

Assessing Gendered Participation Spaces in Online Learning Environments in Higher Education in Pakistan

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Abstract

The study has been designed to evaluate gender spaces in virtual learning environments in higher education in Pakistan. It has been observed that social constructionists, feminists, and gender-related researchers around the world all agree that gender is a social construct. There are only two characteristics: femininity and masculinity. Gender spaces generally describe the situations or places that are viewed or determined by gendered expectations and standards. These places may involve social, psychological, or physical aspects, and they often represent or maintain gender norms in society. A quantitative study has been conducted, and a sample of 316 students enrolled in the BS (4 Years) social sciences program in a public sector university has been selected. A cross-sectional study has been conducted, and a structured questionnaire has been used, consisting of different sections including socio-demographic, gender spaces, and virtual learning environment. Pilot testing has been done on 30 random students, and an attitudinal scale of (dis)agreement has been used. Statistical analysis, including univariate, normality, Kendall's tau_b, and Chi-Square, has been done to conclude. The study findings outlined that the data were non-parametric and all the variables, including gender, spaces, and virtual learning environment, had a positive and significant correlation and also had an association based on the Chi-Square test.

Key Words

Gender Participation, Virtual Learning, Higher Education, Students, University

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Introduction

Gender spaces generally describe the situations or places that are viewed or determined by gendered expectations and standards (Shoaib, 2023). These places may involve social, psychological, or physical factors, and they often represent or maintain gender norms in society (Shoaib et al., 2021; Shoaib et al., 2024; Manzanera-Ruiz et al., 2023). The concept of practicing gender, which illustrates how gender is shaped by social interactions and institutional frameworks and is an organized systematic, and repeated achievement in daily life (McDowell & Sharp, 2016). Understanding gendered social practices is greatly improved by this study, which explores how gender exists in a variety of situations and environments over time in all societies (Gender, 2002). Gender spaces are any cultural or digital contexts and surroundings that both influence and are influenced by gender norms and expectations (Shoaib & Zaman, 2025). These places can be specified areas such as bathrooms with a particular gender social situations

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where a particular gender role is reinforced, or online forums in which an individual's gender identity and expression are regulated (Shoaib & Ullah, 2019; Pfeiffer & Butz, 2005).

Virtual learning includes learning opportunities that are provided completely or in part using online mediums. It includes promoting education and communication between learners and instructors by applying online materials, webinars, and learning management systems LMS (Shoaib & Ullah, 2021b; Livingstone et al., 2008). This type of education may involve both synchronous (live sessions) and asynchronous (pre-recordings and self-paced study). Online learning gives students the flexibility to access materials and participate in classes from different locations (Shoaib et al., 2025). A web-based system that enables professors and students to take classes and learn from any place with a connection to the internet is known as a virtual learning environment. It offers all of the materials and tools required for learning, enabling convenient learning (Shoaib & Ullah, 2021a; Hu et al., 2011). Online classrooms and virtual learning settings are similar. Instructors and learners can communicate online like that of a traditional classroom. Students can access courses, see videos, attend live classes, take part in arguments, turn in assignments, and receive teacher feedback in a virtual learning environment. All of your learning resources are in one electronic place (Shoaib et al., 2025). Hence, the study has been designed to evaluate gender spaces in virtual learning environments in higher education in Pakistan.

Review of Literature

The argument of the study asserted that the experience of female students on the dynamics of gender had been found in virtual learning settings at the tertiary level (O'Leary McNeice, 2020). However, the study findings outlined that restriction actions approaching and utilizing public and private places had been found in mobility-restricted areas (Shoaib, 2021; Olesen & Lassen, 2012). Nonetheless, the study of Abu-Rabia-Queder and Karplus (2013) asserted that restoring identification and rebuilding space had been found at the local Swedish university. Moreover, the study findings showed that in different national settings, the gender and higher educational institutions performance had been found during digital learning (Shoaib et al., 2021; Shoaib et al., 2021; Abu-Rabia-Queder & Arar, 2011). Contently, the study findings concluded that the university's experience during COVID-19 on library usage found in the virtual learning places at the tertiary level (Shoaib et al., 2025; Adetayo et al., 2022). Besides, the study of Akramy (2022) indicated that Afghanistan's higher educational institutions examined the shocks and aftershocks of the COVID-19 pandemic on students' learning and found gender spaces in online learning. However, the study findings examined that investigating how diversity develops in virtual learning environments had been found in at higher institutions (Shoaib, 2023a; Altman & Gajjala, 2006).

