

**A Sociological Scale of Third Space Pedagogy and Digital Learning Practices:
Assessing Learning Outcomes among Female Students in Higher Education in
Pakistan**

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Abstract

This study aimed to develop and validate a comprehensive scale to measure third space pedagogy, digital learning practices, and learning outcomes among female students in Pakistani higher education institutions. A quantitative research design was employed, and data were collected from 198 female students enrolled in BS (4-Year) programs at a public sector university through a cross-sectional survey method. A structured questionnaire based on an attitudinal scale of agreement and disagreement was used as the primary tool of data collection. The study examined multiple dimensions of Third Space Pedagogy, including integration of students' cultural knowledge, dialogic learning practices, bridging theory and real-world contexts, learning agency and empowerment, and collaborative knowledge construction. In addition, dimensions of digital learning practices and learning outcomes were also incorporated into the scale. Reliability analysis confirmed strong internal consistency among all constructs, while Confirmatory Factor Analysis (CFA) validated the relevance and significance of all scale items. The findings established that the developed instrument is statistically reliable and valid for assessing educational and sociological dimensions of learning in higher education. The study contributes a multidimensional scale that has been used in academic and empirical research related to pedagogy, digital learning, and student learning outcomes.

Keywords: Third Space Pedagogy, Digital Learning Practices, Learning Outcomes, Scale Development, Female Students, Higher Education

Introduction

Learning outcomes of students increases when student achieve good grades, having strong communication skills that encourage them to learn more and achieve target goals (Lyu, Shepherd, & Lee, 2024; Shoaib & Ullah, 2026). Students understand the main idea through conceptual learning and finding reason behind things to understand things more easily and generate critical thinking (Shoaib, Srosh, Mobeen, & Abdullah, 2026a, 2026b). Critical thinking basically their thinking ability and understanding new thing through questioning, taking interests in things, focus on things to understand them and gain knowledge (Shoaib, Shamraiz, Baneen, & Abdullah, 2026c; Shoaib, Shamraiz, Noor, & Abdullah, 2026; Yu, Yu, Xu, Xu, & Wu, 2022). Students learn more from practical's rather than theoretical content (Leonard, Burns, Hamilton, Taylor, & Tanck, 2024; Shoaib, Shamraiz, Baneen, & Abdullah, 2026a, 2026b, 2026d). Now students had more focus on learning and understanding then just rote memorization (Shoaib, Shamraiz, Abbas, & Abdullah, 2026; Shoaib, Shamraiz, Abdullah, & Shahzadi, 2026a, 2026b; Zhang, Wen, & Liu, 2022). Skill based learning is also one of them in which students basically do thing by their own (Shoaib, Shahzadi, Iqbal, & Abdullah, 2026; Shoaib, Shahzadi, Shamraiz, & Abdullah, 2026a, 2026b, 2026c), practice new things that make them capable of doing thing like that and help them to understand as such type of learning practices increases learning outcomes among students (Jao, Chen, & Yeh, 2024; Shoaib, Sarfraz, & Kausar, 2026a, 2026b; Shoaib, Sarfraz, Kausar, & Abdullah, 2026a, 2026b; Shoaib, Shahzadi, & Abdullah, 2026). Hence, this study aimed to develop and validate a comprehensive scale to measure third space pedagogy, digital learning practices, and learning outcomes among female students in Pakistani higher education institutions.

Review of Literature

The study findings asserted that third space teaching practices roles in multilingual courses (Przymus, Lengeling, Mora-Pablo, & Serna-Gutiérrez, 2022). Similarly, the analysis of the study findings articulated that agencies for learning in online education empower students and teachers (Shoaib, Kausar, Sarfraz, & Abdullah, 2026b, 2026c; Shoaib, Noor, Iqbal, & Abdullah, 2026; Shoaib, Noor, Mir, & Abdullah, 2026; Tong & An, 2022). Besides, the analysis based results pointed out that classroom coordination promotes students digital learning skills in public university (Nalaila, Wawire, & Gathara, 2022). Moreover, the study conclusion clinched that online learning in developing world during the phase of corona (Mathrani, Sarvesh, & Umer, 2022; Shoaib, Iqbal, Baneen, & Abdullah, 2026a, 2026b, 2026c; Shoaib, Kausar, Sarfraz, & Abdullah, 2026a). Furthermore, the analysis of the study pointed out that postmodernist pedagogy practices and women postmodernism in Pakistan (Mansoor & Malik, 2022; Shoaib, Ali, Hassan, & Abdullah, 2026; Shoaib, Iqbal, Iqbal, & Abdullah, 2026a, 2026b). In a similar way, argument of the study outlined that student achievements from different internship programs (Luk & Chan, 2022; Shoaib, Ahmed, Iqbal, & Abdullah, 2026b, 2026c; Shoaib, Ali, Ditta, & Abdullah, 2026). Additionally, the study outplayed that stated that learning outcomes in the context of technology and digital tools in education settings (Lin, Liu, Hwang, Chen, & Yin,

2022; Shoaib, Abdullah, & Ali, 2026; Shoaib, Abdullah, & Baneen, 2026a, 2026b, 2026c; Shoaib, Ahmed, Iqbal, & Abdullah, 2026a). It is worth to mention here that the study findings highlighted that challenges faced by using various content in learning outcomes (Shahzadi, Shoaib, Baneen, & Abdullah, 2026; Shahzadi, Shoaib, Iqbal, & Abdullah, 2026; Shamraiz, Shoaib, Baneen, & Shahzadi, 2026a, 2026b; Shoaib, Abbas, Ali, & Abdullah, 2026; Shoaib, Abbas, Shamraiz, & Abdullah, 2026). Besides, the analysis of the data indicated that learning experiences of sociology students in studying courses like social entrepreneurship. The study on the subject commissioned that finding out the ways to make vast digital learning experiences in 21st century (Hover & Wise, 2022; Sarfraz, Sheraz, Shoaib, & Abdullah, 2026; Sarfraz, Shoaib, & Kausar, 2026; Sarfraz, Shoaib, Kausar, & Abdullah, 2026; Sarfraz, Shoaib, & Sheraz, 2026a, 2026b; Shahzadi, Shoaib, & Abdullah, 2026).

