

Impact of emergency remote teaching on nursing students' engagement, social presence, and satisfaction during the COVID-19 pandemic

Jansirani Natarajan  | Mickael A. Joseph 

Department of Fundamentals and Administration, College of Nursing, Sultan Qaboos University, Muscat, Oman

Correspondence

Jansirani Natarajan, Department of Fundamentals and Administration, College of Nursing, Sultan Qaboos University, Al Khoud St, Muscat 123, Oman.
Email: jannat@squ.edu.om

Abstract

Background: The COVID-19 pandemic interrupted face-to-face education and forced universities into an emergency remote teaching curriculum. Studies show that students' engagement, social presence, and satisfaction are critical factors for optimal online teaching.

Purpose: Therefore, in this study, we sought to understand how the sudden transition to emergency remote teaching impacted nursing students' engagement and social presence, as well as how it affected their satisfaction with online courses in a middle-eastern public university.

Methods: A cross-sectional descriptive correlative research design was adopted in this study. Data were collected through three questionnaires measuring students' engagement, social presence, and satisfaction with emergency remote teaching compared to the traditional approach from a sample of 177 nursing students.

Results: Results indicate that students had a high level of engagement but low social presence and low satisfaction level with emergency remote teaching. Additionally, both engagement and social presence were positively associated with satisfaction.

Conclusion: Our findings support the importance of engaging students and integrating social presence strategies into online courses to enhance nursing students' satisfaction.

KEYWORDS

emergency remote teaching, engagement, nursing students, satisfaction, social presence

1 | INTRODUCTION

The COVID-19 pandemic forced colleges and universities globally to end face-to-face teaching to decrease the spread of the virus.¹ Teaching moved almost overnight to online learning and virtual classrooms.² However, an online program is typically conceptualized and prepared months in advance. Neither faculty nor students were prepared for this unprecedented swift change and found themselves in an unfamiliar learning environment. Faculty had to rush to change their teaching to online, and students had to adapt to this new method.³ Because of the lack of time to adequately prepare a meaningful online learning environment, the academic community

refers to this transition as "emergency remote teaching" (ERT) and not online learning.⁴

This major educational disruption placed a bigger toll on nursing education worldwide. In the spring semester of 2020, curriculum programs all over the world had to make a difficult decision to remove nursing students from clinical settings.⁵ While nursing educators could shift many of nursing basic theory courses to ERT, clinical courses needed to have a face-to-face approach. Therefore, nursing students have expressed their concerns about not successfully completing their degree and not reaching the objectives and their student learning outcomes.⁵ The international nursing community raised questions about how nursing education can carry on in a culture of social distancing and

isolation where, at the same time, nurses are required on the frontlines.⁵ During this pandemic and in response to the different challenges it poses, it is crucial to provide best practices for adapting nursing programs.⁶

1.1 | Background

Maintaining and fostering students' engagement in theory and clinical courses remain one of the most important challenges facing nursing educators.⁷ Students' success in the nursing program is correlated to their level of engagement in academic learning.⁸ Nursing educators argue that online learning facilitates students' engagement as it is able to link theory and practice in nursing courses.⁹ Studies have shown that when technology is used in an effective way, it will enable students and faculty to have better engagement and collaboration.¹⁰ However, nursing students' engagement in online learning might differ from that of ERT. So far, no studies have investigated how nursing students perceived their level of engagement after transitioning from face-to-face learning to ERT.

An additional challenge in any online learning course for nursing education is the lack of social presence.¹¹ In remote learning, social presence is defined as the degree to which students feel connected to the instructor and to one another.¹¹ Studies found that one of the most important features of social presence is fostering a sense of community in remote nursing education, which has the potential to enhance students' interactions, decrease feelings of isolation, and increase learning.¹¹⁻¹³ However, there is a dearth of studies assessing the social presence of nursing students in ERT during the COVID-19 pandemic.

