

## Research Article

### A Survey on Sense of Classroom Community and Perceived Learning in On-Campus Vs. Off-Campus Mode among DPT Students During Covid-19 Pandemic

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#### Abstract:

**Background:** Owing to post COVID-19 global situation, online students learning at various levels has been advanced as being more convenient, useful & practical. This study aimed to compare the level of Sense of classroom community and perceived learning in on-campus vs. off-campus mode among DPT students during COVID-19.

**Methodology:** This study was conducted at the Department of Allied Health Sciences, University of South Asia Lahore among DPT students from April 2021 to June 2021. The study design was observational/cross-sectional and a non-probability convenient sampling technique was used. A total of 357 Male and female DPT students were enrolled in this study who participated in online study courses/programs were included in the study (One semester/6months). New admission first-semester students were excluded from the study due to non-exposure to online learning mode. Data was collected with the help of self-administered questionnaires (CAP Perceived Learning Scale and Classroom community scale). Wilcoxon signed-rank test was used to compare the mean score of sense of classroom community and perceived learning among DPT students.

**Results:** The score of Perceived learning in the offline mode of learning was higher ( $M=33.10, \pm SD=7.540$ ) as compared to Perceived learning in the online mode of learning ( $M=27.03, \pm SD=7.365$ ) while the sense of classroom community was strong in offline mode of learning ( $M=44.03, \pm SD=7.921$ ) than in the online mode of learning ( $M=39.91, \pm SD=7.945$ ) among DPT students.

**Conclusion:** Perceived learning and the sense of classroom community were found to be significantly higher in the on-campus mode of learning as compared to the off-campus mode of learning among DPT students.

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## **INTRODUCTION:**

The COVID-19 pandemic troubled the entire world in early 2020 leading to a world-shattering situation across the globe. Considering the need of the hour & to minimize the loss of students because of shut down of educational institutions, the online education system was adopted by multiple educational institutions.<sup>1</sup> Since that time, even today in 2022, this online learning mode is still in successful use where teachers and students are connected in the virtual environment, allowing students to participate in class via the web rather than face-to-face learning, which is independent of time and place.<sup>2</sup>

The classroom environment provides a sense of classroom community spirit, interaction, and a bond which in return reflects learning and connectedness among students<sup>3</sup> while changing the individual's understanding of ability and knowledge levels before and after the learning experience is labeled as Perceived learning.<sup>4</sup> According to a study, Dropout rates are more than 20% higher in online courses as compared to traditional classroom and represents learner attitudes regarding the gaining of knowledge.<sup>5</sup> Traditional studying techniques including classes, reading, audio-visual tools or even illustration acquire a maximal 30% studying retention. On the other hand, learning methods such as peer group discussion, practical illustration, and teaching other peers may acquire a maximum of 90% studying retention.<sup>6</sup>

A cross-sectional survey was conducted by Aydin IE. et al. at Anadolu University in Turkey in 2016 in

which 118 students were recruited to determine a relationship between online learners' sense of classroom community, perceptions of success in the team development process, and their preferences for studying in teams. The result showed a weaker sense of classroom community and particularly they did not think that they learned very well during the teamwork assignments.<sup>7</sup> Similarly A Cross-Sectional study was conducted by Gray JA, et al. in 2016 at a Regional comprehensive University in the United States in which the effects of student engagement, student satisfaction, and perceived learning in online learning environments were evaluated in 187 students. The result showed that the intention to inform practice related to increasing retention and improving the quality of online teaching and learning was much needed.<sup>8</sup>

A comparison-based cross-sectional study was conducted by Holmes CM; et al. in 2017 in the USA whose purpose was to find out the comparison between on-campus and online learning outcomes for a research method course among 40 participants according to the result of the study was there was no significant difference among both students (online and on-campus) performance.<sup>9</sup> Among the recent studies, Sarwar, et al. conducted a study in Pakistan in 2020 in which the self-reported effectiveness of online classes in undergraduate dental students was measured in 1207 students. The first-year students revealed poor connectivity with teachers as compared with the other year's students (mean rating:  $3.17 \pm 1.197$ ,  $p < 0.001$ ), and the first-year students also strongly disagreed with the efficacy of online classes

(mean rating:  $4.14 \pm 0.935$ ) as compared to other year students. The Sindh, KPK, and Baluchistan students were not satisfied with the quality of available online resources as compared to Punjab students.<sup>10</sup>

According to our search, published work on the sense of classroom community and perceived learning among DPT students was not available on databases so we desired to compare the level of sense of classroom community and perceived learning in both offline and online modes of learning mode among DPT students during COVID-19.