The argument of the study asserted that virtual classrooms and digital publications had found the challenges to a radical invention at the tertiary level (Ball et al., 2008). However, the study findings outlined that COVID-19 examined the student's confidence and vulnerability in learning at the tertiary level and found gender-segregated areas (Shoaib, 2023b; Bartolic et al., 2022). Nonetheless, the study of Bayne (2008a) asserted that considering the online instructional setting as an interactive activity in higher education and found inclusive learning during online classes. Moreover, the study findings showed that virtual realities as instructional and educational environments had been found in tertiary education in strange spaces (Shoaib, 2024a; Bayne, 2008b). Contently, the study findings concluded that investigation on gender and space at the tertiary level found gender spaces in virtual learning environments (Shoaib et al., 2025; Beckingham, 2012). Besides, the study of Bennett (2006) indicated that on pedagogies and sexualities, there is an introductory note for female students had been found at a higher level. However, the study findings examined that some strategies promoting equal opportunity for women and careers in higher education had been found in virtual education (Shoaib et al., 2025; Berggren, 2011).

The argument of the study asserted that in private and public spaces there's an interaction between male and female students had been found at the tertiary level (Shoaib, 2024b; Berkowitz et al., 2007). Nonetheless, the study

findings outlined that racial and gender disparities prevail in the United Kingdom's higher educational organizations (Bhopal & Henderson, 2021). Moreover, the study of Black et al. (2019) asserted that developing a sense of identity in consciousness discussions was found in digital and web-based environments at higher levels. However, the study findings showed that metropolitan space, gender, and class had been found in public and private areas in modern cities (Bondi, 1998). Contently, the study findings concluded that the effects of the internet things on education had been found from virtual learning to educational networks (Brown, 2010). Besides, the study of Browne et al. (2006) indicated an analysis of UK higher learning universities' use of virtual classrooms from a long-term viewpoint for students. Moreover, the study findings examined that international online learning for students to examine discrimination had been found in the United Kingdom, and South Africa (Buchanan et al., 2008).

The argument of the study asserted that gender and space affected by the virtual learning environment had been found among students at the tertiary level (Flather, 2011). However, the study findings outlined that the effect of local higher learning facilities on overseas students' safety had been found at a higher level (Forbes-Mewett, 2015). Nonetheless, the study of Fromanger (2012) asserted that differences between the victims displayed in public and private spaces throughout south Iran had been found in both genders of students at the tertiary level. Moreover, the study findings showed that disparities between genders had been found in tertiary education subject matter instruction utilizing virtual platforms (García-Gil & Andreu, 2017). Contently, the study findings concluded that gender matters in the virtual learning environment at the tertiary level had been found among both gender students (Goulão, 2013). Besides, the study of Green and Adam (2001) indicated that gender spaces in remote learning affected the student's academic performance and motivational level which was found during online classes at the tertiary level. However, the study findings examined that higher learning and a journey back to regional roots of female social context had been found in gender spaces in remote learning at higher levels (Haley, 2018).

The argument of the study asserted that assessment of group work by using web-based tools facilitated students had been found in virtual learning at higher level (Hartford, 2005). However, the study findings outlined that a systematic literature review of personalized online assessment at higher educational institutions had found virtual learning at the tertiary level (Hattingh & Northcote, 2023). Nonetheless, the study of Hay (2008) asserted postmodern methods for a worldwide virtual community for learning and instruction had been found in the environment of higher education. Moreover, the study findings showed that the function of online learning places in engaging students in higher learning had been found in gender spaces in online classes (Heaton-Shrestha et al., 2009). Contently, the study findings concluded that the politics of gender and power in the higher educational organizations had been found among both genders students at tertiary level (Henry & Natanel, 2016). Besides, the study of Herodotou et al. (2020) indicated that an examination of comparison of digital optics in universities using online learning techniques had been found during remote learning. However, the study findings considered anything about the course of examining the process and content of advanced education about gender equality found at the tertiary level (Hinton-Smith et al., 2022).

