

Appendix A: Research Proposal

“Flipping” the classroom: are students engaged?

PI, AI 1, AI 2

Introduction

The flipped classroom is receiving increased attention although it is not a new approach (Watters, 2012). Flipped learning, otherwise known as the inverted classroom, is a pedagogical approach that requires students to do background reading/preparation (often involving elearning resources) prior to attending the face-to-face component of a course where the tutor facilitates learning through applied activities and discussion to foster deep learning (Davis, 2013; T. Schwartz, 2014). This approach, acknowledges that the role of the academic or teacher is changing from “sage on the stage” (and even “guide on the side”) to “meddler in the middle” as information is readily available to learners through the internet (McWilliam, 2009); in other words, how do academics add value when they are no longer the holder of knowledge and the information typically delivered through lectures is easily accessible elsewhere? Theories of flipped learning indicate that one way academics can add value is through structuring the learning which requires greater cognitive load in the face-to-face sessions (Abeysekera & Dawson, 2015; Davis, 2013). Advocates for flipped learning argue that this model is informed by constructivist learning; the flipped classroom thus supports active learning (rather than passive teacher-controlled learning typified by the didactic lecture/tutorial structure) through students actively observing, interacting and interpreting (Pierce & Fox, 2012). What is more, it is argued that flipped learning has the capacity to develop metacognitive skills as students prepare for the face-to-face workshop/tutorial and reflect on their learning process (Davis, 2013). According to Abeysekera & Dawson (2015) the flipped classroom has the potential to provide both extrinsic and intrinsic motivation for students (see Figure 1 for their theoretical model).

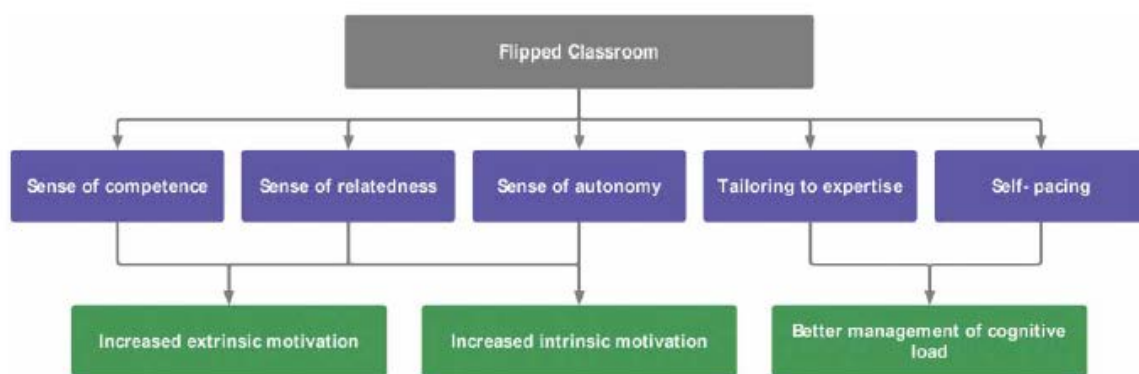


Figure 1: Abeysekera & Dawson’s theoretical model for the flipped classroom (2015, p.10)

Abeysekera & Dawson (2015), however, warn that there is a lack of evidence to support the large-scale implementation of the flipped classroom and they pose a number of propositions to test their theoretical model which is based on self-determination and cognitive load theories. They argue that students are more likely to be engaged in their learning if the environment supports self-determination, which the flipped model is designed to enable. The literature on engagement indeed confirms students’ need for competence, autonomy and relatedness and the ability to demonstrate key ‘engagement behaviours’ including attending class, following tutor directions, completing both in class and out of class assignments and holding positive attitudes to the subject (Finn & Zimmer, 2012). As identified in the literature on flipped learning, one of the stumbling blocks is students’ failure to come to the face-to-face sessions prepared suggesting a lack of ‘engagement’ (Abeysekera & Dawson, 2015; Freeman Harreid & Schiller, 2013; Milman, 2012; Mok, 2014). This research project

aims, therefore, to address Abeysekera & Dawson's call for further research; in particular, to investigate whether a small-scale, localized flipped classroom intervention successfully engages students.

Research Setting

The unit runs two semesters, and is taught by tutors in workshops of 25 students per class, and is one of several units utilizing a flipped approach. Given the shift to the new structure it is timely to explore the impact on student learning and identify how their learning is best facilitated with this new approach. Furthermore, as first year students, their engagement in the first year curriculum is a predictor of later success. It is therefore essential that we gain an understanding on their level of engagement with the flipped classroom in first year units.