### **METHODS AND METHOD:**

This was an Observational/Cross-Sectional Survey conducted in the Department of Allied Health Sciences, University of South Asia. The sample size of 357 participants was selected through the online software Raosoft with a 5% margin of error and 95% Confidence Interval with the population size of 5000 DPT students. The sampling technique used for the study was non-probability Convenient Sampling. Data was collected from April 2021 to June 2021. Male and female DPT students were enrolled in this study. Students who had participated in online study courses/programs were included in the study (One semester/6months). New admission first-semester students were excluded from the study due to non-exposure to online learning mode. The study variables were Perceived Learning and Sense of Classroom Community. Data was collected with the questionnaires Classroom community scale (CCS) & CAP Perceived learning scale.<sup>11,12</sup> Method was self-administered questionnaires. Students were asked to

fill out the same questionnaires twice, i.e. one for online mode and the other one for offline mode. Wilcoxon signed-rank test was used to compare the mean score of sense of classroom community and perceived learning among DPT students.

### **RESULTS:**

Among 357 students, the mean age of students was  $20.69 \pm 1.642$  years. 22% (n=78) of students studied online mode less than or equal to 6 months. 78.2 % (n=279) of students studied online mode less than or equal to 12 months. Table III showed that score of Perceived learning in offline mode was higher ( $X=33.10$ ,  $\pm SD=7.540$ ) as compared to Perceived learning in online mode ( $X=27.03$ ,  $\pm SD=7.365$ ). Table III also showed that the sense of classroom community was higher in offline mode ( $X=44.03$ ,  $\pm SD=7.921$ ) than in online mode ( $X=39.91$ ,  $\pm SD=7.945$ ). When Wilcoxon signed rank test was applied to compare both variables, p values were less than 0.05 which rejected the null hypothesis so there was a significant difference in on-campus and online perceived learning and classroom community among DPT students. Results revealed that CAP perceived learning among online mode of learning was significantly lower (Md=27.00, n=357) as compared to offline mode of learning (Md=33.00, n=357),  $z=-10.215$ ,  $p = 0.000$  ( $p < 0.05$ ) with large effect size,  $r = 0.42$  and classroom community among online mode of learning was significantly lower (Md=40.00, n=357) as compared to offline mode of learning (Md=44.00, n=357),  $z = -7.003$ ,  $p = 0.000$  ( $p < 0.05$ ) with large effect size,  $r = 0.4038$ .

