

THEY MAY NOT LIKE IT, BUT IT IS GOOD FOR THEM!

Pam Megaw^a, Monika Zimanyi^b, Kathryn Meldrum^c

Presenting Author: Dr Pam Megaw (pam.megaw@jcu.edu.au)

^aBiomedicine, James Cook University, Townsville QLD 4811, Australia

^bAnatomy and Pathology, James Cook University, Townsville QLD 4811, Australia

^cTeaching, Learning and Student Engagement, James Cook University, Cairns QLD 4870, Australia

KEYWORDS: flipped classroom, 5E's framework, traditional classroom, academic performance

BACKGROUND

We co-teach first year foundation sciences (anatomy and physiology) to approximately 320 allied health students studying four different professional programs (Occupational Therapy, Physiotherapy, Speech Pathology, and Sport and Exercise Science). The student group is comprised of just over half first-in-family, and one third regionally based students. The academic background of the students is very diverse, with Overall Position (OP) entry scores ranging from 1 to 22 (equivalent to ATAR 99.95-35), with just under half of OP15 (ATAR 87) or lower. In the past, the subject materials have been delivered as three didactic lectures per week followed by a two hour practical session (i.e. 'traditional delivery'). The result has been a high level of student under-performance, attrition and disengagement.

In order to address these issues in Semester One, 2015 we delivered the physiology component of the subject using a 'flipped classroom' method. The physiology learning plan was structured using the 5Es framework with the Engage and Explore phases constituting the 'flipped' component of content delivery. The delivery of the anatomy component of the subject was maintained in the 'traditional' mode. The intention of changing delivery style was to increase student engagement with the content and hence increase student performance and retention.

AIMS

To determine whether students preferred the flipped classroom teaching as compared with traditional didactic delivery and whether there was any impact on academic achievement.

DESCRIPTION OF INTERVENTION

The four weeks of the physiology component of this subject were delivered in a flipped classroom mode. Four weeks of anatomy were delivered in traditional didactic mode, with three lectures and a two hour practical per week. The delivery styles were inter-mixed over this eight-week period. The remaining five weeks of semester were delivered in traditional didactic mode.

DESIGN AND METHODS

Students were asked to complete an anonymous questionnaire two weeks after the conclusion of the delivery of the final physiology component. Students were asked about their attitude to both the traditional and flipped delivery, their perceptions of preparedness for assessment and their engagement with both traditional and flipped materials on the learning management system. Students registered their responses to questions using a four-point Likert scale. Data from the questionnaires was analysed for differences in the frequency responses of the different cohorts taking the subject.

RESULTS

Overall, the students preferred the traditional delivery method. Physiotherapy students most strongly preferred the traditional method, while Speech Pathology and Sport and Exercise Science students were less strongly in favour of the traditional method. Students also felt better prepared for quizzes when content was presented using the traditional teaching method, and the Occupational Therapy and Speech Pathology students felt unprepared for quizzes when content was delivered using the flipped teaching method. Despite student perceptions of their preparedness, on average, students

performed 20 percentage marks (20%) better on the quizzes that assessed content delivered using the flipped method when compared with those that assess content delivered using the traditional method. This increase in performance was consistent across the four student cohorts.

CONCLUSIONS

Our students had a strong preference for, and were more confident of, their preparation for assessment using the traditional teaching method. However, their academic performance was much stronger when the content was delivered using the flipped classroom model.

As the students were first year, first semester students, pre-conceived ideas on how they might be taught at university should have been minimal. As such, the finding that they preferred the traditional model is surprising, as the flipped classroom involves them much more actively in their learning than the traditional model. It is possible that students felt that the material delivered traditionally focused only on what would be assessed when in reality what is delivered is broader. This misperception could engender a false sense of confidence in preparedness for assessment.

The flipped model of content delivery relies on students preparing for the face-to-face sessions. It is likely that the students were uncomfortable with this as it relies on them taking responsibility for their own learning. It is also possible this is the first time students have experienced this approach. As a significant proportion of the students scored low in the OP ranking, it is also likely that they may not have the academic skills to enable them to learn independently and increased scaffolding of tasks may be required to engender confidence in their performance.

Proceedings of the Australian Conference on Science and Mathematics Education, Curtin University, Sept 30th to Oct 1st, 2015, pages 49-50, ISBN Number 978-0-9871834-4-6.