1.2 | Conceptual framework

The conceptual framework used in this study is based on the community of inquiry (Col) model developed by Garrison et al.¹⁴ It has three essential elements: social presence, which is the ability of participants to identify, communicate, and develop inter-personal relationships in a trusting environment. Teaching presence is the design, facilitation, and direction of cognitive and social processes for realizing personally meaningful and educationally worthwhile learning outcomes. Cognitive presence, which is the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse. The Col framework proposes that the quality and outcomes of online learning experiences are dependent on the independent functioning, as well as the interaction of three core concepts or elements. The model emphasizes behaviors of both students and faculty in online courses through the overlapping of and interactions between these three concepts and the dialogue processes required to assist with learning and knowledge construction in a community of learners. It emphasizes social relationships and the process of learning that occurs in the online environment.¹⁴ Teaching presence as a construct delineates those tasks a teacher does such as organizing the course with design and facilitating discourse and direct instructions.¹⁵ Research has supported the relationship between one

or more of the presences and perceived learner support and perceived learning^{16,17}; student satisfaction and sense of community¹⁸; and higher-order learning outcomes.¹⁶ Thus, Col offers a strong model for researching online courses as well as designing effective online learning environments.

1.3 | Purpose

As nursing educators, we need to adjust our nursing program to best fit the online learning, and it is essential that we do it carefully and consciously, prioritizing our nursing students' best interests. Therefore, we need to understand our students' views of the online material delivered during the pandemic to gather their perception of engagement and social presence. This will allow us to assess how these have influenced their satisfaction with online teaching to improve it. Almost one year after the beginning of this education disruption, we have still not returned to campus and face-to-face teaching; therefore, it is extremely important to implement a web-based environment that will promote learning and improve nursing students' experience, engagement, and satisfaction with online teaching.⁶ In this study, we sought to understand how the sudden transition to ERT impacted Omani nursing students' engagement and social presence and how it affected their satisfaction with the course. Answering this will allow us to identify elements that contribute to the satisfaction of students with the online course and enhance their learning outcomes.

2 | METHODS

2.1 | Design and methods

A cross-sectional descriptive correlational study design was utilized to describe the perception of Omani nursing students regarding their levels of engagement, social presence, and satisfaction after their transition to ERT during the COVID-19 pandemic.

2.2 | Setting and context of ERT

Data collection among the nursing students at a pioneering nursing college was completed at the end of spring semester 2020, where the students had experienced a transition from face-to-face classes to ERT. In the 8th week of 16 during the spring semester of 2020, the executive committee at the college of nursing made the decision to remove nursing students from all clinical settings. While many of the nursing basic theory courses could be shifted online, clinical courses need to have a face-to-face approach. However, nursing educators at the college of nursing have been able to implement various strategies via e-learning to maximize students' learning and meet the different course outcomes in both theory and clinical courses. Moodle platform was used extensively, and learning modules were organized to deliver an acceptable learning experience where the learning objectives of each theory and clinical course were

met. Online and YouTube videos were created focusing on different nursing concepts and shared with students. This asynchronous way of teaching allowed students to watch the videos at their convenience while being isolated and safe at home. Discussion forums were established so students could communicate with their peers and their teachers through creating posts and sharing ideas. Moreover, some clinical instructors opted for online simulations to develop and increase clinical reasoning so students could make up for the lost clinical hours.

2.3 | Participants

Systematic random proportionate sampling with the help of a list of students from their second to fifth years was utilized. The nursing students' name list was accessed and students were randomized based on the year of study except for first-year students, as they had neither lab nor clinical postings. Nursing education comprises theory and clinical components either in the lab or in the clinical setting. As first-year students learn the basic theory courses like anatomy and physiology, psychology, sociology, introduction to nursing profession, electives, and so forth, we decided to not include them in the study. From the second year onwards, students start with their theory courses and either lab or clinical courses. Moreover, first-year students do not have a good experience with the learning management system, "Moodle," that was used after the transition, which could influence their responses.

The randomly selected students were approached through emails, asking for their participation in the study. Based on the diversity in origin of students at the College of Nursing, this institution is likely to provide a good representation of students with different local cultures, behaviors, and beliefs about online learning. Slovin's formula was used to calculate the sample size needed for the population of 520 nursing students with a medium-size effect ($d = 0.3$) and power of 0.95 and confidence interval of 95%. The suggested sample size was 222 responses and the response rate was 80% (177 participants). Response rates for final year students were low, which could be due to these students having busier schedules than those from previous years. These students are more stressed especially toward the end of the semester where they must finalize their graduation project to graduate.

