

Student Comfort Levels During Online Synchronous Learning in Local Anesthesia

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INTRODUCTION

- The COVID-19 pandemic caused colleges and universities to move in an unprecedented way to online videoconferencing platforms such as Zoom, Microsoft Teams, and Google Meet to continue education.¹
- Comfort is defined as a state of psychological ease; experiencing no unpleasant feelings or thoughts due to nervousness or anxiety.¹¹

PURPOSE

The purpose of this study is to:

- Examine whether comfort levels of students using videoconferencing are associated with prior experience with videoconferencing
- Compare students' comfort levels with videoconferencing to the traditional in-person classroom
- Provide insight into factors that prevent some students from using their video and engaging more fully in synchronous learning

MATERIALS AND METHODS

Participants

- 54 second-year dental students enrolled in an online local anesthesia course at Roseman University CODM from July 15 to August 16, 2020.

Procedure

- A link to a survey created in Qualtrics was sent to students via email later in the same day as the synchronous lecture (August 3, 2020), the day after lecture (August 4, 2020), and three days after lecture (August 6, 2020).
- There were twenty-two survey questions including demographic characteristics including age, gender (male/female/binary) and experience with videoconferencing prior to March 2020 (No experience/A little experienced/Somewhat experienced/Very experienced).

Characteristic	All	Experience		p
		Little/none (n=26)	some/very (n=28)	
Age (mean, sd)	27.7 (4.1)	28.6 (4.5)	26.9 (3.5)	0.13
Gender*				0.67
Female (n, %)	25 (47.1)	11 (42.3)	14 (51.8)	
Male (n, %)	28 (52.8)	15 (57.7)	13 (48.1)	
Took online Class before				0.89
No (n, %)	11 (20.4)	6 (23.1)	5 (17.9)	
Yes (n, %)	43 (79.6)	20 (76.9)	23 (82.1)	

Agreement ratings - I am more engaged ...	Experience		p
	Little/none (n=25)	some/very (n=28)	
When video is on (showing my face)	3.3	4.1	0.11
Knowing I may be asked a question	4.8	5.3	0.29
When I'm more comfortable with online learning	5.2	5.9	0.03
	%	%	p
Learning preferences			0.31
Traditional in-person	32.0	28.6	
Online synchronous	24.0	17.9	
Both in-person and online synchronous	40.0	32.1	
Other	4.0	21.4	

*Comparisons performed with independent t-tests for agreement ratings and with chi-square analysis for learning preference. Response choices for agreement level were 1=strongly disagree; 2=disagree; 3=slightly disagree; 4=neutral; 5=slightly agree; 6=agree; 7=strongly agree.

Comfort levels for...	mean comfort rating	r	B	p
In-Person classroom				
Listening to lectures	5.9	.17	.23	.23
Asking questions	5.1	.24	.44	.08
Answering questions	4.8	.20	.39	.18
Interacting in breakouts	5.9	-.02	-.02	.89
Online classroom				
Listening to lectures	5.8	.18	.30	.21
Asking questions	4.8	.25	.48	.07
Answering questions	4.6	.28	.55	.04
Interacting in breakouts	4.9	.30	.54	.03
Comfort with video feature when...				
Began using videoconferencing in March 2020	4.1	.34	.68	.01
When using videoconferencing for online anesthesia class	4.7	.26	.52	.05
As more experience gained using videoconferencing	4.8	.24	.33	.07

*Associations examined with Pearson correlations and linear regression analyses; B=slope or amount of change in comfort rating per unit increase in experience. Response choices for ratings of comfort level were 1=very uncomfortable; 2=uncomfortable; 3=slightly uncomfortable; 4=neutral; 5=slightly comfortable; 6=comfortable; 7=very comfortable.

Comfort with...	In-person	Online	p
Listening	5.9	5.8	0.71
Asking questions	5.1	4.8	0.28
Answering questions	4.8	4.6	0.64
Interacting in breakout sessions	5.9	4.9	0.003

*Comparisons performed with paired t-tests; Response choices for ratings of comfort level were 1=very uncomfortable; 2=uncomfortable; 3=slightly uncomfortable; 4=neutral; 5=slightly comfortable; 6=comfortable; 7=very comfortable

RESULTS

- Table 1:** There were no significant differences between those with little/no experience vs. somewhat/very experienced with videoconferencing before March 2020 on age, gender or history of having taken an online class (p>0.05;)
- Table 2:** Reasons for not using the video feature in the online synchronous portion of the local anesthesia class were that students did not want to dress up (48.1%), other students were not using their video (46.3%), and feeling that they did not look good (35.5%).
- Table 3:** Students were significantly more comfortable interacting in breakout sessions during in-person than online classes (mean comfort ratings=5.9 vs. 4.9, respectively, p=0.003).
- Table 4:** There were significant positive associations between ratings of experience and comfort with answering questions and interacting in breakouts
- Figure 1:** A significantly greater proportion of those who were more experienced reported not using the video feature because they did not want to show their backgrounds (means=11.5 vs. 35.7, p=0.04).
- Figure 2:** Comparisons of response methods used during lecture (Figure 2a) and breakout sessions (Figure 2b) showed that there were higher rates of use of video, voice and chat for those with more experience

LIMITATIONS & STRENGTHS

Limitations:

- Data for this study came from students in a single course within a single dental school.