The study findings asserted that facilitating student from selecting learning practices to special pedagogy. Similarly, the analysis of the study findings articulated that psychological safety plays as a mediator in student behavior in learning practices and their academic experiences (Ali, Abdullah, & Shoaib, 2026; Ali, Abdullah, & Shoaib, 2026a, 2026b; Ali, Shoaib, Shamraiz, & Abdullah, 2026; Ayub, Yazdani, & Kanwal, 2022; Larijani, Shoaib, & Abedi, 2026; Sarfraz, Kausar, Shoaib, & Abdullah, 2026). Besides, the analysis based results pointed out that students' perception for setting based pedagogy in rural areas (Ahmed, Shoaib, Iqbal, & Abdullah, 2026; Ahmed, Shoaib, Iqbal, & Abdullah, 2026a, 2026b; Anlimachie, Badu, & Acheampong, 2022). Moreover, the study conclusion clinched that academic achievement of grief teaching practices (Willer, Krebs, Castaneda, & Samaras, 2021). Furthermore, the analysis of the study pointed out that employment outcomes of students with access of digital library and information graduates (Shoaib, Zaman, & Abdullah, 2025; Waris, Shoaib, Iqbal, & Abdullah, 2025; Waris, Shoaib, Sharif, & Abdullah, 2025a, 2025b, 2025c). In a similar way, argument of the study outlined that online learning after and before Corona lockdown in schools (Scully, Lehane, & Scully, 2021). Additionally, the study outplayed that stated that students' orientation for a long lasting achievement in academic terms (Shoaib, Waris, & Iqbal, 2025a, 2025b, 2025c; Shoaib, Waris, & Iqbal, 2025; Shoaib, Waris, Iqbal, & Abdullah, 2025; Shoaib, Waris, Zaman, & Abdullah, 2025a, 2025b; Shoaib & Zaman, 2025). It is worth to mention here that the study findings highlighted that students' reactions toward critical teaching practices (Shoaib, 2021, 2023a, 2023b, 2023c, 2024a, 2024b, 2024c, 2024d, 2024e, 2025a, 2025b; Shoaib & Abdullah, 2025). Besides, the analysis of the data indicated that postmodernist teaching practices as a challenge for learning in context Pakistan. The study on the subject commissioned that the consequences stress and psychological issues in job and learning outcomes (Junaid, Haar, & Brougham, 2021).

The study findings asserted that what are the accountability and teaching practices in third space pedagogy (Guerin, 2021). Similarly, the analysis of the study findings articulated that evaluating students learning outcomes by prediction and their gender differences (Grebener, Barth, Anders, Beißbarth, & Raupach, 2021). Besides, the analysis based results pointed out that for enhancing online learning in 21st century developing teachers' identities. Moreover, the study conclusion clinched that political

divide as a mediator among third space education practices (Choo, 2021). Furthermore, the analysis of the study pointed out that what are challenges and hurdle in online learning practices for special education and also predicting teachers use of digital tools. In a similar way, argument of the study outlined that prescribing third space pedagogy as a transitional teaching practices for marginalized learners. Additionally, the study outplayed that stated that difference between classroom setting of postmodernist Pakistani classroom and Australian classrooms (Ali, 2021). It is worth to mention here that the study findings highlighted that challenges and hurdle faced by the student in online learning in lockdown. Besides, the analysis of the data indicated that STEM student supports team based online learning through an intelligent setting (Zhu & Wang, 2020). The study on the subject commissioned that analysis teaching practice to find out research action in third space (Woolf, 2020).

The Data and Methods

The present study employed a quantitative research design to examine the targeted phenomenon among female students enrolled in a public sector university. The population of the study comprised female students studying in BS (4-Year) degree programs across different academic departments. A sample of 198 respondents was selected through a proportionate random sampling technique to ensure equal representation of students from various disciplines and academic years. The study adopted a cross-sectional survey method for data collection, enabling the researcher to gather information from respondents at a single point in time. A structured questionnaire was used as the primary tool of data collection. The instrument consisted of close-ended statements measured through an attitudinal scale of agreement and disagreement to assess respondents' perceptions, attitudes, and experiences regarding the study variables. Prior to final data analysis, the reliability of the instrument was examined through reliability analysis to ensure internal consistency of the scale items. The values of Alpha have been ranging from .719 to .842. However, the values of Alpha against 120 different items of eighteen variables have been found as .936. Hence, the value of .936 against 120 items has been highly acceptable in social science and final data have been collected. Furthermore, Confirmatory Factor Analysis (CFA) was conducted to test construct validity and confirm the appropriateness of the measurement model and questionnaire statements. The statistical procedures helped establish the validity and reliability of the instrument, thereby ensuring accurate interpretation of findings and drawing meaningful conclusions from the collected data.