2.4 | Data collection

The survey was distributed via email using the University's student portal system with the help of the Deanship of Student Affairs. A recruitment email with a Google survey link was sent to the randomized participants twice a month by the investigator. Upon opening, the informed consent stating the information about the survey, voluntary nature of participation, confidentiality, and anonymity of the data appeared. It also explained that participation would not affect students' grades. If a student checked the box of agreeing to participate, the survey appeared. The survey was made available for a month and the participants did not receive any incentives for completing it. The survey consisted of questions

regarding demographic characteristics and three standardized valid questionnaires to assess students' engagement, social presence, and satisfaction.

2.5 | Questionnaires

The Online Students' Engagement scale (OSE) has 19 items, reported on a 4-point Likert scale. It has four subscales: skills, emotion, participation, and performance. Students' responses ranged from 0 (not at all characteristic of me) to 4 (very characteristic of me). OSE Cronbach's Alpha was 0.91, indicating high reliability¹⁹ and 0.95 for our student population. Total engagement scores and scores for engagement subcategories (skills, emotions, participation, and performance) were aggregated to yield numeric values. The maximum possible score is 76, and a score above 39 (the median) was considered good engagement with online classes, which means that the students perceived themselves as having good skills engagement, emotional engagement, participation engagement, and performance engagement with their online learning.

The Social Presence Scale consisted of 14 items with Likert scale scores ranging from 1 to 5. The scale consists of 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, and 5 = strongly agree. The maximum score possible was 70. A score above 42 was considered good social presence with online classes. We used the scale from Cobb²⁰ where slight modification to the wording of the scale was made as appropriate for a Web-based nursing course with the permission of the author. The questionnaire contains four negative items and was coded in reverse during the data analysis. Reliability of the scale was reported as a Cronbach's Alpha of 0.88²¹ and 0.95 for our sample. The Social Presence Scale has been used in studies of online courses with undergraduate and graduate nursing and non-nursing students.^{20,22,23}

The Satisfaction Scale consisted of 10 items scored on a Likert scale of 1–5. The scale consists of 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, and 5 = strongly agree.²¹ Reliability was reported as 0.87 using Cronbach's Alpha²⁰ and 0.92 in our study. The maximum possible score for the scale in this study was 45, and a score above 31 is considered good satisfaction. Permission for using the standardized scales was obtained from the authors.

2.6 | Data protection

Only the investigators of the study had access to the data of the students who agreed to participate. Data were stored in a password-protected computer and only investigators had access to it.

2.7 | Data analysis

Data analysis using IBM Statistical Packages for Social Sciences (SPSS) version 23 was done after data entry, data cleaning, and audit for accuracy. A probability of <0.05 was considered statistically significant for all tests. Descriptive variables were analyzed using means, standard

deviations, frequencies, and percentages. Correlation between the various perceived outcomes of online learning was analyzed using Pearson r .

2.8 | Ethical consideration

Ethical approval was obtained from the College of Nursing ethical committee (Ref # CON/NF/2020/23).

3 | RESULTS

3.1 | Demographics

One hundred seventy-seven nursing students participated in the study. Overall, 71.8% of the participants were female, and the mean age was 22.2 (standard deviation [SD] = 4.4) years. Of the participants, 57 (15.8%) were second-year students, 46 (26.0%) were third-year students, 51 (28.8%) were fourth-year students, and 23 (13.0%) were fifth-year students. Most of the students had a cumulative grade point average (GPA) between 2.1 and 3.0 (52%, $n = 92$). The mean number of credits registered by the students for the spring semester was 13.7 credits ($SD = 1.7$; Table 1). Students are allowed to register for 14–16 credits in a normal semester and are allowed to take an extra load of up to 18 credits in special conditions as in the graduating semester.