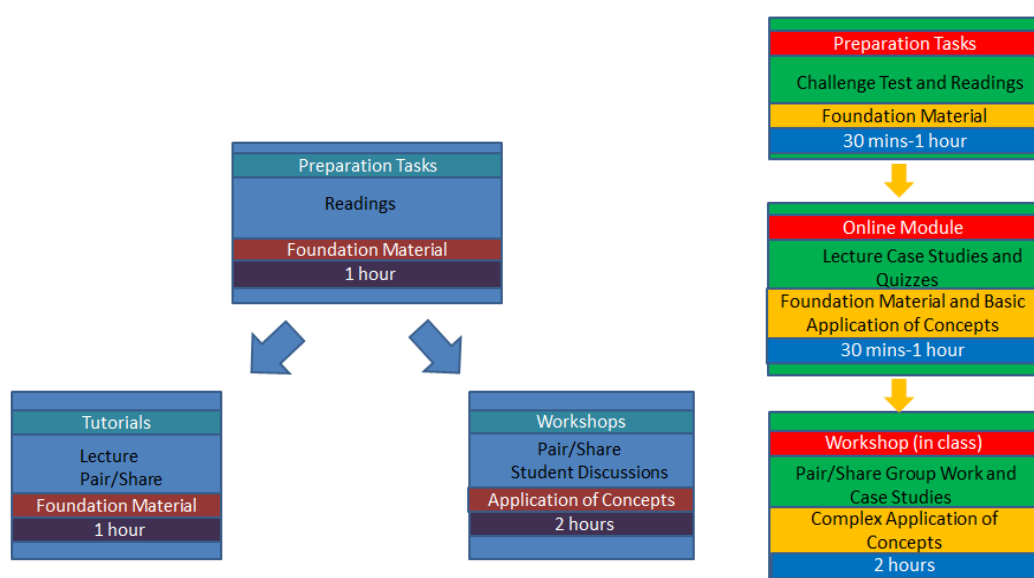


Figure 2: Delivery mode in 2015 (left) and in 2016 utilising fully flipped delivery (right)

The Proposed Research

The aim of this research project is to determine whether the flipped classroom model (new to Semester 1, 2016) is engaging first year students in their learning and identify ways to improve the student experience. The research aims to explore the following research questions:

1. Does the flipped/new unit structure engage students in their learning?
2. What elements of the unit design support engagement in the flipped model?
3. What improvements to the unit would enhance engagement?

Method

Research Design

A mixed methods approach to the research design will be adopted in an effort to gain an understanding of the student experience in the unit. Data will be collected over first semester, and will involve both students and tutors as participants. Existing data readily available to the PI will also be collected for analysis (including eVALUate, Blackboard learning analytics, attendance records and plagiarism rates). A comparison between 2015 and 2016 data will be made where appropriate.

Participants

Students enrolled internally in the unit in semester one, 2016, and tutors teaching in the unit in semester one, 2016.

Measures and Procedure

A mixed methods approach will be used to address the research questions.

1. Blackboard© data on student access to online pre-preparation material. (quantitative)
2. Incidents of plagiarism (including a comparison with 2014 data, where the unit was not utilizing a flipped approach). (quantitative)
3. Student attendance for the workshop. (quantitative)
4. In week 5 of the semester a 5 minute online anonymous “stop, start and continue” exercise to determine what is working/not working in support of student learning (see Appendix E). (qualitative)
5. At the end of semester an anonymous online questionnaire (the validated measure) the Flipped Classroom Student Engagement Questionnaire Version 2.2 (Kynn, Taylor, & Cole, 2015) (see Appendix F) to explore students’ experience of the flipped approach. (quantitative and qualitative)
6. A focus group with tutors to explore their perceptions of whether students were engaged, prepared, and if the flipped approach supported student learning (Appendix G). (qualitative)

Proposed analysis

Qualitative

Qualitative data from the online questionnaires and the focus group will first be prepared for thematic analysis by the researchers familiarising themselves with the data set and cleaning/organising the data (e.g. the focus group transcription will be cross-checked with the audio file by the researcher who facilitated the session). An inductive process will be used to identify themes, following a preliminary exploratory analysis (Creswell, 2012). As recommended in the literature, a reflexive dialogue between researchers will be entered into to explore the process, and decisions, associated with identifying themes (Braun & Clarke, 2006).

Quantitative

The outcome measures which are assessed on a continuous scale (eVALUate scores, student marks, number of cases of plagiarism) will be compared between the two time points (2015 and 2016) using the Student’s t-test. The student attendance records will be compared between years using a repeated measures analysis (and treated as a continuous variable to examine the total attendance at each class). The attendance may be expected to be related to the week number through the semester. The responses to the Flipped Classroom Student Engagement Questionnaire Version 2.2 (delivered online only once, in 2015) will be summarised using standard descriptive statistics (frequencies and percentages for the Likert response questions). These will provide a measure of support (or otherwise) for the flipped classroom format. All analyses will be performed using the SPSS

v22 statistical software, and, following convention, a p-value<0.05 will be taken to indicate a statistically significant association in all tests.

Outputs

Peer reviewed paper: HERDSA

Ethical Considerations

Whilst the proposed research involves students enrolled in this unit, and two of the investigators are the unit coordinators and teach in the unit, the dependent relationship will be managed/mitigated by:

1. Most of the data is readily available to the principal investigator as part of their role as the unit coordinator (eVALUate data, learning analytics from Blackboard, student attendance in tutorials, and plagiarism rates).
2. Recruitment of student participants for the in class online questionnaire in week 5 (a “stop, start, continue” process often conducted as part of teaching quality (T. A. Schwartz, 2014)) will be anonymous and carried out by the team of tutors for each class [Appendix E]. None of the tutors are part of the research team. Students will be provided with an information sheet and participation will be voluntary. As the questionnaire will be entirely about the student experience in the unit (what is working well, what is not working well and what they would like to see) and it will be anonymous it poses minimal risk. To ensure tutors follow ethical recruitment processes training will be provided in one of the normal tutor meetings prior to week 5. For the tutorials where the investigators teach, the co-tutor will facilitate the questionnaire whilst the researcher leaves the room.
3. Recruitment of student participants for the end of semester in-class online questionnaire will be carried out by the same tutors who will have undergone training and students will be able to opt out of their feedback being part of the data set by ticking a box (Appendix F). For the tutorials where the investigators teach, the co-tutor will facilitate the questionnaire whilst the researcher leaves the room.
4. The proposed end of semester focus group will be conducted by AI 1, and recruitment and participation conducted in accordance with ethical standards. The questions will be about the tutors' experience of student learning in the unit and is a normal part of quality processes conducted in the unit (see Appendix G). A Teaching Academic Scholarship Seed (TASS) grant from Curtin Teaching and Learning will be applied for to pay tutors for their participation in the study (as it will involve mainly sessional staff).

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