GLODE 304 – Quantitative methods and Research Planning – 10 ECTs
Overall evaluation – Spring 2018

Learning Outcomes

Knowledge:

The student will have in-depth knowledge of:
- *The requirements for the master's thesis proposal*
- *The appropriate use of a range of statistical methods/techniques*
- *The interpretation of statistical analysis*

Skills:

The student has the ability to:
- *Code research data into analysable data sets*
- *Pose study questions that can be addressed using statistical methods*
- *Model data using alternative approaches and decide on final approaches to an analysis*
- *Annotate and interpret output from statistical analyses*
- *Format tables and graphs that present statistical analyses*
- *Design a research project and write a project plan*

General competencies:

By the end of the course the student:
- *Can think critically, reflectively and creatively about statistical analysis*
- *Has methodological competencies for statistics-related skills problem-solving*
- *Can choose appropriate statistical analyses given the nature of the study data*

Teaching methods

Lecture, practical exercises using multiple modalities, written feedback, presentations, critical analysis of journal articles, and an expectation of independent study outside of class.

Compulsory assignments

One written annotated analysis assignment and a draft thesis project presentation.

Assessment

Take home exam with a word count target of 2500 words.

The course started on 5th March and ended on 20th April with the submission of a home exam (4.5 days). The core teaching of the course included seven double lectures and eight double seminar/workshop periods. Additionally, there were: a single ethics lecture with a double ethics seminar, a double lecture period devoted to students presenting their draft thesis research projects, and a single seminar for the evaluation.

Six students were signed-up for the course, however, two never attended (one was a student who has left the GLODE course, and the other was a visiting student). The **four current GLODE students** very regularly attended and were active participants.

The course provided a survey of a wide range of techniques for quantitative data analysis using IBM SPSS. The course closely mirrored the content and structure of the *SPSS Survival Manual* by Julie Pallant (2016, 6th ed), including: creating a data file, screening and cleaning a data file, producing descriptive statistics, making graphs in SPSS, manipulating data, reliability analysis, choosing the right analytical technique, correlation, partial correlation, multiple regression, logistic regression, factor analysis, t-tests, one- and two-way ANVOA, mixed between-within groups analysis of variance, ANCOVA, and multivariate analysis of variance. Additionally, crosscutting themes included: writing

findings in APA style, critical thinking for quantitative analysis, basic statistical concepts (e.g. the central limit theorem), and developing a quantitative research project.

Before the course began, students responded to a brief survey about their experience of, interest in, and comfort with quantitative methods. The results guided the content of the introductory lectures to ensure that all students understood the concepts required to engage with the subsequent material. Due to the small class size, it was possible to adjust the delivery of the course to the students' needs and learning styles. The best example of this was adjusting the structure of the course from usual class days with a double lecture followed by a double seminar, to class days having two blocks, each containing one lecture and one seminar. Lectures were delivered in a fashion that sought student engagement, discussion, and questions. Additionally, due to the cumulative nature of the course subject, lectures frequently returned to previous day's discussions to ensure students had a strong understanding of foundational concepts. Seminars utilized three different modalities for the practical application of analytical techniques in SPSS: "walking through an analysis" (Paul proceeding through an annotated analysis step-by-step as students did the same on their own workstation), using a "recipe" (Paul providing a step-by-step guide for independent work), answering questions as they arise, and going through the analysis afterwards), and applying examples directly from the Pallant book. Paul used these respective techniques at different junctures in response to students' stated preferences, as well as their performance. Students had one assignment that was taken from the 2017 implementation of GLODE 304. The assignment asked them generate a small data set; produce some descriptive statistics; and run relevant factor analysis, reliability analysis, and regression procedures. Students received written feedback (about 2 pages single-spaced) on the assignment within a week of their submission. One student requested the opportunity to resubmit, and Paul reviewed the new submission and provided additional feedback.

Paul taught all sections of the course during which only GLODE304 students were present. There were two lecture sessions during which GLODE 303 and 304 students were present: one general ethics lecture given by Victor, and first day of the course co-taught by Paul and Siri, outlining the expectations for the respective courses and the students' research proposals.

Student evaluation

At the end of the course, a student-led, focus group style evaluation of the course took place. Overall, students indicated that they were satisfied with the course content, presentation and organization; and noted that they were satisfied with the lecturer's teaching style. Their primary critiques were: the course was too short[1], GLODE 302 did not adequately prepare them for the course, and the required research project presentation was a poorly timed distraction from their preparations for the exam[2].

A few more specific notes of student feedback:

Content of lectures and seminars: Students described the content as "comprehensive" and "well-structured". They would have preferred additional time spent on discussing choosing the right analytical technique. Additionally, students would have like to have a longer introduction to statistical concepts, but also acknowledged that this would require adjusting the length of the

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[1] They would prefer to cover the same content but over a longer period with more contact hours.
[2] It was scheduled for the last class day.

course. Lastly, students asked to have a lecture on finding and using secondary data sources, because they are expected to undertake secondary analyses for their thesis.

Written feedback, course adjustments, and Review Materials: Students expressed strong satisfaction for the feedback they received, the adjustments made to the course in real-time, and the review sheet provided for them near the end of the course.

Expectations outside of class: Paul told the students that after each class day that they were expected to practice what they had learned using the additional exercises in the Pallant book, and to bring him any questions that arose. Students suggested that they wanted less independence, and that the lecturer could assign additional readings and exercises to impress further upon them the importance of regular practice/knowledge self-checks.

Staff evaluation

Overall, Paul believes the course went well given the duration of time available to him to write and implement the course.

He agrees with the students that the amount of material included in the study plan may be too much for a 10 ECTS course, and so, if the course will remain the same size, the number of topics should be reduced to allow for additional depth. In this approach, techniques that students are likely to use in their thesis should be foregrounded, and topics that are less likely to be utilized by students[3] could be removed.

Additionally, Paul will also be responsible for 302 in the fall, and so he will design the quantitative lectures in that course to better prime the students for the content of 304.

Paul believes that the course assessments should be restructured to better reflect the learning goals of the course. This opinion is based on the fact that the students performed poorly on the course assignment – which was borrowed from last year's implementation of 304. Moreover, the students performed well on the exam, but Paul believes that a take home exam format does not optimally achieve the learning goals of the course.

The core objective of the course is to give students the ability to think critically, reflectively, and creatively about statistical analysis; and be able to apply those abilities when writing their thesis. Due to this fact, Maurice Mittelmark's assessment method from HP302 – expecting the students to write a series of annotated analyses, and then let the student choose a subset of these analyses for a portfolio assessment – is merited. This supports the learning goals, the cumulative nature of the content, and the students' desire for more structured work outside of class. Giving the lecturer multiple opportunities to assess students' progress will also allow her/him to better accommodate students with little/no quantitative background. Additionally, this assessment method will model how students can systematically engage with and solve the types of problems that they will face when writing their thesis.

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[3] For instance, techniques associated with experimental research.