3.2 | Perception of engagement with ERT

Regarding students' engagement with ERT, 62.7% of the nursing students perceived themselves to be highly engaged (Figure 1). Students

TABLE 1 Demographic characteristics of the nursing students

Characteristic	Category	<i>n</i>	%
Gender	Male	50	28.2
	Female	127	71.8
Year of study	Second year	57	32.2
	Third year	46	26.0
	Fourth year	51	28.8
	Fifth year	23	13.0
cGPA	Less than 2.0	4	2.3
	2.1–3.0	92	52.0
	3.1–3.5	60	33.9
	3.6–4.0	21	11.9
		Mean	SD
Age (years)		22.2	4.4
Credits registered (number)		13.7	1.7

Abbreviations: cGPA, cumulative grade point average; SD, standard deviation.

typically identified better in the skill and performance engagement categories, which had the highest scores. The item that received the highest mean score pertained to the emotional category, regarding the effort students put forth in ERT ($M = 2.58$, $SD = 1.22$). In the skills category, two items—studying regularly and listening/reading carefully during ERT—reported the highest levels of students' response ($M = 2.41$, $SD = 1.24$ and $M = 2.46$, $SD = 1.23$, respectively). In the participation category, students identified with the item which asked about helping fellow students during the ERT ($M = 2.51$, $SD = 1.17$). The item that received the lowest mean score in this questionnaire also pertained to the participation category, where students did not identify themselves as having fun in online chats, discussions, or via email with the teacher or fellow students ($M = 1.75$, $SD = 1.26$).

3.3 | Perception of social presence in ERT

The results of social presence in ERT were not significant, where almost half of the students (48.0%) considered ERT to be potentially low in social presence, while the other half (52.0%) considered it to be high in social presence (Figure 1). The highest scoring items were related to feeling comfortable interacting with other fellow students and the ability to form distinct individual impressions of them ($M = 3.08$, $SD = 1.1$ and $M = 3.06$, $SD = 0.99$, respectively). On the other hand, the lowest-scoring item was related to whether ERT is an excellent medium for social interaction ($M = 2.86$, $SD = 1.1$).

3.4 | Satisfaction with ERT

Overall, the majority of students (71.8%) were not satisfied with ERT (Figure 1). The item with the lowest mean in this study was the likelihood of participating in another online course in the future if given the choice ($M = 2.54$, $SD = 1.36$). On the other hand, the item related to putting forth a great deal of effort to learn the medium of computer-mediated communication to participate in the online course had the highest mean ($M = 3.25$, $SD = 1.25$).

3.5 | Correlation between engagement, social presence, and satisfaction

In the analysis of the variables, a significant correlation was found between student engagement, social presence, and satisfaction of students with ERT, with the strongest correlation being between social presence and satisfaction ($r = 0.743$, $p < 0.0001$; Table 2). There was no significant difference between the students' demographic characteristics and their perception of engagement or satisfaction with ERT. However, a statistically significant difference between the perception of social presence and cumulative GPA and gender was observed. A chi-square test of independence showed that there was a significant association between gender and perception of social presence, $X^2(3, N = 177) = 8.89$, $p = 0.031$ and between cumulative GPA and social

FIGURE 1 Perception of engagement, social presence, and satisfaction with ERT. ERT, emergency remote teaching [Color figure can be viewed at wileyonlinelibrary.com]