The argument of the study asserted that the experience of the Chinese University of Hong Kong in virtual learning settings had been found in gender spaces at the tertiary level (Hu et al., 2011). However, the study findings outlined that examining students' psychological objectives regarding using a virtual desktop classroom had been found as part of a multiverse educational setting at the university (İbili et al., 2023). Further, the study of Iglesias Pérez et al. (2022) asserted that in higher educational organizations the role of peer and self-assessment had been found in remote learning places at the tertiary level. In a nutshell, the study findings showed that establishing digital practice groups in higher educational institutions had been found to utilize technology at a higher level (Jacqueline, 2004). Moreover, the study findings concluded that using social digital reality on an integrated educational site to

promote learning also had been found through technology at a higher level (Jin et al., 2010). Contently, the study by Jones (2020) indicated that formative evaluation and feedback have underlying significance as educational resources for developing and refining basic legal skills among students at the tertiary level. Besides, the study findings examined that in Uzbekistan public life in private spaces had been found in the context of Islamic women and identity (Karimova, 2015).

The argument of the study asserted that analyzed how technological innovations affected the results of learners at the tertiary level in virtual learning settings and also found internet connectivity issues (Lacka & Wong, 2021). Further, the study findings outlined that in university settings online territory and the utilization of online resources for instruction and learning region had been found in digital aspects of sources at higher levels (Lemke & Ritter, 2000). However, the study of Leppisaari et al. (2011) asserted that dynamic collaborative development of genuine educational ideas in higher educational institutions worldwide had been found gender neutral spaces at the tertiary level. Nonetheless, the study findings showed that online educational settings are influenced by an area's national culture and acceptance of a comprehensive analysis in universities (Li et al., 2021). In a nutshell, the study findings concluded that developing strategies for equal treatment of women in higher education had been found in which traits of humanity are important (Loots & Walker, 2015). Contently, the study of Pendergast and Kapitzke (2006) indicated that negotiation is the new space in virtual learning settings for virtual teachers had been found at the university level. Moreover, the study findings examined the perception of the students related to the online learning environment at higher educational institutions and also found gender inclusivity (Love & Fry, 2006).

The Data and Methods

A quantitative study has been conducted and a sample of 316 students enrolled in the BS (4 Years) social sciences program in a public sector university has been selected. A cross-sectional study has been conducted and a structured questionnaire consists of different sections including gender spaces, mobility restriction, gender-sensitive language, negotiation and contrasting, gender inclusive, generally, absolutely, conditionally, public space, private space, gender neutral spaces, audio/video material, online assessment, web-based platform, digital aspects of sources, assessment method, gender spaces, and virtual learning environment. Pilot testing has been done on 30 random students and an attitudinal scale of (dis)agreement has been used. Statistical analysis including univariate, normality, Kendall's tau_b, and Chi-Square has been done to conclude.

Results and Discussion

The table showed that 33.5 percent of students are from up to 19 age group. Similarly, 37.4 percent of students are from the 20-21 age group. 22.5 percent of students are from the 22-23 age group. However, 5.1 percent of students are from the 24-25 age group. 1.5 percent of students are from the 26 and above age group. Similarly, the data analysis showed that the gender of 19.3 percent of students were male and the remaining 80.7 percent of students were female.

However, the data analysis pointed out that the family occupation of the students is labor with the highest percentage of 28.2. Similarly, the government job holders with a medium percentage of 18.3, and the last one with the lowest percentage of 11.4 is private. Besides, the data showed that in this table most families 55.3 percent have 71000 and above monthly income similarly, 18.1 percent of families have 41-50 thousand income monthly, and 4.7 percent of families have up to 30000 thousand monthly incomes. Contently, the data pointed out that in this table most people in this group have between 2 and 5 siblings with a high percentage of 48.7 having 4 to 5 siblings. Only a small ratio of 1.9 percent have 8 and above siblings. Further, the data analysis pointed out that this table shows most of the individuals 50.1 percent have between 4 - 6 persons in their homes. Similarly, 40.5 percent have a 7 - 9 family size. The 0.6 percent of families have 13 and above family size. Likewise, the data analysis showed

that in this table most families belong to nuclear type with the highest percentage of 63.6. Moreover, 29.4 percent of families are from the joint family system, and the lowest percentage of 7.0 belongs to the extended family type. In a nutshell, the data pointed out that a high percentage of 57.3 families live in rural areas. Similarly, 42.7 percent of people live in urban areas.

