HUMBOLDT-UNIVERSITÄT ZU BERLIN

Open Science Seminar: Management Accounting Made Easy

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The idea of this experimental seminar is to learn the fundamentals of Open Data Science by jointly evaluating the findings of a field experiment on the effects of self-regulated online learning and procrastination on exam performance. Last semester, we offered the newly developed online training tool "Management Accounting Made Easy" (MAME) to students of the Bachelor level course "Kostenrechnung". MAME consists of five additional online tests with extensive feedback, covering the full course material. The tests were provided to participating students over the course of the term to match course content, roughly following a bi-weekly schedule.

Because of fairness concerns, all students had the opportunity to volunteer to participate. All non-volunteering students were randomly allocated to three groups (group A, B, C), whereas the volunteering students were randomly allocated to groups A and B. All randomization was being done based on gender bins. Group C was as a control group not invited to join the MAME program. Groups A and B were invited to the MAME program with group A having to complete the additional online material within a two-week time period whereas group B had the flexibility to work with the material at their own discretion.

The idea of this research seminar is to jointly evaluate the effects of MAME. Relevant research questions include but are not limited to:

- Has MAME affected the likelihood of exam participation?
- Has MAME affected exam performance?
- Has MAME-induced procrastination affected exam performance?

The seminar is limited to 20 students and open to all levels (Bachelor, Master, Doctoral) and programs. The learning objectives of the seminar are:

- You will become familiar with a collaborative open source-based scientific workflow for data analysis. This implies that you will learn how to use R and Github to produce reproducible high quality scientific output.
- You will learn to master the basic steps of data science: Import, Tidy, Transform, Visualize, Model, Analyze, and Communicate.
- You will learn how to audit code and how to critically evaluate other people's data work.

While this is not the core focus of the seminar, I also expect us to learn something about the educational aspects of self-regulated online learning and the effect of procrastination on learning outcomes.

The seminar has no formal prerequisites, but I will rely on the following

- This is not an R programming course. You need to familiarize yourself with the fundamentals of R (including RStudio and the tidyverse) as we move along. I think that the textbook "R for Data Science" (http://r4ds.had.co.nz/) is a perfect companion for the course.

- You need to feel comfortable to use Github as we will be using it as our platform for collaboration. You need to register yourself on Github in order to apply to the seminar. If you have not heard of Github yet, multiple useful resources are available on the web. A potential start is https://guides.github.com/activities/hello-world/ and, for linking RStudio with Github, https://support.rstudio.com/hc/en-us/articles/200532077-Version-Control-with-Git-and-SVN. If you are one of these youtube kids, you might try https://www.youtube.com/watch?v=E2d91v1Twcc. Don't blame me if the video is boring or uninformative. I am not a youtube kid.

Successful completion of the seminar will be rewarded with 6 ECTS. I will evaluate your performance based on your performance in class and your input into our joint project as documented via Github (acting like an online portfolio documenting your learning process). I expect students to take different roles in that regard. Beginners might contribute by coding relatively easy tasks, intermediate students can shine by tackling the more challenging bits and I expect seasoned researchers to contribute by coaching fellow students, auditing code and by moving the overall project along.

While the largest part of the seminar will be administered online via Github-based collaboration, we will also have a series of meetings to coordinate the project and to discuss its progress.

Date	**Topic**
Fr., 10.11.2017, 14:00 – 17:00 h	Introduction, Tidying Data
Fr., 01.12.2017, 14:00 – 17:00 h	Research Design
Fr., 12.01.2018, 14:00 – 17:00 h	Communicating Evidence
Fr., 02.02.2018, 14:00 – 17:00 h	Wrap Up and Discussion

To apply for the seminar, please send me an email by **Friday, 03.11.2017,** containing a current grade transcript (Agnes suffices) and your Github account ID so that I can add you to our private repository. **By applying to the seminar, you also accept the fact that your grading will be partly based on Github data and commit to ethical behavior in class.**