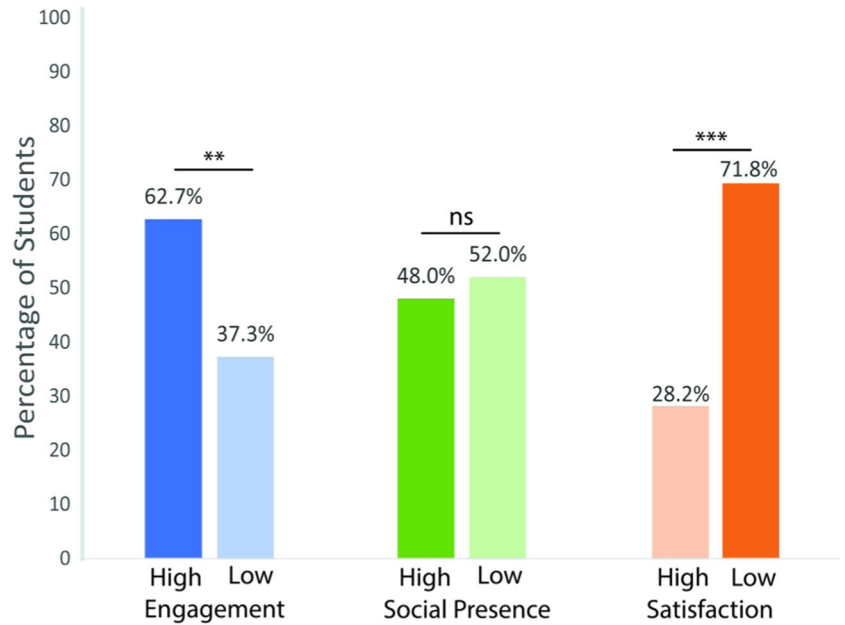


TABLE 2 Correlation of students' perception of engagement, social presence, and satisfaction with emergency remote teaching

Correlations between outcomes	Student engagement	Student social presence	Student satisfaction
Student engagement			
Pearson <i>r</i>	1	0.521**	0.400**
Sig. (two-tailed)		<0.0001	<0.0001
N	177	177	177
Student social presence			
Pearson <i>r</i>	0.521**	1	0.743**
Sig. (two-tailed)	<0.0001		<0.0001
N	177	177	177
Student satisfaction			
Pearson <i>r</i>	0.400**	0.743**	1
Sig. (two-tailed)	<0.0001	<0.0001	
N	177	177	177

**Correlation is significant at the 0.001 level (two-tailed).

presence, $\chi^2 (1, N = 177) = 4.005, p = 0.045$. Students with higher CGPA and female students perceived lower social presence with ERT (Table 3).

4 | DISCUSSION

Our large sample of Omani nursing students allowed us to examine the impact that the COVID-19 pandemic had on their level of engagement, social presence, and satisfaction with ERT. First, we found that students

remained engaged with courses despite the abrupt transition to online platforms. A majority of students agreed that they put forth effort into the ERT courses, studied regularly, and remained engaged during the transition. Second, when students were asked about their social presence during ERT, half of them considered ERT to be high in social presence and the other half considered the opposite. Students found they had the ability to help fellow students with the online courses, but they felt that social interaction could be better experienced in face-to-face courses rather than in ERT. Finally, a majority of students were not satisfied with ERT and expressed the unlikelihood of taking an online course in the future if given the choice.

The literature has shown that promoting students' engagement is paramount.²⁴ One of the major factors that foster student engagement with the learning material is a strong relationship between faculty and students.²⁵ Indeed, we believe that one of the major reasons students in our study remained engaged with ERT is the pre-existing relationship that the instructors had built with students for the first 7 weeks of the semester through face-to-face teaching. Once students and faculty moved online, this pre-existing positive interaction could have enhanced students' engagement. Moreover, students at the College of Nursing have a great familiarity with the learning management system (Moodle) as it was used by instructors before the implementation of ERT as a support for face-to-face lectures. Both faculty and students had used the Moodle platform before the transition, and we believe that this provided an early opportunity to keep students engaged and gave instructors a certain confidence about the ERT. However, although students' engagement seems not to have been affected by the transition, a minority was still impacted and did not feel engaged. Therefore, these students need to be identified and offered personalized assistance. Furthermore, instructors need to maintain students' engagement in the online environment by focusing on engaging strategies, such as online class activities, peer tutoring, group assignments, and so forth.

Demographic variable	Category	Perception of social presence with ERT		Pearson chi-square value	p
		Low social presence, n (%)	Good social presence, n (%)		
Current cGPA	Less than 2	0 (0.00)	4 (100.00)	8.890*	0.031
	2–3	42 (45.65)	50 (54.35)		
	3.1–3.5	37 (61.67)	23 (38.33)		
	3.6–4	13 (61.90)	8 (38.1)		
Total		92 (51.98)	85 (48.02)		
Gender	Male	20 (40.00)	30 (60.00)	4.005*	0.045
	Female	72 (56.69)	55 (43.31)		
Total		92 (52.00)	85 (48.00)		

Abbreviations: cGPA, cumulative grade point average; ERT, emergency remote teaching.