Table 1

Reliability Test (n=25)

Sr. No.	Variable	Code	Items	Alpha Value
i	Integration of Students Cultural Knowledge	IOSC	8	.736
ii	Dialogic Learning Practices	DILP1	8	.724
iii	Bridging Theory and Real-World Contexts	BTAR	8	.797
iv	Learning Agency and Empowerment	LAAE	8	.785

v	Collaborative Knowledge Construction	COKC	8	.743
vi	Third Space Pedagogy (i+ii+iii+iv+v)	THSP	40	.842
vii	Use of Digital Learning Platforms	UDLP	8	.798
vii	Digital Collaboration Tools	DICT	8	.765
ix	Multimodal Context Delivery	MUCD	8	.745
x	Technology-Mediated Interaction	TEMI	8	.728
xi	Digital Assessment and Feedback	DAAF	8	.733
xii	Digital Learning Practices (vii+viii+ix+x+xi)	DILP2	40	.827
xiii	Academic Achievement	ACAC	8	.719
xiv	Conceptual Understanding	COUN	8	.760
xv	Critical Thinking Skills	CRTS	8	.738
xvi	Application of Knowledge	APOK	8	.744
xvii	Skill Development	SKDE	8	.757
xviii	Learning Outcomes (xiii+xiv+xv+xvi+xvii)	LEOU	40	.819
Overall			120	.936

Results and Discussion

Table 2

CFA of Integration of Students Cultural Knowledge (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You understand your beliefs in your life	0.216	0.056	3.866	0.000
ii	You have strong family values	0.233	0.049	4.709	0.000
iii	You practice enacted norms of the community	0.281	0.060	4.670	0.000
iv	You have importance of your family traditions	0.368	0.060	6.103	0.000
v	You have respectful interaction with neighbor	0.404	0.060	6.708	0.000
vi	You are active community member	0.366	0.062	5.865	0.000
vii	You have social etiquette to perform the tasks	0.312	0.061	5.076	0.000
viii	You easily integrate cultural context	0.252	0.062	4.097	0.000

Table 2 revealed CFA of integration of students' cultural knowledge. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable integration of students' cultural knowledge. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 3

CFA of Dialogic Learning Practices (n=198)

Sr. No.	Statements	SA	A	D	SD
i	Your interaction has purpose of life	0.398	0.057	6.981	0.000
ii	You construct knowledge with dialogue	0.366	0.055	6.652	0.000
iii	You are encouraged by reasons from others	0.227	0.060	3.779	0.000
iv	You have valuable arguments in front of others	0.426	0.058	7.309	0.000
v	You connect ideas after receiving information	0.364	0.056	6.552	0.000
vi	You asked open ended questions in class	0.491	0.059	8.324	0.000

vii	You participate in student-lead discussion	0.572	0.057	9.974	0.000
viii	You participate in collaborate inquiry in class	0.518	0.060	8.581	0.000

Table 3 revealed CFA of dialogic learning practices. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable dialogic learning practices. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 4

CFA of Bridging Theory and Real World Contexts (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You manage complex social issues in your life	0.437	0.060	7.329	0.000
ii	You reshape the meaning of different cultural codes	0.371	0.052	7.149	0.000
iii	You challenge the arguments	0.467	0.058	8.104	0.000
iv	You easily explain the gaps in front of others	0.474	0.059	8.017	0.000
v	You explain social phenomenon easily	0.480	0.052	9.184	0.000
vi	You operationalize concepts easily	0.414	0.053	7.805	0.000
vii	You understand social settings of life	0.319	0.061	5.263	0.000
viii	You have practical situations to work hard	0.277	0.058	4.792	0.000

Table 4 revealed CFA of bridging theory and real word contexts. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable bridging theory and real word contexts. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 5

CFA of Learning Agency and Empowerment (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You are engaged with learning agency	0.412	0.059	6.966	0.000
ii	You have capacity to take ownership	0.268	0.051	5.207	0.000
iii	You have clear learning goals	0.397	0.055	7.260	0.000
iv	You easily make choices in your life	0.360	0.055	6.497	0.000
v	You have only focus on your study progress	0.505	0.056	9.000	0.000
vi	You have strong self-efficacy during study	0.543	0.056	9.750	0.000
vii	You critically analyze the phenomenon	0.422	0.055	7.628	0.000
viii	You are energetic to achieve educational goals	0.489	0.057	8.534	0.000

Table 5 revealed CFA of learning agency and empowerment. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable learning agency and empowerment. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 6
CFA of Collaborative Knowledge Construction (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You share your perspective to others	0.398	0.057	7.028	0.000
ii	You create new understanding regarding phenomenon	0.362	0.052	6.929	0.000
iii	You acquire individualistic knowledge	0.447	0.058	7.645	0.000
iv	You explore new things in normal routine life	0.448	0.056	8.076	0.000
v	You negotiate with others in the issues	0.552	0.055	9.987	0.000
vi	You have strong visual thinking regarding learning	0.483	0.051	9.480	0.000
vii	You engaged yourself in deep discussion	0.543	0.056	9.660	0.000
viii	You work on joining constructive knowledge	0.470	0.054	8.694	0.000

