Developing online resources on statistics and data handling for medical science students

Catriona J. Cunningham and Derek Scott
School of Medicine, Medical Sciences and Nutrition, University of Aberdeen, UK
catriona.cunningham@abdn.ac.uk @RegenMedCat

Background

Statistics and data handling are essential skills in medical sciences. However, our recent Internal Teaching Review highlighted that students wanted more teaching in this area. We aimed to address this by developing new accessible online resources. Coding skills can increase employability as experience of open access programming languages is increasingly in demand. We therefore included resources to introduce students to R.

Summary of work

We developed two resources called “A Practical Guide to Data Analysis” and “Introduction to R” in the format of short lecture recordings including demos. To allow students to conduct analysis in their own time, we also made simulated datasets, cheat sheets and a R notebook containing code with the expected outputs (Fig. 1). While targeted at levels 3 and 4, all medical science undergraduates had access through a shared MyAberdeen site. Online surveys with both 10-point Likert scales and free text questions were used to collect feedback.

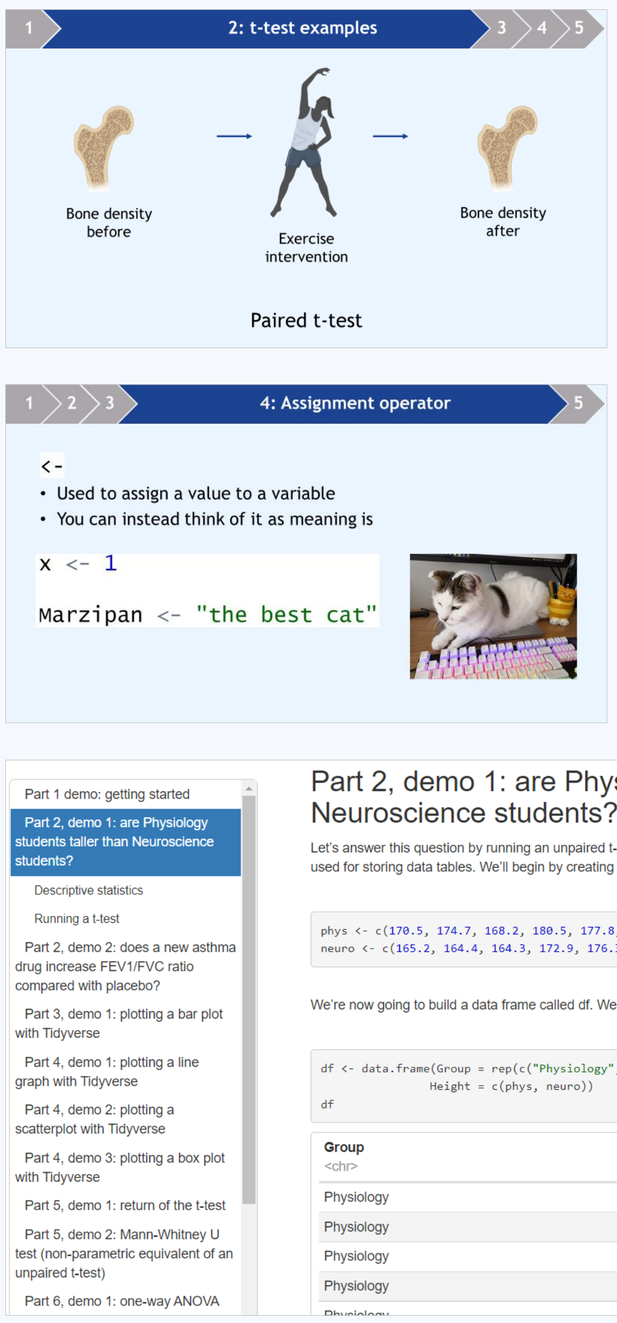

Figure 1: Screenshots of example lecture slides, statistics cheat sheet and the R notebook.

Feedback

The median rating of A Practical Guide to Data Analysis was 10 (n=6) and the comments were overwhelmingly positive (Fig. 2).