*Correlation is significant at the 0.05 level (two-tailed).

Students were divided on whether ERT is considered to be high or low in social presence. Unlike the clinical classes, didactic lectures were not given synchronously. In fact, students were able to access lectures as videos on Moodle during the ERT. As students were used to having face-to-face lectures, this lack of synchronous online lectures might have had a negative effect on the students who indicated they felt less social presence. Swan and Shih²⁶ showed that students viewed the social presence of their teachers to be more important than that of their peers. This could explain why students in this study felt comfortable interacting with their peers but reported that ERT failed to create feelings of social interaction.

Although instructors incorporated many teaching strategies for online learning and invested hours in preparing and delivering videos and activities to engage students, they fell short in satisfying students with ERT. Our results showed that students' perceived levels of engagement and social presence significantly correlate with the overall satisfaction in the online environment. Therefore, to enhance students' satisfaction, instructors should engage students and convey social presence in the online learning environment. Faculty should include more engaging activities like blogging and involve students in breakout rooms and polling for group work to engage students with each other and with the instructor. This can enhance the feeling of social presence with online learning. A greater frequency of feedback on assessments seemed to enhance the interaction between students and instructors, hence improving the perception of social presence in ERT.²⁷

Our correlational results suggest that male students perceived significantly higher social presence in online learning than females. Results from the literature from Western countries showed that females perceived the online environment to have greater social presence than males.^{28,29} The most probable reason for the difference in the perception of social presence between our study and the other studies could be due to cultural differences. The fact that our study was carried out in a gender-segregated society may explain this. Strategies to enhance social presence of both genders should be adopted like encouraging social interaction between male and female students to increase the social presence perception of female

TABLE 3 Association between demographic characteristics and students' perception of social presence with ERT

students. Our results also revealed that students with low GPA perceived greater social presence in online learning in comparison to their peers with high academic outcomes. One of the reasons underlying this result might be that students with higher GPA are usually more invested in the classroom where they can use their communication skills to tackle face-to-face demands with the teacher. However, the distance created between the instructor and the students in online learning might have made these students with higher GPAs in greater need for social interaction. Some authors from other universities around the world suggested that online learning reduces students' apprehension and fear associated with self-presentation³⁰ which is probably why students with lower GPA perceived online learning to have better social presence.

The results of this study are extremely important for nursing educators. The results will help educators target individual students who were particularly affected by the transition. For educators worldwide, it is paramount to research students' levels of engagement, social presence, and satisfaction with the online courses because these variables are positively correlated with student learning outcomes.

One limitation of this study is that not all clinical instructors used the same teaching modalities in delivering online clinical courses and this could have affected students' perceptions. Our study needs to be replicated in a fully online educational context, and the levels of social presence, engagement, and satisfaction of students should be explored. Moreover, students were not on campus; they were at home and some of them live in remote villages where technological resources and access to the internet are limited. This study being limited to one nursing institution in Oman narrows the scope of the study. Therefore, it is not possible to generalize the results to other nursing institutions. A final limitation is that we did not reach the calculated sample size of 222 students; however, because of the amplitude of the differences in the results, an addition of 45 students is less likely to bring change in our results. Future qualitative studies should investigate students' challenges with online teaching to understand the best ways to maintain engagement and social presence

in the online learning experience. The researchers believe it is also paramount to investigate other factors that might affect students' satisfaction with the online learning environment.

5 | CONCLUSION

In this study, we demonstrated that the transition to ERT at the College of Nursing at a public University has kept nursing students engaged with the lectures, but negatively affected their social presence and satisfaction. Also, we showed in this study that the two variables of engagement and social presence have a great impact on students' satisfaction with online learning and should therefore be given some attention by nursing instructors around the world to enhance students' experiences with online teaching.

ORCID

Jansirani Natarajan  <https://orcid.org/0000-0002-9686-7543>

Mickael A. Joseph  <https://orcid.org/0000-0002-5008-0542>

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