Table 7 revealed CFA of collaborative knowledge construction. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable collaborative knowledge construction. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 8
CFA of Use of Digital Learning Platforms (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You are engaged in online learning environment	0.440	0.064	6.849	0.000
ii	You have your own learning spaces	0.325	0.051	6.355	0.000
iii	You are using library digital resources	0.466	0.061	7.587	0.000
iv	You have joint chat group for discussion	0.497	0.058	8.520	0.000
v	You are using online digital learning resources	0.491	0.060	8.198	0.000
vi	You are linked with digital technology	0.318	0.050	6.300	0.000
vii	You choose digital tool to learn	0.425	0.058	7.279	0.000
viii	You have technological access	0.295	0.058	5.098	0.000

Table 8 revealed CFA of use of digital learning platforms. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable use of digital learning platforms. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 9
CFA of Digital Collaboration Tools (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You attend shared video with other	0.487	0.055	8.923	0.000
ii	You have shared study files with your class fellows	0.465	0.050	9.220	0.000
iii	You use different digital tools	0.460	0.052	8.876	0.000
iv	You use internet to share information	0.400	0.054	7.378	0.000
v	You attend video conference for study purpose	0.352	0.053	6.612	0.000
vi	You use internet for study purpose	0.430	0.054	8.027	0.000
vii	You are active member of digital tools	0.492	0.050	9.825	0.000
viii	You have subject collaboration in digital form	0.385	0.051	7.599	0.000

Table 9 revealed CFA of digital collaboration tools. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable digital collaboration tools. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 10
CFA of Multimodal Context Delivery (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You understand gestures of others	0.487	0.056	8.701	0.000
ii	You receive message through audio records	0.483	0.049	9.819	0.000
iii	You easily understand meanings of visuals	0.621	0.054	11.513	0.000
iv	You understand the meaning of life	0.517	0.054	9.527	0.000
v	You critically analyze the music types	0.453	0.063	7.209	0.000
vi	You understand body language of others	0.536	0.059	9.077	0.000
vii	You grasp the expressions of others in daily life	0.245	0.055	4.456	0.000
viii	You easily understand the spoken words by others	0.295	0.049	6.014	0.000

Table 10 revealed CFA of multimodal context delivery. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable multimodal context delivery. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 11
CFA of Technology-Mediated Interaction (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You collaborate technology for academic purpose	0.312	0.055	5.721	0.000
ii	You are socially exchanged through digital tool	0.425	0.057	7.475	0.000
iii	You are part of virtual reality among your peers	0.424	0.057	7.382	0.000

iv	You understand meaning of emoji	0.335	0.055	6.108	0.000
v	You learn through online discussion	0.470	0.052	9.013	0.000
vi	You use online discussion platforms	0.505	0.052	9.751	0.000
vii	You are involved in online group project	0.530	0.058	9.200	0.000
viii	You learn through social media activities	0.496	0.057	8.756	0.000

Table 11 revealed CFA of technology-mediated interaction. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable technology-mediated interaction. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 12
CFA of Digital Assessment and Feedback (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You give online quizzes in your classes	0.355	0.053	6.643	0.000
ii	You improve through digital feedback	0.461	0.052	8.885	0.000
iii	You use peer review tools for study	0.448	0.054	8.225	0.000
iv	You use AI assessment tools for academic purpose	0.429	0.057	7.513	0.000
v	You learn through electronic feedback	0.448	0.055	8.097	0.000
vi	You are engaged among online meetings	0.535	0.054	9.887	0.000
vii	You easily manage online academic deadlines	0.529	0.054	9.763	0.000
viii	You learn through feedback positively	0.411	0.052	7.980	0.000

Table 12 revealed CFA of digital assessment feedback. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable digital assessment feedback. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 13
CFA of Academic Achievement (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You have a good CGPA in your class	0.375	0.060	6.245	0.000
ii	You have strong communication skill	0.471	0.054	8.775	0.000
iii	You complete for sessional marks	0.457	0.053	8.704	0.000
iv	You actively participate in class discussion	0.417	0.055	7.627	0.000
v	You are learning new skills during your study	0.514	0.053	9.704	0.000
vi	You achieve your target academic goals	0.422	0.048	8.883	0.000
vii	Your writing skill have been improved in class	0.484	0.059	8.145	0.000
viii	You intended learning has been improved	0.392	0.055	7.145	0.000

Table 13 revealed CFA of academic achievement. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable academic achievement. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 14
CFA of Conceptual Understanding (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You grasp the lecture well on time in class	0.491	0.058	8.511	0.000
ii	You are conceptually clear regarding concept	0.538	0.055	9.761	0.000
iii	You have conceptual clarity of the subject	0.574	0.052	10.948	0.000
iv	You are familiar with the terminology of the subject	0.511	0.052	9.806	0.000
v	You clearly understand the job market of your subject	0.486	0.053	9.102	0.000
vi	You easily connect ideas in your life	0.518	0.047	10.966	0.000
vii	You have ability to transfer knowledge	0.446	0.053	8.374	0.000
viii	You easily manage misconceptions made by others	0.463	0.059	7.906	0.000

Table 14 revealed CFA of conceptual understanding. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable conceptual understanding. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 15
CFA of Critical Thinking Skills (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You evaluate the phenomenon easily	0.442	0.058	7.576	0.000
ii	You make objective analysis of the subjects	0.476	0.049	9.761	0.000
iii	You are keen observer of the social phenomenon	0.381	0.050	7.553	0.000
iv	You make influence during communication	0.417	0.060	6.952	0.000
v	You easily make informal decision with your peers	0.292	0.055	5.301	0.000
vi	You handle family problems through technology	0.282	0.056	5.073	0.000
vii	You asked questions in classroom for clarity	0.519	0.053	9.715	0.000
viii	You participate in giving counter argument	0.503	0.055	9.221	0.000

