



Enhancing Learning in an Online Oral Epidemiology and Statistics Course

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Context

Course information

- Course: Dental Hygiene (DHYG) 401 *Oral Epidemiology*, an online 6-credit course offered since 2008
- Content: 24 blocks/modules of epidemiological and statistical topics
- Students: UBC dental hygiene entry-to-practice (ETP) and degree-completion (DC) students in academic years 2015–2016 and 2016–2017

Course issues and students' concerns

- Course workload
- Interactivity
- Application of material
- Pace
- Course competencies alignment

Course changes and renewal

- Reduced required readings and online team activities
- Introduced self and peer assessment activities
- Included “hands-on” Statistical Package for the Social Sciences (SPSS) activities
- Replaced a textbook with an online textbook

Objective

To assess impact of the course revisions on students' learning outcomes and on their self-confidence in statistical and epidemiological topics included in the course.

Methodology

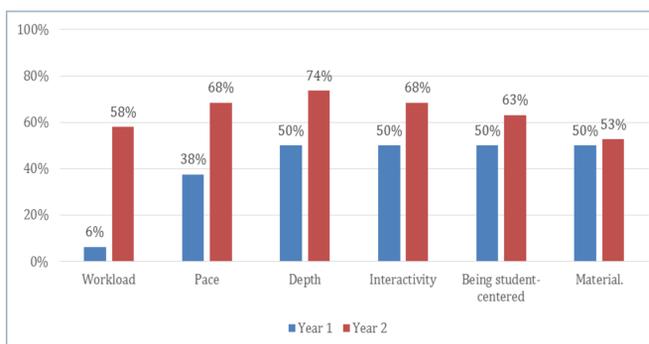
- A mixed-methods research design including pre/post surveys and interviews
- Online self-assessment surveys in 2016 and 2017 on the students' level of challenge and confidence on twenty-three selected course objectives using a five-point Likert scale
- Qualitative data on students' satisfaction
- Fisher's exact test was used for statistical analysis

Dental Hygiene Canadian Competencies Considered

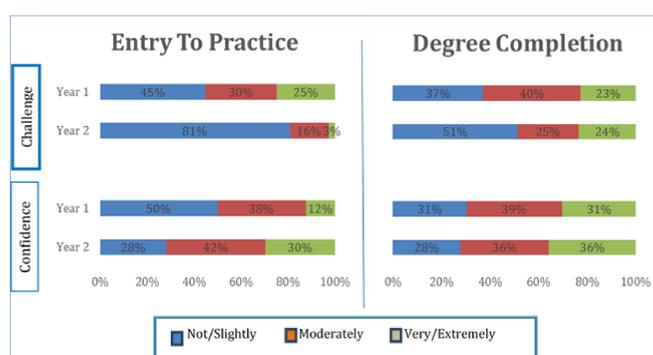
Course Competencies Focus^{1, 2}

- Use knowledge of the principles of research methods and statistics in dental hygiene practice
- Assess epidemiological data

Students' satisfaction categories before (year1) and after (year 2) the course renewal



Students' challenge level and confidence before (year 1) and after (year 2) the course renewal



Results

- 43 students enrolled in each year
- Response rate varied from 32% to 57%
- ETP students in 2016–2017 provided significantly lower Likert scores on all twenty-three course objectives pertaining to feeling challenged compared with the 2015–2016 pre-course renewal cohort ($p < 0.001$)
- In the DC group, the changes in challenging objectives after course revisions were also considerable
- The proportion of ETP students who were very/extremely confident in all objectives increased more than two-fold after course revision (from 12% to 30%; $p < 0.001$)
- The DC students' confidence ratings increased slightly but not significantly after course revisions (31% and 36%, respectively)

Conclusions

- Students in the revised course expressed greater levels of confidence and felt less challenged in demonstrating course objectives and valued greater opportunities **to engage in online discussions, to assess their peers, to receive timely feedback, and to use statistical tools in their learning**³
- The delivery format of this course and methodology used to assess this course renewal may serve as a framework to inform the assessment of curriculum in other health programs

References

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