Table 1*Socio-Demographic Characteristics of Students*

Category	f	%	Category	f	%
Age			Occupation		
Up to 19	106	33.5	Farmer	83	26.3
20 – 21	118	37.4	Government job	56	18.3
22 – 23	71	22.5	Private job	36	11.4
24 – 25	16	05.1	Labor	89	28.2
26 and above	05	01.5	Unemployed	52	16.1
Total	316	100	Total	316	100.2
Family Monthly Income			Gender		
Up to 30000	15	4.7	Male	61	19.3
31 – 40	9	2.8	Female	255	80.7
41 – 50	57	18.1	Total	316	100
51 – 60	29	9.3	Family Type		
61 – 70	31	9.8	Nuclear	201	63.6
71 and above	175	55.3	Joint	93	29.4
Total	316	100	Extended	22	07.0
Number of Siblings			Total	316	100
Up to 1	10	3.2	Family Size		
2 – 3	97	30.7	Up to 3	13	4.1
4 – 5	154	48.7	4 – 6	158	50.1
6 – 7	49	15.5	7 – 9	128	40.5
8 and above	06	01.9	10 – 12	15	04.7
Total	316	100	13 and above	02	00.6
Residential Area (n=316)			Total	316	100
Rural	181	57.3			
Urban	135	42.7			

Table 2*Normality Test*

Variables	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Gender Spaces	.084	316	.000	.987	316	.007
Mobility Restriction	.086	316	.000	.989	316	.015
Gender Sensitive Language	.113	316	.000	.967	316	.000
Negotiation and Contrasting	.154	316	.000	.967	316	.000
Gender Inclusive	.100	316	.000	.978	316	.000
Generally	.090	316	.000	.977	316	.000
Absolutely	.115	316	.000	.973	316	.000
Conditionally	.142	316	.000	.961	316	.000
Public Space	.110	316	.000	.976	316	.000
Private Space	.088	316	.000	.986	316	.004
Gender Neutral Spaces	.125	316	.000	.977	316	.000
Audio/Video Material	.110	316	.000	.963	316	.000

Variables	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Online Assessment	.143	316	.000	.975	316	.000
Web-Based Platform	.095	316	.000	.966	316	.000
Digital Aspects of Sources	.118	316	.000	.969	316	.000
Assessment Method	.129	316	.000	.968	316	.000
Gender Spaces	.048	316	.073	.994	316	.264
Virtual Learning Environment	.053	316	.031	.991	316	.062

a. Lilliefors Significance Correction

Table 2 pointed out the normality experiment of information. The calculated values of Kolmogorov-Smirnov and Shapiro-Wilk statistical test of primary figures confirmed the data as not normally distributed except the variable gender spaces. Hence, non-parametric statistical analysis had been applied on the data.

Table 3

Kendall's tau_b Statistical Test

Var.	GESP	MORE	GESL	NEAC	GEIN	GENE	ABSO	COND	PUSP	PRSP	GENS	VILE
GESP	1.000	.167**	.234**	.236**	.258**	.256**	.204**	.202**	.255**	.215**	.168**	.315**
MORE		1.000	.223**	.294**	.100*	.049	.188**	.303**	.095*	.258**	.053	.119**
GESL			1.000	.268**	.143**	.196**	.224**	.228**	.177**	.300**	.173**	.224**
NEAC				1.000	.153**	.164**	.170**	.378**	.152**	.250**	.104*	.172**
GEIN					1.000	.329**	.310**	.135**	.247**	.136**	.321**	.323**
GENE						1.000	.270**	.196**	.294**	.193**	.290**	.426**
ABSO							1.000	.223**	.222**	.258**	.251**	.309**
COND								1.000	.170**	.343**	.191**	.187**
PUSP									1.000	.232**	.268**	.347**
PRSP										1.000	.149**	.246**
GENS											1.000	.360**
VILE												1.000

Table 3 describes Kendall's tau_b statistical test of the variables. The analysis of the data pointed out that there was a weak positive correlation ($\tau_b = .167$) between gender spaces and mobility restriction. The analysis of the data pointed out that there was a weak positive correlation ($\tau_b = .234$) between gender spaces and gender-sensitive language. The analysis of the data pointed out that there had a weak positive correlation ($\tau_b = .236$) among gender spaces and negotiation and contrasting. The analysis of the data pointed out that there had a weak positive correlation ($\tau_b = .258$) between gender spaces and gender inclusive. The analysis of the data summarized that there was a puny positive connection ($\tau_b = .256$) among gender spaces and generally. The analysis of the data shows that around had a weak affirmative link ($\tau_b = .204$) among gender spaces and absolutely. The analysis of the data piercing obtainable that here had a pathetic optimistic relationship ($\tau_b = .202$) among gender spaces and conditionally. The analysis of the data showed that there was a feeble confident association ($\tau_b = .255$) between gender spaces and public spaces. The analysis of the data showed that there was a scrawny encouraging relationship ($\tau_b = .215$) between gender spaces and private spaces. The analysis of the data pointed out that there was a weak positive correlation ($\tau_b = .168$) between gender spaces and gender-neutral spaces. The analysis of the data pointed out that there was a moderate positive correlation ($\tau_b = .315$) between gender spaces and virtual learning environments. Similarly, all other variables have also a positive correlation and confirm the significance.