Table 15 revealed CFA of critical thinking skills. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against

the variable critical thinking skills. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 16
CFA of Application of Knowledge (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You practically apply knowledge in your life	0.363	0.054	6.776	0.000
ii	You use knowledge to solve family problem	0.375	0.048	7.831	0.000
iii	You try to manage your personal family problem	0.400	0.052	7.690	0.000
iv	You think analytically to solve the problem	0.514	0.055	9.324	0.000
v	You apply knowledge in your real world	0.422	0.058	7.307	0.000
vi	You make decision quickly to proceed	0.462	0.055	8.411	0.000
vii	You create value among family member	0.442	0.056	7.959	0.000
viii	You actively utilize your skill in your life	0.445	0.054	8.161	0.000

Table 16 revealed CFA of application of knowledge. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable application of knowledge. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Table 17
CFA of Skill Development (n=198)

Sr. No.	Statements	SA	A	D	SD
i	You effectively perform the task	0.364	0.052	6.942	0.000
ii	You are able to complete the work	0.360	0.047	7.712	0.000
iii	You easily refine the idea academically	0.331	0.049	6.722	0.000
iv	You easily grow with your responsibilities	0.546	0.052	10.462	0.000
v	You have ability to demonstrate in front of class	0.587	0.053	11.060	0.000
vi	You are intellectual able to work hard	0.498	0.050	9.948	0.000
vii	You have strong communication skills	0.526	0.052	10.138	0.000
viii	You used cognitive power to handle problems	0.519	0.056	9.273	0.000

Table 17 revealed CFA of skill development. The variable had been consisted eight different items. These items have been extracted from the existing body of literature. It is important to mention here that CFA confirmed the eight items against the variable skill development. Therefore, all the eight statements refer to the above mentioned variable has been used for further statistical analysis including multivariate.

Conclusion

The study concluded that the developed scale demonstrated strong reliability and validity for measuring third space pedagogy, digital learning practices, and learning outcomes among female students in Pakistani higher education institutions. The reliability analysis confirmed a high level of internal consistency among the constructs, as the overall Cronbach’s Alpha value remained highly satisfactory.

Similarly, all subscales showed acceptable reliability coefficients, indicating that the instrument consistently measured the intended concepts. Furthermore, Confirmatory Factor Analysis (CFA) validated the dimensional structure of the scale by confirming the relevance and significance of all statements under their respective constructs. The findings revealed that each item significantly contributed to its corresponding variable, including integration of students' cultural knowledge, dialogic learning practices, collaborative knowledge construction, digital learning practices, academic achievement, conceptual understanding, critical thinking skills, application of knowledge, and skill development. The scale development process established a comprehensive and statistically validated instrument that effectively used in future sociological and educational research. The study also highlighted the importance of integrating pedagogical and digital learning dimensions to understand students' educational experiences and learning outcomes in higher education settings.

References

- Ahmed, R., Shoaib, M., Iqbal, S., & Abdullah, F. (2026). Constructing a Sociological Scale for Gender, STEM, and Social Norms: Assessing Feminization and Resistance. *Journal for Current Sign*, 4(1), 157–180.
- Ahmed, R., Shoaib, M., Iqbal, T., & Abdullah, F. (2026a). Barriers to Female Participation in STEM: A Sociological Study of Cultural and Structural Resistance. *GUMAN*, 8(4), 380–393.
- Ahmed, R., Shoaib, M., Iqbal, T., & Abdullah, F. (2026b). Negotiating Femininity in STEM Higher Education: Patterns of Career, Individual, and Family Orientations. *Annual Methodological Archive Research Review*, 4(1), 68-84.
- Ali, R., Abdullah, F., & Shaoib, M. (2026). Gender, Artificial Intelligence, and Academic Inequality in Higher Education in Pakistan. *Journal of Management & Social Science*, 3(1), 151-171.
- Ali, R., Abdullah, F., & Shoaib, M. (2026a). Feminist Standpoint Theory and Gendered Experiences in Educational Spaces. *Dialogue Social Science Review (DSSR)*, 4(3), 100–118.
- Ali, R., Abdullah, F., & Shoaib, M. (2026b). Sociology of Digital Control: Datafication, Online Surveillance, and Gendered Norms in Everyday Life in Higher Education in Pakistan. *Journal of Management Science Research Review*, 5(1), 246–265.
- Ali, R., Shoaib, M., Shamraiz, S., & Abdullah, F. (2026). Gendered Cultural Capital Shaping Academic Success among Students at Higher Educational Institutions. *Annual Methodological Archive Research Review*, 4(3), 510-530.
- Ali, Z. (2021). Becoming an English Teacher in Postcolonial Pakistan and Australian Classrooms: Negotiating Difference in Postcolonial Settings. *Changing English*, 28(1), 45-57. doi:10.1080/1358684X.2020.1815521
- Anlimachie, M. A., Badu, S., & Acheampong, D. Y. (2022). Enacting aspirational rural schooling towards sustainable futures: exploring students' ethnographic imaginations implications for place-based pedagogy. *Rural Society*, 31(3), 155-178. doi:10.1080/10371656.2023.2171842