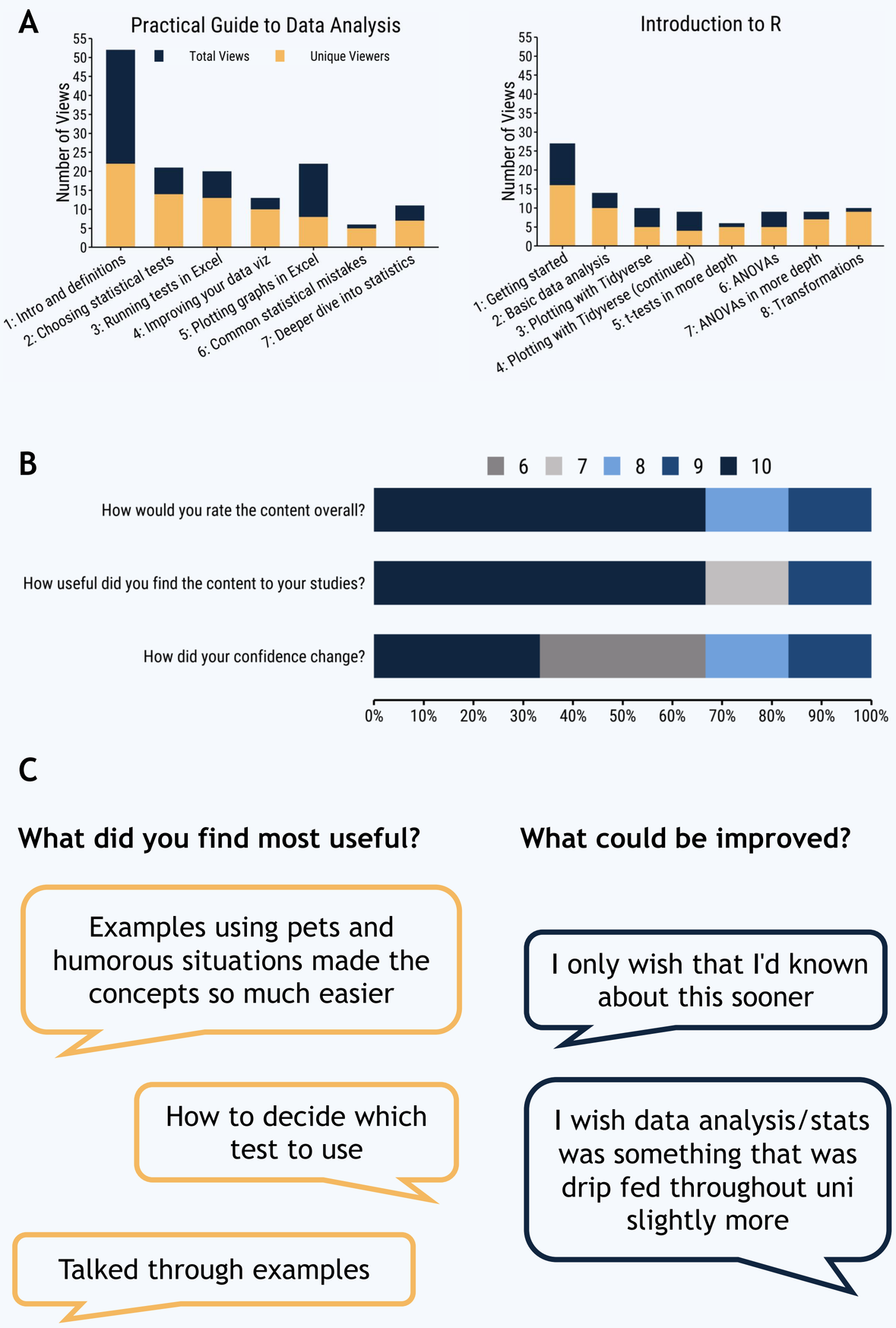

Figure 2: Lecture recording views (A). Likert scores (B) and free text comments from the survey (C) of A Practical Guide to Data Analysis.

Discussion

- Feedback was very positive and students particularly liked the use of examples to explain complex material
- However, engagement was relatively low which could be to due to lack of awareness or difficulty in finding the resources
- Another factor could be a preference for F2F teaching
- We also ran two data analysis workshops for honours students and attendance at the F2F session was higher compared with the Collaborate session (n=15 vs. n=8)
- Feedback collection for the Introduction to R is ongoing