

R for the Student

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Dusty's Thoughts to flesh out somewhere

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When teaching, is the intent to teach coding in R, or is it to use R as an aide to teach statistics? This will drive what you do and why you do it.

What is the intent of teaching with R?

I have taught advanced introduction to probability and statistics and used R as a tool to teach statistics. We introduced it by showing how it can be a good calculator – and along the way taught some of the R Studio functionality (projects/setting working directory, how to execute lines of code, save variables, etc).

I have also taught sabermetrics where we taught coding in R. So we needed to do data analysis (and we worked under the assumptions that our cadets knew basic statistics) so I taught the coding as a means of data analysis.

Do you “give students code”?

You have two options:

- 1) Give students code before class.

The advantage here is that you can talk concepts and the syntax and inevitable mistyping, etc does not inhibit the larger purpose of the instruction.

The disadvantage is that students don't get intimate with the coding process and learn the necessary skill of trial and error.

- 2) Don't give them code and expect them to keep up.

The advantage is that cadets are learning the process of coding and “own” the code while they write it.

The disadvantage is instead of teaching concepts, students are distracted by keeping up with the coding and missing out on the statistics lesson

My recommendation – you give code if your intent is teaching statistics. You don't give code if the intent is that cadets learn to code.

Abstract

Introduction

The R Ecosystem

CRAN

R Studio

Tidyverse

Installation

paraphrase what's in R Cookbook?

Installing R

Installing R Studio

Installing the Tidyverse

Using R

Loading Data

Plotting

quick intro to ggplot

That graphical tool for ggplot?

Plotting Multivariate Data

ggpairs?

Bibliography

R-knitr R-rmarkdown