- Ayub, U., Yazdani, N., & Kanwal, F. (2022). Students' learning behaviours and their perception about quality of learning experience: the mediating role of psychological safety. *Asia Pacific Journal of Education*, 42(3), 398-414. doi:10.1080/02188791.2020.1848797
- Choo, S. S. (2021). EXPANDING THE IMAGINATION: MEDIATING THE AESTHETIC-POLITICAL DIVIDE THROUGH THE THIRD SPACE OF ETHICS IN LITERATURE EDUCATION. *British Journal of Educational Studies*, 69(1), 65-82. doi:10.1080/00071005.2020.1735298
- Grebener, B.-L., Barth, J., Anders, S., Beißbarth, T., & Raupach, T. (2021). A prediction-based method to estimate student learning outcome: Impact of response rate and gender differences on evaluation results. *Medical Teacher*, 43(5), 524-530. doi:10.1080/0142159X.2020.1867714
- Guerin, C. (2021). Researcher developers traversing the borderlands: credibility and pedagogy in the third space. *Teaching in Higher Education*, 26(3), 518-524. doi:10.1080/13562517.2021.1894551
- Hover, A., & Wise, T. (2022). Exploring ways to create 21st century digital learning experiences. *Education* 3-13, 50(1), 40-53. doi:10.1080/03004279.2020.1826993
- Jao, C.-Y., Chen, C.-H., & Yeh, H.-C. (2024). Exploring the effects of cross-cultural collaborating on bilingual digital storytelling on students' intercultural learning. *Interactive Learning Environments*, 32(10), 6815-6832. doi:10.1080/10494820.2023.2286386
- Junaid, F. A., Haar, J., & Brougham, D. (2021). Post-Traumatic Stress, Job Stressors, Psychological Capital and Job Outcomes: A Study of Pakistan Employees living under ongoing terrorism. *Labour and Industry*, 31(2), 106-128. doi:10.1080/10301763.2020.1854609
- Larijani, M., Shoaib, M., & Abedi, M. (2026). Technology-based Education for Students with Disability: A Bibliometric Analysis. *Interdisciplinary Journal of Management Studies*, 19(2), 247-266.
- Leonard, A. E., Burns, A., Hamilton, E. R., Taylor, L., & Tanck, H. (2024). Place as Teacher: Community-Based Experiences, Third Spaces, & Teacher Education. *Studying Teacher Education*, 20(2), 214-235. doi:10.1080/17425964.2023.2250822
- Lin, V., Liu, G.-Z., Hwang, G.-J., Chen, N.-S., & Yin, C. (2022). Outcomes-based appropriation of context-aware ubiquitous technology across educational levels. *Interactive Learning Environments*, 30(8), 1515-1538. doi:10.1080/10494820.2019.1703012
- Luk, L. Y. Y., & Chan, C. K. Y. (2022). Students' learning outcomes from engineering internship: a provisional framework. *Studies in Continuing Education*, 44(3), 526-545. doi:10.1080/0158037X.2021.1917536
- Lyu, J., Shepherd, D., & Lee, K. (2024). The impact of entrepreneurship pedagogy on nascent student entrepreneurship: an entrepreneurial process perspective. *Studies in Higher Education*, 49(1), 62-83. doi:10.1080/03075079.2023.2220722

- Mansoor, A., & Malik, S. (2022). Decolonial-posthuman pedagogy and conceptualising 'womanness' in postcolonial Pakistan. *Compare: A Journal of Comparative and International Education*, 52(3), 440-456. doi:10.1080/03057925.2020.1835463
- Mathrani, A., Sarvesh, T., & Umer, R. (2022). Digital divide framework: online learning in developing countries during the COVID-19 lockdown. *Globalisation, Societies and Education*, 20(5), 625-640. doi:10.1080/14767724.2021.1981253
- Nalaila, S., Wawire, V., & Gathara, P. M. (2022). Classroom support for students' digital literacy skills for learning in Tanzania's public universities. *Development in Practice*, 32(7), 867-878. doi:10.1080/09614524.2022.2104219
- Przymus, S. D., Lengeling, M. M., Mora-Pablo, I., & Serna-Gutiérrez, O. (2022). From DACA to Dark Souls: MMORPGs as Sanctuary, Sites of Language/Identity Development, and Third-Space Translanguaging Pedagogy for Los Otros Dreamers. *Journal of Language, Identity & Education*, 21(4), 248-264. doi:10.1080/15348458.2020.1791711
- Sarfraz, J., Kausar, N., Shoaib, M., & Abdullah, F. (2026). Psychological Well-being and Willingness to Participate among Female Students in Tertiary Education: A Sociological Analysis. *Pakistan Journal of Social Science Review*, 5(3), 1250-1267.
- Sarfraz, J., Sheraz, M., Shoaib, M., & Abdullah, F. (2026). Gendered Slang as a Socio-Linguistic Practice: Empirical Insights into Its Psychological and Social Impacts on Female Students. *Journal of Management & Social Science*, 3(1), 1722-1740.
- Sarfraz, J., Shoaib, M., & Kausar, N. (2026). Discursive Practices and Gender Inequality: The Psychological and Social Effects of Gendered Slang on Female Students. *Dialogue Social Science Review (DSSR)*, 4(1), 475-492.
- Sarfraz, J., Shoaib, M., Kausar, N., & Abdullah, F. (2026). A Sociolinguistic Analysis of Gendered Slang: Types, Frequency, and Context of Use among Tertiary-Level Female Students. *Journal of Management & Social Science*, 3(1), 1672-1690.
- Sarfraz, J., Shoaib, M., & Sheraz, M. (2026a). Gendered Slang as a Socio-Linguistic Tool: Scale Development for Assessing Psychological and Social Impacts on Female Students in Higher Education. *Journal for Current Sign*, 4(1), 2047-2069.
- Sarfraz, J., Shoaib, M., & Sheraz, M. (2026b). Gendered Slang, Context of Use, and Psychological Responses: An Analysis of Social Interaction among Female Students at Tertiary Level. *Pakistan Journal of Social Science Review*, 5(1), 1157-1176.
- Scully, D., Lehane, P., & Scully, C. (2021). 'It is no longer scary': digital learning before and during the Covid-19 pandemic in Irish secondary schools. *Technology, Pedagogy and Education*, 30(1), 159-181. doi:10.1080/1475939X.2020.1854844

