



Imaginary barriers to reproducibility: short courses with diverse students

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Take Home Message:
Even with very short
courses it is possible to
teach Reproducible,
Responsible Research
Methods

- Our Short Courses
- Curriculum
- Reproducible,
Responsible Research
Methods
- Assessment inspired by
open science

Short programmes

- MSc Conversion – Zero to Heroes

- Diverse skill sets – dancers and computing science graduates in the same class
- About 30 hours to learn quant methods, stats and communication
- Graduate with accredited psychology degree

- MSc Data Skills

- Graduates coming from undergrad psych and neuroscience degrees & plan to do a PhD.
- Some have R skills, many have research methods and stats knowledge, many don't have any of this
- 20 hours of Data skills that prepare students for advanced Stats

Reproducible philosophy embedded into as many other places as we can – seminar events, M&Ms club, professional skills class

Curriculum (Zero2Hero)

- Intro to R
- Data wrangling
- Chi-square
- Correlation
- T-test
- ANOVA
- Regression

- At each stage:
 - Data wrangling
 - Visualisation
 - Assumption checking
 - Power and effect size
 - Multiple comparison corrections
 - Pre-registration
 - Reproducible scripts

Curriculum (Zero2Hero)

- Blended support
 - Computing & programming basics
 - Video walkthroughs
- Realism
 - Most Conversion students have a very specific career goal in mind & this usually has nothing to do with statistics
 - But! We can still leave them with the understanding of how data and results are “made”

- Supplementary analyses
 - Permutation tests
 - Non-parametric tests
 - Data transformation
 - Simulation
 - rtweet
 - tidytext

Assessment & feedback:

Research Methods 2 mini-project

- Secondary data analysis
- Research proposal
- Pre-registration
- Reproducible analysis plan on simulated data
- Simple statistics (correlation & t-test) done properly

Open science style

Open Science can be inspirational for teaching

- Pre-registration makes teaching statistics *easier*
- As do reproducible scripts (what *have* you done??)
- Working with real data prepares students for their dissertations
 - And highlights why the reproducibility crisis happened

Assessment & feedback:

- Peer reviews of pre-prints
- PsyAccelerator style group-work
- Reproducible scripts
- Resource of real data at every point
- Doing less well

Open science style

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If you think...

- I couldn't do this because our students can't cope with it
 - Yes they can/they weren't coping with SPSS either
- We don't have enough people who know R
 - Upskilling doesn't have to just be for students
 - Almost all of this can be done with other software, R is just easier

- There are more important things to focus on/we don't have the time
 - (You're probably at the wrong conference)
 - Question of priorities
 - What does a psychology graduate need to know?
 - Simple things done well > a complicated car crash

Keep the bigger picture in mind: Reproducible science

OPEN MINDS

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