

Background

Medical and dental schools have long-established pedagogical approaches to teacher-centered face-to-face learning. The Dental Hygiene (DH) program at the University of Alberta is no exception. Oral Biology II is an intermediate-level course in the dental hygiene program that has been moved to an asynchronous online format to manage the disruptions of the COVID-19 pandemic.

Although the number of online courses is growing in post-secondary education, it is a developing area that needs innovations for effective online-teaching and assessments, to meet student demand, and to increase student engagement in an online class.

We conducted an explanatory mixed-method study to explore the factors affecting the student experience of this diverse class in an online, asynchronous learning environment.

Research Questions

- I. What are student perspectives on the flexibility and workload of the online course?
- II. What features of face-to-face learning were 'missed' in an online environment?
- III. In students' opinion, what factors motivate students in online learning?

Research Method

Our study includes a quantitative anonymous survey with a 5-point Likert scale focused on evaluating the workload and flexibility of the course and students' acceptance of the assessments. The mean score and standard deviation were calculated for each question in the online survey. A research facilitator conducted interviews using a semi-structured interview guide to further explore student experiences. We analyzed the qualitative data using a six-step method of thematic analysis.

Results (Quantitative)

Table-1: Students' response to online survey

Research Question		Survey Question	Average Score	Standard Deviation
Workload and Flexibility	Q1	The workload of the online course was appropriate.	4.3	0.6
	Q2	The online course gives me more freedom and time flexibility compared to a face-to-face course.	4.3	0.8
Comparison between online and Face to face learning (What is 'missed' in online learning)	Q3	I think I would understand the material better if it were presented in a face-to-face manner.	3.3	1.2
	Q4	I am confident that I have acquired the same knowledge as I would have in a face-to-face environment.	3.4	1.2
	Q5	I missed direct, in-person interaction with other students.	4.0	1.1
	Q6	I missed direct, in-person interaction with the instructors	3.8	1.1
Alternative assessment methods	Q7	The online delivery was a barrier to my overall learning.	2.5	0.9
	Q8	The assessments of the online course were appropriate and fair.	4.2	0.7
	Q9	The alternative assignments (written assignments and student presentations) motivated me to study more on the subject matter.	3.5	1.3
Overall satisfaction	Q10	I enjoyed having alternative assignments (written assignments and student presentations) over final or midterm exams.	4.3	1.0
	Q11	Overall, my online learning experience was excellent.	3.7	0.9

Results (Qualitative)

Our study identified three main themes and their subthemes that affected the student experience in online learning:

(i) Course structure

Format (online, asynchronous)

Assessments (spacing, weighting, type)

(ii) Communication

Timeliness

Clarity (expectations, learning objectives)

(iii) Non-curricular aspects

Executive functioning (time management, motivation, focus, organization)

Sense of community/connection (with peers, with instructors)

Conclusion

Our study found that the student experience in an asynchronous, online course is impacted by the designed structure of the course, the communication of the learning objectives and expectations, as well as through non-curricular aspects like a students' executive function and the social aspects of learning. Although students may not like the self-directed nature of asynchronous courses, the increased student responsibility and independence of learning can foster an adult learning mindset that is critical for the lifelong learning necessary for health professionals.