- Shahzadi, S., Shoaib, M., & Abdullah, F. (2026). Gender, Socialization, and Learning Outcomes: A Conceptual Sociological Framework for Understanding Educational Achievement. *Journal for Current Sign*, 4(1), 561–579.
- Shahzadi, S., Shoaib, M., Baneen, U., & Abdullah, F. (2026). From Emotion to Innovation: A Sociological Study of Emotional Intelligence and Creative Capacity among Students in Pakistani Higher Education. *Annual Methodological Archive Research Review*, 4(1), 458-476.
- Shahzadi, S., Shoaib, M., Iqbal, S., & Abdullah, F. (2026). Learning Achievement in the Age of Intersectionality: Developing a Sociological Measurement Scale for Tertiary Education in Pakistan. *Journal of Media Horizons*, 7(2), 1-18.
- Shamraiz, S., Shoaib, M., Baneen, U., & Shahzadi, S. (2026a). Constructing Gender, Negotiating Achievement: A Qualitative Sociological Inquiry into Learning Pathways in Educational Settings. *International Journal of Social Sciences Bulletin*, 4(2), 137-153.
- Shamraiz, S., Shoaib, M., baneen, U., & Shahzadi, S. (2026b). Understanding Learning through Gendered Lenses: A Qualitative Sociological Study of Educational Experiences and Achievement. *Dialogue Social Science Review (DSSR)*, 4(2), 1-17.
- Shoaib, M. (2021). *Sociological Analysis of Teachers Perspectives on Students Academic Performance in Higher Education in the Punjab*. (PhD Thesis). International Islamic University Islamabad, Central Library.
- Shoaib, M. (2023a, September 22). Galvanising Bourdieu's typology with Pakistani education and social class. *The Nation*, p. 4.
- Shoaib, M. (2023b, December 05). Gender Differences in Academic Performance. *The Nation*.
- Shoaib, M. (2023c). Leisure and Psychological Well-being of the Elderly: Nexus of Mass Media and Modern Technology. *Pakistan Journal of Law, Analysis and Wisdom*, 2(2), 1042–1053.
- Shoaib, M. (2024a, January 09). Gender Disparity in Education. *The Nation*.
- Shoaib, M. (2024b). Gender Diversity and Inclusion in Higher Education in Pakistan. *Pakistan Journal of Law, Analysis and Wisdom*, 3(1), 207-222.
- Shoaib, M. (2024c, April 30). Gendered Space in Higher Education. *Daily Parliament Times*, p. 3.
- Shoaib, M. (2024d). Gendering Bourdieu's Cultural Capital in Higher Education in Pakistan. *Pakistan Journal of Law, Analysis and Wisdom*, 3(2), 265-278.
- Shoaib, M. (2024e). Tailoring Theoretical Lens and Nudging Bourdieu's Cultural Capital on Gender and Academic Performance. *Journal of Social Sciences Review*, 4(4), 87–101.
- Shoaib, M. (2025a). Academic Achievement and Gender Inequality in Higher Education: A Systematic Review of Muslim Majority Nations. *Sociology & Cultural Research Review* 3(02), 373–380.
- Shoaib, M. (2025b). A Systematic Review of Gender Disparities in Academic Achievement in Higher Education Across Muslim Countries. *Advance Social Science Archive Journal*, 3(02), 1622–1639.

