Project: Flipping the classroom to enhance student wellbeing and employability outcomes through collaborative problem-based learning activities and online modules for advanced design and data analysis

**Update on Learning and Teaching Initiative Grant 2019**

The development and implementation this project is currently underway and is progressing well. This LTI is focused on developing a set of supportive learning materials for Masters and Honours students taking the PSYC40005 Advanced Design and Data Analysis (ADDA) course offered through The School of Psychological Sciences, in the faculty of Medicine, Dentistry and Health Sciences. The project is being carried out by Andrew Legg, Campbell Prior and Felix Singleton Thorn (all former tutors in this course) under the direction of Geoff Saw (a lecturer for ADDA). Thus far, 6 out of the 10 planned learning modules have been completed, and the others are nearing completion.

Each learning module focuses on a different statistical concept or technique (e.g., multilevel modeling, factor analysis, multidimensional scaling, etc), and is directly aligned with a particular week’s lecture and course content. Each learning modules consists of two parts; a set of in-class activities and a set of flipped-learning materials. The flipped learning materials consist of two short videos and a set of self-assessment materials. The first video in each pair provides a conceptual introduction to each statistical technique or approach, and the second demonstrates how the technique can be applied in a particular statistical program. The self-assessment materials have been designed to facilitate student learning, and each is accompanied by a detailed set of feedback giving not just the correct answer, but also detailed justifications and descriptions of why other possible responses would not be correct.

The in-class content consists of two activities per teaching week, a data-analysis project requiring students to perform statistical analysis on a real-world dataset, and a small group collaborative in-class activity. The datasets have been found, and problems-sets and guiding questions have been developed along with detailed answer. The accompanying small group activities will involve 4-5 students at a time and require classes to collaborate and provide peer feedback. These activities have been developed to help students develop an understanding of the conceptual underpinnings of the statistical concepts and techniques used in data-analysis by making students actively engage with problems that require not just a procedural knowledge of the statistical analysis, but additional understanding of the conceptual basis of these techniques. We are currently on track to be able to deliver these learning modules to students through the LMS well in advance of each week’s course material.

**Planned assessment of student outcomes**

Key performance indicators will be based on student engagement, performance and student course evaluations measured by engagement with the online materials, performance in the fourth-year statistics program. A qualitative survey will be developed to assess the impact of the intervention on students and responses will be gathered from the teaching staff. Ongoing evaluation of the project will occur across 2019. A full summary of the project including key performance indicators and a detailed breakdown of expenditures against the project budget will be delivered before 31 January 2020.

Regards,   
Geoff Saw, Felix Singleton Thorn, Campbell Pryor, Andrew Legg