Table 4*Gender Spaces and Virtual Learning Environment (Kendall's tau_b)*

Variables		Gender Spaces	Virtual Learning Environment
Kendall's tau_b	Gender Spaces	Correlation Coefficient	1.000
		Sig. (2-tailed)	.437**
		N	.000
	Virtual Learning Environment	Correlation Coefficient	.437**
		Sig. (2-tailed)	1.000
		N	.000

** . Correlation is significant at the 0.01 level (2-tailed).

The data analysis in Table 5 indicated that there had been an association (chi-square = 1510.063) between gender spaces and virtual learning environments. The data analysis indicated that there had been an association (chi-square = 1777.785) between mobility restriction and virtual learning environment. The data analysis indicated that there had been an association (chi-square = 1635.847) between gender-sensitive language and virtual learning environments. The data analysis indicated that there had been an association (chi-square = 1373.785) between negotiation and contrasting and virtual learning environments.

The data analysis indicated that there had been an association (chi-square = 1637.464) between gender-inclusive and virtual learning environments. The data analysis indicated that there had been an association (chi-square = 1567.518) between general and virtual learning environments. The data analysis indicated that there had been an association (chi-square = 2179.970) between absolute and virtual education environments. The data analysis indicated that there had been an association (chi-square = 1631.311) between conditional and virtual learning environments.

Table 5*Chi-Square Statistical Test (Dependent Variable=Virtual Learning Environment)*

Independent variables	Chi-Square Value	Df	Asymp. Sig. (2-sided)
Gender Spaces	1510.063 ^a	1122	.000
Mobility Restriction	1777.785 ^a	1386	.000
Gender Sensitive Language	1635.847 ^a	1320	.000
Negotiation and Contrasting	1373.785 ^a	1386	.587
Gender Inclusive	1637.464 ^a	1254	.000
Generally	1567.518 ^a	1188	.000
Absolutely	2179.970 ^a	1320	.000
Conditionally	1631.311 ^a	1320	.000
Public Space	1740.854 ^a	1320	.000
Private Space	1590.815 ^a	1254	.000
Gender Neutral Spaces	1804.824 ^a	1254	.000
Audio/Video Material	1977.826 ^a	1320	.000
Online Assessment	1989.349 ^a	1188	.000
Web-Based Platform	3394.139 ^a	1848	.000
Digital Aspects of Sources	2316.750 ^a	1320	.000
Assessment Method	2274.994 ^a	1320	.000
Gender Spaces	7421.621 ^a	6270	.000

The data analysis indicated that there had been an association (chi-square = 1740.854) between public space and the virtual learning environment. The data analysis indicated that there had been an association (chi-square = 1590.815) between private space and virtual learning environment. The data indicated that there had been an

association (chi-square = 1804.824) between gender-neutral spaces and virtual learning environments. Similarly, all other variables had a similar association with the virtual learning environment of students at the tertiary level.

Conclusion

The conclusion of this study is based on the primary data collected from the students enrolled in a public sector university in Pakistan. The study concluded that negotiation and contrast, gender-sensitive language, mobility restriction, and gender-inclusive had a positive correlation and an association with the virtual learning environment at the tertiary level. However, the overall study concluded that generally, absolutely, and gender-neutral spaces had also a positive correlation and an association with virtual learning environments. Moreover, the audio/video material has been positively affecting the virtual learning environment. Nonetheless, the study analysis concluded that gender spaces, public spaces, private spaces, and gender-neutral spaces were positively associated and correlated with the virtual learning environment. Further, the primary data concluded that conditionally, web-based platforms and assessment methods had positively favorable effects on the virtual learning environment. However, the study analysis pointed out that online assessment had also a positive correlation and an association with virtual learning environments among students at tertiary levels.

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