Strengths:

- There was a wide age range (23 to 43 years) among the respondents, and both genders participated in the survey.

CONCLUSION

- After the COVID-19 pandemic, it may be beneficial to structure dental school curricula as a hybrid learning experience, with traditional in-person courses and courses offered through online synchronous videoconferencing.
- Future studies should examine factors other than experience potentially contributing to student comfort such as engagement, motivation and personal preference of the traditional classroom vs. online learning.

Figure 1. Comparisons* of reasons for not using video by experience

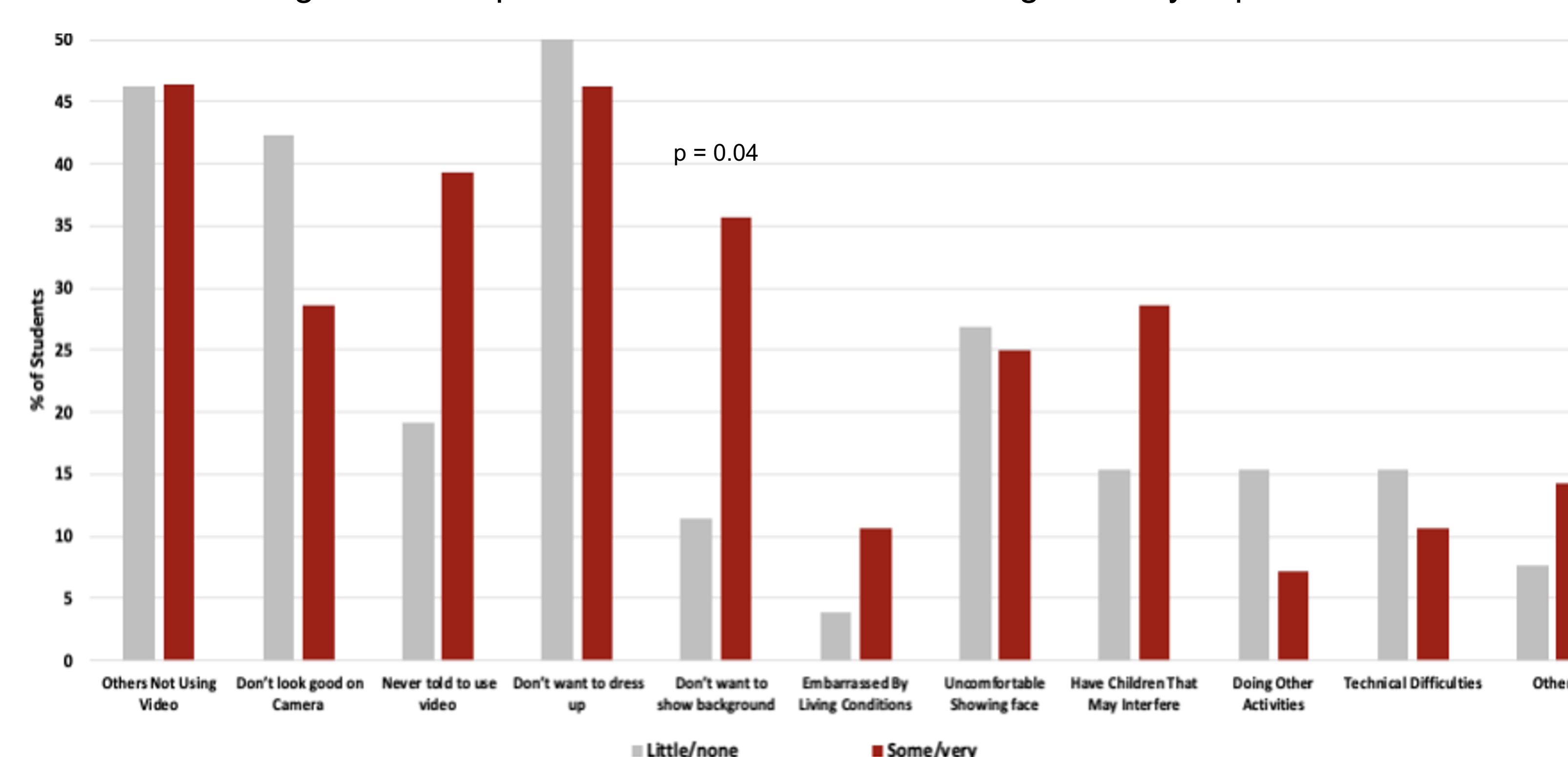


Figure 2. Comparisons* of methods of communication used during (a) lectures and (b) breakout sessions by experience