TABLES & FIGURES

Table I. Descriptive statistics of age of students

	N	Minimum	Maximum	Mean	Std. Deviation
Age	357	17	25	20.69	1.642

FIG 1. Graphical Representation of the Gender of Students

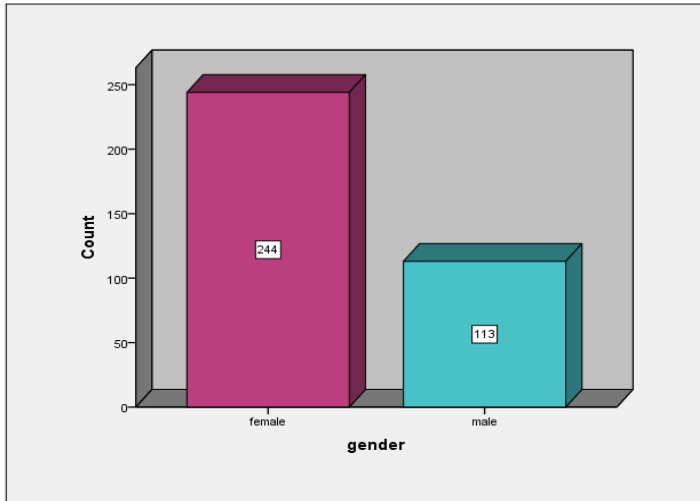


FIGURE 02: Graphical Representation of Semester-Wise Distribution of Students

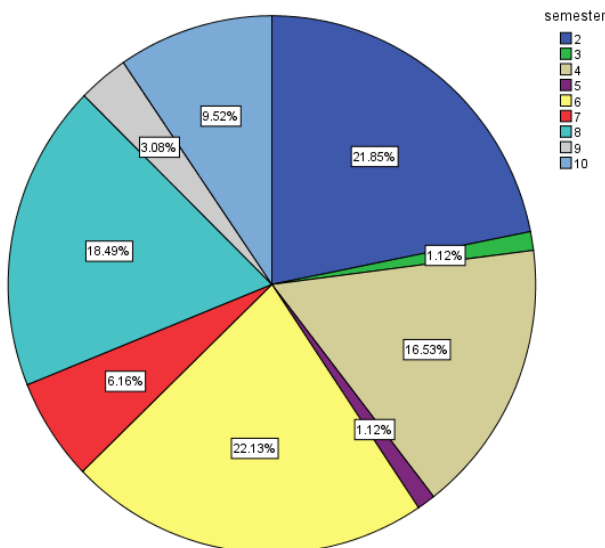


TABLE II.

Descriptive Statistics of Duration of Online Mode of Learning

	Frequency	Percent
Less than or equal to 6 months	78	21.8
less than or equal to 12 months	279	78.2
<b>Total</b>	<b>357</b>	<b>100.0</b>

TABLE III.

Descriptive Statistics of Total Score of Perceived Learning and Classroom Community in Online and Offline Modes of Learning

	Mean ± SD	Mean ± SD
	Perceived Learning in the online mode of Learning	Perceived Learning in offline mode of Learning
<b>Cognitive</b>	9.02 ± 2.535	10.73 ± 2.7363
<b>Affective</b>	9.43 ± 3.809	11.43 ± 3.426
<b>Psychomotor</b>	8.60 ± 2.999	10.94 ± 3.053
<b>Total score</b>	27.03 ± 7.365	33.10 ± 7.540
	Classroom community in the online mode of learning	Classroom community in offline mode of learning
<b>Connectedness</b>	20.08 ± 4.905	22.31 ± 4.667
<b>Learning</b>	19.89 ± 4.977	21.71 ± 5.158
<b>Total score</b>	39.91 ± 7.945	44.03 ± 7.921

**TABLE IV.**

Shapiro-Wilk Test of Normality of Perceived Learning in Online and Offline Modes of Learning

	Statistic	Df	Sig.
Total CAP Perceived Learning Score in offline mode of learning	.993	357	.110
Total CAP perceived Learning in the online mode of learning	.984	357	.000

**TABLE V:**

Shapiro-Wilk Test of Normality of Classroom Community in Online and Offline Mode of Learning

	Statistic	Df	Sig.
classroom community scale score in the offline mode of learning	.979	357	.000
Classroom community scale score in the online mode of learning	.974	357	.000

**TABLE VI:**

Wilcoxon Signed Rank Test for Comparing Perceived Learning and Classroom Community In Online and Offline Modes of Learning

	Median	Wilcoxon	Z	<u>Asymp. Sig</u> (2-tailed)
<b>Perceived learning score in the online mode of learning</b>	27.00	46749.00	-10.215	0.000
<b>Perceived learning score in offline mode of learning</b>	33.00	10204.00		
<b>Classroom community score in the online mode of learning</b>	39.91	39226.00	-7.003	0.000
<b>Classroom community score in offline mode of learning</b>	44.00	15059.00		

## DISCUSSION:

The COVID-19 pandemic troubled the world in early 2020 and nearly leads to a revolutionary stop. The students are required to stay at home due to the shutdown of their academic institutes. Covid-19 forced educational professionals to reconsider the conventional manner of on-campus studying. The pandemic has harmed university students' practical work e.g. labs, hospital rotations. The present study was conducted to compare the level of sense of classroom community and perceived learning in on-campus and off-campus modes of learning among DPT students during COVID-19.

