Engaging first year students in Biochemistry through co-design of module delivery

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Introduction

- As cohorts become larger and more diverse, there is a need to comprehend how to engage students (Coates and McCormick, 2014).
- This can be done by encouraging the 'students as partners', placing them in a more active role, considering them as 'co-producers' (McCulloch, 2009).
- A partnership approach
  - provides an opportunity for students and staff to appreciate each others' perspectives and reduce barriers to learning (Curran and Millard, 2016)
  - has been highlighted as an important factor in the enhancement of learning and teaching (Gibbs, 2010; Trowler, 2010)
  - provides a learning and teaching experience which is more engaging and effective for staff and students (Cook-Sather et al., 2014).
- Three dimensions of student engagement have been reported in the literature - behavioural engagement, emotional engagement and cognitive engagement (Curran, 2017).
- Research has shown that it is the combination of the three dimensions for the student which is important and is something to be considered when co-designing with students and maximising engagement (Solomonides, 2013).

Aim

- To co-partner with students through co-design of module delivery to enhance student engagement and overall experience.

Methods

- This study refers to a first year second semester Module which is taken by both MPharm and MSci students in the School of Pharmacy and Pharmaceutical Sciences.
- Feedback from TAQs and Module Evaluations - the Biochemistry in semester 2 is a "dry" subject area and is long and laborious to learn.
- Co-partnered with first and second year students.

Second year students:
- Focus group - during a practical class
- Individual basis - during Studies Advice meetings
- Basic questionnaire as a guide

First year students:
- Focus group - during a workshop
- Explained the nature and aim of the study and provided them with a questionnaire as a guideline.

Results

Results - Second year cohort, N=12

What they liked about the lectures	What they did not like about the lectures	What could be done to improve the lectures
"In class questions, quizzes and MCQs throughout the lectures" x10	"Found it overwhelming"	"Nothing" or "Not sure" x3
"Content"	"Found it hard to remain focussed"	"Regular questions"
"Powerpoints" x2	"Too much information at once"	"More interactive sessions"
"Good pacing of lectures"		"More practice questions" x2
"Diagrams and flow charts on slides to help understand processes" x2		"Declutter some of the slides"
		"Could content be reduced?" x2
		"Content split apart with questions throughout"

Results - First year cohort, N=32

Learning Style
- 50% prefer a mix of learning, i.e. recorded lecture and active learning in class with quizzes, MCQ's, apps, etc.
- 44% of the class said they prefer the traditional style of teaching, i.e. lecture and listen.
- 6% of the class prefer out of class recorded lectures.
- 75% prefer to answer questions anonymously in class.

Use of virtual learning environments and apps
- 94% said that they "always" accessed material on Blackboard Learn VLE.
- 25% had used apps in or out of class - Nearpod (12.5%) or other (12.5%)
- The majority of the students who had used Nearpod did not like it (75%) as they were unsure how it worked and did not like being out of control of the slides.
- The other apps used (Anki, Kahoot and Google Classroom) received positive feedback.

Reflection and Plan for Implementation

- Traditional lectures in class and recorded - with lecture material summarised with supplementary reading.
- Active learning activities in class such as quizzes and MCQs.
- Optional use of technology in class to ask and answer questions.
- All materials available on Blackboard learn in advance of class.

- Continual 'partnership' with the students through 'in class' discussions, informal chats and Studies Advice meetings.
- Evaluation at the end of the lectures through Teaching Assessment Questionnaires and focus groups in order to evaluate the changes made.
- Universal Design for Learning (UDL) aims to provide an equal learning experience for every student which includes flexible ways of learning and flexible study resources (https://www.dmu.ac.uk/current-students/student-experience/udl.aspx).

Conclusions

- **Challenges**
  - Time being one of the main pressures for academic staff in today's climate (Marquis et al., 2017).
  - The ever-changing cohort of students also means that relationships need to be started and maintained and also the diversity of students within a changing cohort needs to be considered (Curran and Millard, 2016).

- **Positives**
  - Allowed reflection on approach in the classroom and helped the students reflect on their approach to their studies. Previous research has shown that partnership can aid personal development, improving self-awareness, knowledge and skills (Curran, 2017).
  - Extremely rewarding experience and has brought a better mutual understanding with students.

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