

## Teaching Research Methods Through a Blended-Experiential Learning Approach

NG Li Shan<sup>1</sup> & Daphne LIM<sup>1</sup>

<sup>1</sup>Lecturer, School of Health and Social Sciences, Nanyang Polytechnic



### Introduction

In recent years, research is growing in importance in the nursing profession and is a priority for nursing educators to cultivate an interest in nursing research (Mohsen, Safaan & Okby, 2016). Nursing educators find it challenging to not only introduce basic concepts in research but also enable learners to appreciate the research that will inevitably be a part of their practice as a Registered Nurse.

The team aimed to utilise educational innovations to cultivate an appreciation and interest in nursing research through the revamping of the current research methods module in the Diploma in Nursing programme using the following strategies:

#### 1) Blended-learning approach

An intentional shift from instructor-centred to student-centred learning approach where a portion of learning takes place using e-learning content where students can manage at a pace where they can learn, allowing class time to explore topics in greater depth through discussion and class activities (Pierce & Reuille, 2018). This strategy formed the main structure of the research methods module throughout the semester.

#### 2) Module Design: Learning Experience Canvas

The Learning Experience Canvas (Floor, 2013) is derived from the concept of Learning Experience Design (LXD), where experiential learning is the heart of it. It takes into consideration the profile of learners, their unique needs, and the environment where learning takes place (Gutierrez, 2017). The teaching team used LXD to re-design the current research methods module that is learner-centred to enable research to be 'alive' and relatable to students.

**3) Experiential Learning: Great American Cookie Experiment by Thiel (1987):** An engaging method involving undergraduate nursing students in learning research concepts.

### Methods

#### Redesigning of HS1184 – Research Methods module using the Learning Experience Canvas:

##### Learning Outcomes:

- Introduction to the fundamentals and principles of research process and their application in Nursing.
- Develop skills in searching relevant literature, formulate research aims and hypotheses and review research literature.

##### People and Characteristics

- Year 1 Diploma in Nursing students (aged 17-50 years)
- Local and international students
- No prior background of research
- Perceived research methods as the most difficult subject

##### Resources:

- LMS Blackboard
- Online resources & e-learning tools
- People (teaching team)

##### Strategy:

- To create meaningful and real-world context lessons
- Blended learning and flipped classroom
- Collaborative learning
- Mobile friendly learning materials

##### Environment:

Physical:	Virtual:
Lecture theatres (LT) & tutorial rooms (TR)	Online platforms, LMS Blackboard
Social:	Cultural:
Int'l students may have low confidence in expressing themselves	Multi-cultural

- ##### Locations
- LT with fixed seating arrangements
  - TR with movable chairs

- ##### Constraints:
- Varying students' abilities and profiles
  - Limited contact teaching hours
  - Complex theoretical concepts

##### Process & Activities:

#### a) Contact Lecture (1hr/week)

- Each topic taught in lecture was accompanied by interactive e-activities
- Technology used in class:
  - Perusal - Quiziz
  - Kahoot - Socrative
  - Padlet - Online question board
- Students immersed in a mini-experiment inspired by Great American Cookie Experiment by Thiel (1987) that involved tasting 2 different types of bread in the first lecture
- Experienced research processes in a simplified way
- Reference made to the bread experiment when teaching basic research concepts during the semester

#### Contact Tutorials - Facilitated by Lecturer (1hr/week)

- Discussion and application of concepts using real-time discussion platforms such as Google Docs and Padlet to facilitate class discussions.

#### b) e-learning Tutorial (1hr/week)

- Articulate Storyline 360 and Articulate Rise were used to create interactive e-learning content as compared to traditional PowerPoint slides.

### Results

An in-house Overall Module Experience Indicator (OMEI) survey was conducted on all students who underwent the HS1184 - research methods module in 2018 Semester 2 (S2). It is derived from the average of 8 items measuring curriculum implementation, assessment, module delivery and e-learning components.

A total of 824 students underwent the re-designed research methods module in 2018 S2. The end-of-semester evaluation revealed an improvement in OMEI from 85% in the previous year (2017 S2) to 92% (2018 S2). In addition, the Overall Module e-Learning Indicator also improved from 86% (2017 S2) to 95% (2018 S2). Each of the 8 items which the OMEI is derived from also saw a steady increase from the previous year before the research methods module was re-designed (table 1).

Module Evaluation Indicators	2017 S2 (n=653)	2018 S2 (n=780)
	Strongly Agree/Agree:	Strongly Agree/Agree:
Item 1: Clearly explained learning outcomes	87.96%	93.59%
Item 2: Module materials are good to help understand lessons	80.95%	92.69%
Item 3: E-learning is effective in helping me learn	82.93%	90.90%
Item 4: Module assessment components and criteria are clearly explained	85.67%	92.95%
Item 5: The lecturer has taught lectures well	82.77%	88.85%
Item 6: The tutor has taught tutorials well	88.41%	92.05%
Item 7: E-learning for this module is interactive and engaging	80.18%	91.15%
Item 8: Teaching equipment is in good working condition	91.46%	96.67%
<b>OMEI (average of items 1-8)</b>	<b>85%</b>	<b>92%</b>
<b>Overall Module e-Learning Indicator (average of items 3 &amp; 7)</b>	<b>86%</b>	<b>95%</b>

Table 1: Results from Module Evaluation Report

### Discussion

Based on Raosoft Inc (2004) confidence level of 99%, the total number of respondents for 2017 and 2018 S2 were representatives of the actual sample size.

The redesigned blended learning approach provided a platform for students to participate actively and explore the research concepts in greater depth. The overall improvement from the OMEI survey revealed the redesigned module using innovative teaching strategies were helpful for students to grasp the complex concepts of research. This project also demonstrates a positive outcome with a higher level of engagement achieved through the interactive e-learning lessons. It is essential to engage students to learn research methods in preparation for the students to adopt the evidence-based nursing practice.

#### Limitations:

- Each cohort may have different student profiles
- Different lecturers taught the module

#### Recommendations:

- Blended-experiential learning approaches are recommended in subsequent semesters. However, a measure of the level of motivation amongst students might be useful in comparison to OMEI results.

### Conclusion

Re-designing the research methods module using the Learning Experience Canvas and blended-experiential learning approaches has shown an increase in OMEI and Overall Module e-Learning Indicator results. This project informs the need for enhancing the module delivery to engage our millennial learners better.

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