According to the results of the study, the score of Perceived learning in offline mode was higher ( $X=33.10$ ,  $\pm SD=7.540$ ) as compared to Perceived learning in online mode ( $X=27.03$ ,  $\pm SD=7.365$ ) while simultaneously sense of classroom community was higher in offline mode ( $X=44.03$ ,  $\pm SD=7.921$ ) than in in 2020 in which they evaluated the self-reported efficacy of online lectures offered by different Pakistan dentistry institutes. Results of this study showed that the most of students were disappointed with the level of teaching of faculty for online classes, the learning administration system, and the standard of learning facilities available. The lowest rating was reported for questions associated with the efficacy of online lectures (mean rating: 3.83 and 3.781 out of 5). First-year students were strongly dissatisfied with the efficacy of online lectures (mean rating:  $4.14 \pm 0.935$ ) and also reported less interaction with teachers.<sup>10</sup>

Another study was conducted by Adnan M. et.al in Pakistan in 2020 in which researchers investigated the

online mode of learning ( $X=39.91$ ,  $\pm SD=7.945$ ). These results are in line with the findings of the study that was conducted by Aydin IE, Gumus S et.al. in Turkey in 2016 in which they assessed the relationship between the sense of classroom community, vision of success in the team development procedure, and their choices of studying in the team among Turkish online learners. The results of this study showed that the sense of classroom community in online learners is lower ( $X=1.98$ ) than the mean. Mostly, the online learner's average was less in the learning ( $X=1.93$ ) as compared to the connectedness( $X=2.03$ ). The online program did fail to develop a good sense of classroom community in learners.<sup>7</sup>

The result of another study is in line with the findings of our study that was conducted by Sarwar, et al. in Pakistan behavior of higher education students in Pakistan towards mandatory online and distance education university programs during COVID-19. Results of this study showed that online education was unable to build desired outcomes in developing countries such as Pakistan, where most of the students were unable to approach the internet because of technical and also financial problems. Hardly 10.3% of students observed that digital learning is more prompt than traditional learning, while most of the students (71.4%) observed voted in opposition to the belief that digital learning is more prompt as compared to traditional learning. 78.6% of students notice that face-to-face communication with a teacher is compul-



sory for learning and distance education.<sup>13</sup>

Another study was conducted by Barczyk C, et.al in California and India in 2017 in which they assessed the influence of nature type on students' sense of classroom connectedness was assessed in a study of higher-level education of business programs that used Facebook to increase classroom training. Results of this study showed that for both groups (Facebook enhanced and non-facebook enhanced), students' level was considerably inversely correlated with the sense of classroom community on the  $p < .05$  level. The inverse correlation showed that whole-time students learned a lower sense of classroom community than their part-time fellows.<sup>14</sup> Similarly a study conducted by Baczek M, in Poland in 2021 evaluated the medical Students' remarks on digital learning during the pandemic of COVID-19. Results of this study showed that digital learning was observed less productive than traditional learning as regards increasing skills ( $M=2.03$ ,  $M=4.3$ ) ( $P<.001$ ). In online classes, medical Students observed that they were not fully attentive as compared to on-campus classes ( $X=2.72$ ,  $X=3.82$ ) ( $P<.001$ ).<sup>15</sup>

This study is the first survey performed to compare the level of sense of classroom community and perceived learning in on-campus vs. off-campus mode among DPT students during COVID-19. The findings of this research highlighted that perceived learning and sense of classroom community are higher in on-campus mode as compared to off-campus mode among DPT students. As the data was collected from only one DPT institute, it has limited generalizability. We strongly recommend that future researchers must

work to investigate the various factors that are leading to the lower score of sense of classroom community and perceived learning in the on-campus and off-campus mode of learning among students so that level of confidence may be enhanced & gaps may be bridged in online or web-based learning among students.

