COLLABORATIVE INTEGRATION OF AN ONLINE MODULE FOR TEACHING MICROBIOLOGY TO UNDERGRADUATE NURSING

Kylie Hodgson, Professional Teaching Fellow, RN PgDip. k.hodgson@auckland.ac.nz
Contributors: Pauline Cooper-Ioelu (Senior Tutor, Learning Technology Unit) and Simon Swift (Associate Professor, Molecular Medicine and Pathology).

Background
Consistently, students have feedback to their teachers that they felt unprepared for the microbiology sessions. As the teaching sessions are presented by subject experts (microbiologists), they also found it hard to link the content to their nursing practice. This teaching problem led to the collaboration of a Nurse educator, subject specialist, and educationalist to emphasize the relevance of microbiology to nursing practice.

Aim
To improve the knowledge and application of microbiology to nursing practice.

Methods
Developed and design ‘flipped microbiology’, an online module as part of a wider strategy to improve engagement and student learning. We obtained feedback using an anonymous online survey, using a likert scale, and solicited open comments from students.

Findings
Student feedback indicates that student appreciate the flipped classroom model. Students commented that they felt better prepared to engage with the content in the lecture after having preparatory learning activities, including readings and some activities. Student feedback around the ‘lecture’ component of microbiology suggests that teachers need to adjust their teaching methods, so that the flipped model can be properly applied, and evaluated. Examination results improved after the introduction of the online module – in 2016 grades ranged from 34% - 85 and the in 2017 they ranged from 38% - 92%. There is a need for longitudinal and more rigorous evaluation to confirm the effectiveness of this method in our context.

Conclusion
The introduction of ‘flipped microbiology’ to a second year undergraduate nursing course shows promise. On reflection, aspects around teaching methods and more rigorous evaluation to confirm the effectiveness of this method in our context.

References:
Bergmann & Sams (2012). Flip Your Classroom: Reach Every Student in Every Class Every Day (pp.120-190).
Critz & Wright (2013). Using the flipped classroom in graduate nursing education, Nurse Educator, 38 (5), pp.210-213

Outcomes
During our pilot, there was less engagement by the subject experts than we had intended. However feedback suggests that even these small changes were a step in the right direction as students responded overwhelmingly positively to the changes. As Critz and Wright (2013) discuss, it is important to engage both the lecturer and student - while students maybe enthusiastic about a change to teaching methods, this pilot suggests that teaching staff may need support and ongoing development around their teaching for such innovations to reach their full potential.

Changes made
The Nurse educator will work closely with the subject experts to further improve their teaching, and the quality of pre- and flipped modules. Students will receive feedback when they engage with the online aspects of the module.

Teaching Microbiology to Undergraduate Nursing Collaborative Integration of an Online Module for

“the topic of microbiology is HUGE and was hard to see the link, to that of nursing”.

Zappe et al (2009) posit that “research into how students learn suggests that students need to be actively engaged with the course material to maximise understanding” (p2. Building on theories of learning, Bergmann & Sam (2012) offer a possible solution in the flipped classroom model. In 2017, we attempted to apply this model in a second year nursing course in the microbiology segment. The learning preferences of millennial students seems to align well with this pedagogical approach (Philips & Trainor, 2014).

Introduction to online module
Evaluation at end of semester by way of an anonymous questionnaire

Did the online resource/flipped microbiology assist you in your learning?

“Did not assist much, no answers were provided”

“did not have ‘come prepared to’ before lectures in all cases”

“Did not assist much, no answers were provided”

“Did not have ‘come prepared to’ before lectures in all cases”

“did not have ‘come prepared to’ before lectures in all cases”

“I can see the relevance to nursing; especially with diagnosis, signs, symptoms and treatments”

Outcomes
Infectious diseases are in the top ten causes of premature death worldwide at just below 50% (World Health Organisation, 2017).

References:
Bergmann, J.S. & Sams, A. (2012). Flip Your Classroom: Reach Every Student in Every Class Every Day (pp.120-190).
Bergmann, J.S. & Sams, A. (2012). “Building on Theories of Learning”, Bergmann & Sams (2012) offer a possible solution in the flipped classroom model. In 2017, we attempted to apply this model in a second year nursing course in the microbiology segment. The learning preferences of millennial students seems to align well with this pedagogical approach (Philips & Trainor, 2014).

Evaluation at end of semester by way of an anonymous questionnaire

Did the online resource/flipped microbiology assist you in your learning?

“I do not think it assisted much, no answers were provided”

“did not have ‘come prepared to’ before lectures in all cases”

“Did not have ‘come prepared to’ before lectures in all cases”

“did not have ‘come prepared to’ before lectures in all cases”

“I can see the relevance to nursing; especially with diagnosis, signs, symptoms and treatments”

Infectious diseases are in the top ten causes of premature death worldwide at just below 50% (World Health Organisation, 2017).

References:
Bergmann, J.S. & Sams, A. (2012). Flip Your Classroom: Reach Every Student in Every Class Every Day (pp.120-190).
Bergmann, J.S. & Sams, A. (2012). “Building on Theories of Learning”, Bergmann & Sams (2012) offer a possible solution in the flipped classroom model. In 2017, we attempted to apply this model in a second year nursing course in the microbiology segment. The learning preferences of millennial students seems to align well with this pedagogical approach (Philips & Trainor, 2014).

Evaluation at end of semester by way of an anonymous questionnaire

Did the online resource/flipped microbiology assist you in your learning?

“I do not think it assisted much, no answers were provided”

“did not have ‘come prepared to’ before lectures in all cases”

“Did not have ‘come prepared to’ before lectures in all cases”

“did not have ‘come prepared to’ before lectures in all cases”

“I can see the relevance to nursing; especially with diagnosis, signs, symptoms and treatments”

Infectious diseases are in the top ten causes of premature death worldwide at just below 50% (World Health Organisation, 2017).

References:
Bergmann, J.S. & Sams, A. (2012). Flip Your Classroom: Reach Every Student in Every Class Every Day (pp.120-190).
Bergmann, J.S. & Sams, A. (2012). “Building on Theories of Learning”, Bergmann & Sams (2012) offer a possible solution in the flipped classroom model. In 2017, we attempted to apply this model in a second year nursing course in the microbiology segment. The learning preferences of millennial students seems to align well with this pedagogical approach (Philips & Trainor, 2014).

Evaluation at end of semester by way of an anonymous questionnaire

Did the online resource/flipped microbiology assist you in your learning?

“I do not think it assisted much, no answers were provided”

“did not have ‘come prepared to’ before lectures in all cases”

“Did not have ‘come prepared to’ before lectures in all cases”

“did not have ‘come prepared to’ before lectures in all cases”

“I can see the relevance to nursing; especially with diagnosis, signs, symptoms and treatments”

Infectious diseases are in the top ten causes of premature death worldwide at just below 50% (World Health Organisation, 2017).