommended: McLaughlin & Jordan (2016). Using logic models.

2/6 Outcome measurement

- Primary: [Seer Standards: High Quality Outcome Measures](#)
- Primary: Schneider (2020). *Making common measures more common* [blog post]. <https://ies.ed.gov/director/remarks/5-05-2020.asp>

2/11 Implementation, fidelity, and treatment contrast

- Primary: Nelson et al. (2012). A procedure for assessing intervention fidelity in experiments testing educational and behavioral interventions.
- Recommended: Hamilton & Scrivener (2018). Measuring treatment contrast in randomized control trials.

2/13 Implementation (continued)

- Recommended: Weiss, Bloom, & Bock (2014). A conceptual framework for studying the sources of variation in program effects.

2/18 Research design and statistical inference

- Primary: Gerber & Green (2012), chapters 1-2.

2/20 Individual-level random assignment

- Primary: Gerber & Green (2012), chapter 3.

2/25 Balance and covariate adjustment

- Primary: Gerber & Green (2012), chapter 4.

2/27 More on balance and covariate adjustment

- Recommended: Lin (2013). Agnostic notes on regression adjustments to experimental data: Reexamining Freedman's critique.
- Recommended: Morris et al. (2022). Planning a method for covariate adjustment in individually randomized trials: A practical guide.

3/4 Block randomization and multi-site experiments

- Primary: Miratrix, Weiss, & Henderson (2021). An applied researcher's guide to estimating effects from multisite individually randomized trials: Estimands, estimators, and estimates.
- Further: Pashley & Miratrix (2021). Block what you can, except when you shouldn't.

3/6 Block randomization: inference models

- Primary: Raudenbush & Bloom (2015). Learning about and from a distribution of program impacts using multisite trials.

3/11 Introduction to power analysis

- Primary: Lakens (2022). Sample size justification.
- Recommended: Dong & Maynard (2013). PowerUp!: A tool for calculating minimum detectable effect sizes and minimum required sample sizes for experimental and quasi-experimental design studies.

3/13 Power analysis: An extra jolt

- Recommended: Dong & Maynard (2013)

3/18 Cluster randomization

- Primary: Bloom (2005). Randomizing groups to evaluate place-based programs.
- Further: Kahan et al. (2022). Estimands in cluster-randomized trials: Choosing analyses that answer the right question.

3/20 Cluster randomization (continued)

- Recommended: Raudenbush (1997). Statistical analysis and optimal design for cluster randomized trials.

3/25 Spring Break (no class)

3/27 Spring Break (no class)

4/1 Power analysis revisited

- Primary: Dong & Maynard (2013).

4/3 Non-compliance

- Primary: Gerber & Green (2012), chapters 5 and 6

4/8 Non-compliance (continued)

- Recommended: Angrist, Imbens, & Rubin (1996). Identification of causal effects using instrumental variables.
- Recommended: Abadie (2003). Semiparametric instrumental variable estimation of treatment response models.

4/10 Attrition

- Primary: Gerber & Green (2012), chapter 7.

4/15 Attrition (continued)

- Further: Zhao & Ding (2022). To adjust or not to adjust? Estimating the average treatment effect in randomized experiments with missing covariates.
- Further: Lee (2009). Training, wages, and sample selection: Estimating sharp bounds on treatment effects.

4/17 Generalizability

- Primary: Tipton & Olsen (2018). A review of statistical methods for generalizing from evaluations of educational interventions.
- Recommended: Stuart, Bradshaw, & Leaf (2015). Assessing the generalizability of randomized trial results to target populations.

4/22 Generalizability (continued)

- Primary: Tipton & Matlen (2019). Improved generalizability through improved recruitment: Lessons learned from a large-scale randomized trial.
- Recommended: Tipton & Olsen (2022). Enhancing the generalizability of impact studies in education.

4/24 To Be Determined

4/29 Discussion of research proposals

5/1 Conclusions and reflections