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### **REFERENCES:**

1. Mumtaz N, Saqulain G, Mumtaz N. Online Academics in Pakistan: COVID-19 and Beyond. Pak J Med Sci. 2021 Jan-Feb;37(1):283-287. <https://doi.org/10.12669/pjms.37.1.2894>.
2. Richardson JC. Examining social presence in online courses in relation to students' perceived learning and satisfaction. State University of New York at Albany; 2001.
3. Trespalacios J, Perkins R. Sense of community, perceived learning, and achievement relationships in an online graduate course. Turk. Online J. Distance Educ.2016 Jul 1;17(3):31-49. <https://doi.org/10.17718/tojde.12984>
4. Palloff RM, Pratt K. Building online learning communities: Effective strategies for the virtual classroom. John Wiley & Sons; 2007 Jul 20.

5. Rovai AP. A preliminary look at the structural differences of higher education classroom communities in traditional and ALN courses. *Journal of Asynchronous Learning Networks*. 2002 Jul 1;6(1):41-56. <https://doi.org/10.24059/olj.v6i1.1871>
6. Aranyossy M, Kulcsár E. Blended learning in practice: The impact of an economic simulation game on perceived learning. *Economy and Finance: English Language Edition of Gazdaság és Pénzügy*. 2020;7(2):233-52. <https://doi.org/10.33908/EF.2020.2.7>
7. Aydin IE, Gumus S. Sense of classroom community and team development process in online learning. *Turk. Online J. Distance Educ*. 2016;17(1):60-77. <https://doi.org/10.17718/tojde.-09900>
8. Gray JA, DiLoreto M. The effects of student engagement, student satisfaction, and perceived learning in online learning environments. *International Journal of Educational Leadership Preparation*. 2016 May;11(1):n1. <https://eric.ed.gov/?id=EJ1103654>
9. Holmes, C. M., & Reid, C. (2017). A Comparison Study of On-campus and Online Learning Outcomes for a Research Methods Course. *The Journal of Counselor Preparation and Supervision*, 9(2). <http://dx.doi.org/10.7729/92.1182>
10. Sarwar H, Akhtar H, Naeem MM, Khan JA, Waraich K, Shabbir S, Hasan A, Khurshid Z. Self-reported effectiveness of e-Learning classes during COVID-19 pandemic: A nation-wide survey of Pakistani undergraduate dentistry students. *Eur J Dent*. 2020 Dec;14(S 01):S34-43. <https://doi.org/10.1055/s-0040-1717000>
11. Rovai AP, Wighting MJ, Lucking R. The classroom and school community inventory: Development, refinement, and validation of a self-report measure for educational research. *The internet and higher education*. 2004 Oct 1;7(4):263-80. <https://doi.org/10.1016/j.iheduc.-2004.09.001>
12. Rovai AP, Wighting MJ, Baker JD, Grooms LD. Development of an instrument to measure perceived cognitive, affective, and psychomotor learning in traditional and virtual classroom higher education settings. *The Internet and higher education*. 2009 Jan 1;12(1):7-13. <https://doi.org/10.1016/j.iheduc.2008.10.002>
13. Adnan M, Anwar K. Online Learning amid the COVID-19 Pandemic: Students' Perspectives. *Online Submission*. 2020;2(1):45-51. <https://doi.org/10.33902/JPSP.2020261309>
14. Barczyk C, Duncan D. Facebook enhanced college courses and the impact of personality on sense of classroom community. *Information Systems Education Journal*. 2017 Jan 1;15(1):42. <https://eric.ed.gov/?id=EJ1135736>
15. Bączek M, Zagańczyk- Bączek M, Szpringer M, Jaroszyński A, Woźakowska-Kapłon B. Students' perception of online learning during the COVID-19 pandemic: a survey study of Polish medical students. *Medicine*. 2021 Feb 19;100(7). <https://doi.org/10.1097/MD.00000000000024821>