- Shoaib, M., Abbas, A., Ali, M., & Abdullah, F. (2026). Gender Socialization Influencing Classroom Interactions Among Students in Contemporary Schooling Environments. *International Journal of Social Sciences Bulletin*, 4(3), 360-377.
- Shoaib, M., Abbas, A., Shamraiz, S., & Abdullah, F. (2026). The Sociology of Gender and Academic Outcomes in Pakistani University Spaces. *Journal of Media Horizons*, 7(3), 296-314.
- Shoaib, M., & Abdullah, F. (2025). Artificial Intelligence in Education: A Sociological Analysis of Gender Inequalities in Technology-Mediated Learning Environments. *Al-Anfal*, 3(4), 85-115.
- Shoaib, M., Abdullah, F., & Ali, R. (2026). Feminist Sociological Perspectives on Gender Inequality and Knowledge Production in Education. *Journal for Current Sign*, 4(1), 1232-1252.
- Shoaib, M., Abdullah, F., & Baneen, U. (2026a). Digital Learning and Gendered Capital: Reconfiguring Educational Advantage in the Knowledge Society. *GUMAN*, 9(1), 266-281.
- Shoaib, M., Abdullah, F., & Baneen, U. (2026b). Gendered Expectations of Teachers and the Social Production of Academic Self-Concept. *Journal for Current Sign*, 4(1), 1063-1081.
- Shoaib, M., Abdullah, F., & Baneen, U. (2026c). Institutional Patriarchy and Pedagogical Practices: Gendered Power Relations in Contemporary Schooling. *Pakistan Journal of Social Science Review*, 5(2), 608-625.
- Shoaib, M., Ahmed, R., Iqbal, S., & Abdullah, F. (2026a). From Resistance to Recognition: Sociological Insights on Job-Oriented and Historical Dimensions of Feminization in STEM Higher Education. *Research Consortium Archive*, 4(1), 272-287.
- Shoaib, M., Ahmed, R., Iqbal, S., & Abdullah, F. (2026b). Negotiating Gender and STEM: A Sociological Study of Individual, Familial, and Peer Acceptability in Higher Education. *Pakistan Journal of Social Sciences Review*, 5(1), 266-284.
- Shoaib, M., Ahmed, R., Iqbal, S., & Abdullah, F. (2026c). Reconfiguring Gender in STEM Higher Education: Expression, Sensitivity, and the Politics of Support and Cooperation. *Journal of Management & Social Science*, 3(1), 117-134.
- Shoaib, M., Ali, R., Ditta, A., & Abdullah, F. (2026). Sociology of Knowledge Perspectives on Gendered Curriculum and Educational Authority. *Dialogue Social Science Review (DSSR)*, 4(3), 119-137.
- Shoaib, M., Ali, R., Hassan, M., & Abdullah, F. (2026). Structural Functionalism and Gendered Role Socialization in Educational Institutions. *Dialogue Social Science Review (DSSR)*, 4(3), 81-99.
- Shoaib, M., Iqbal, A., Iqbal, S., & Abdullah, F. (2026a). Intersecting Inequalities Through a Sociological Lens: Symbolic Boundaries in the Construction of Gendered Academic Identities in Pakistan. *International Journal of Social Sciences Bulletin*, 4(2), 9-23.

- Shoaib, M., Iqbal, A., Iqbal, S., & Abdullah, F. (2026b). Symbolic Boundaries and Gendered Academic Identities at Higher Educational Institutions in Pakistan. *Dialogue Social Science Review (DSSR)*, 4(125–142).
- Shoaib, M., Iqbal, S., Baneen, U., & Abdullah, F. (2026a). From Access to Agency: Gendered Educational Trajectories in the Era of Neoliberal Reform. *Research Consortium Archive*, 4(1), 928-945.
- Shoaib, M., Iqbal, S., Baneen, U., & Abdullah, F. (2026b). Intersectional Classrooms: Gender, Social Stratification, and the Reproduction of Educational Inequality. *Annual Methodological Archive Research Review*, 4(2), 385-403.
- Shoaib, M., Iqbal, S., Baneen, U., & Abdullah, F. (2026c). Symbolic Violence and Gendered Aspirations: A Bourdieusian Study of Educational Choice and Achievement. *Dialogue Social Science Review (DSSR)*, 4(2), 849–866.
- Shoaib, M., Kausar, N., Sarfraz, J., & Abdullah, F. (2026a). Everyday Language and Gendered Experience: A Sociological Analysis of Gendered Slang among Female Students. *Dialogue Social Science Review (DSSR)*, 4(3), 449–467.
- Shoaib, M., Kausar, N., Sarfraz, J., & Abdullah, F. (2026b). Gendered Slang and Social Inequality: A Sociological Study of Psychological and Social Impacts on Female Students in Higher Education. *Research Consortium Archive*, 4(1), 1386-1404.
- Shoaib, M., Kausar, N., Sarfraz, J., & Abdullah, F. (2026c). A Sociological Study of Interaction Avoidance and Response Behavior among Female Students in Higher Education. *Journal of Management & Social Science*, 3(1), 1691-1707.
- Shoaib, M., Noor, A., Iqbal, T., & Abdullah, F. (2026). Intersectionality Reinforcing Gender Inequality Across Higher Education Institutions in Contemporary Societies. *Annual Methodological Archive Research Review*, 4(3), 531-550.
- Shoaib, M., Noor, A., Mir, B. A., & Abdullah, F. (2026). Patriarchy Shaping Gendered Power Relations within Educational Institutions and Academic Knowledge Production. *Annual Methodological Archive Research Review*, 4(3), 551-571.
- Shoaib, M., Sarfraz, J., & Kausar, N. (2026a). Gendered Slang and Psychosocial Consequences: A Study of Female Students in Higher Education. *Research Consortium Archive*, 4(1), 1360-1373.
- Shoaib, M., Sarfraz, J., & Kausar, N. (2026b). Gendered Slang as a Sociolinguistic Practice and Social Interaction Dynamics: An Analysis of Gender Bias among Female Students in Higher Education. *Annual Methodological Archive Research Review*, 4(1), 545-564.
- Shoaib, M., Sarfraz, J., Kausar, N., & Abdullah, F. (2026a). Intent Perception, Level of Explicitness, and Perspective of Respect among Female Students in Pakistani Higher Education Institutions. *Pakistan Journal of Social Science Review*, 5(2), 805–824.
- Shoaib, M., Sarfraz, J., Kausar, N., & Abdullah, F. (2026b). Understanding the Interplay of Gender Bias, Safety Perceptions, and Psychological Responses among Female Students in Higher Education. *Dialogue Social Science Review (DSSR)*, 3(2), 476–493.

- Shoaib, M., Shahzadi, S., & Abdullah, F. (2026). Gendered Trajectories of Learning: A Conceptual Sociological Analysis of Educational Achievement across Gender Constructs. *Research Consortium Archive*, 4(1), 598-614.
- Shoaib, M., Shahzadi, S., Iqbal, S., & Abdullah, F. (2026). From Cognition to Critique: A Sociological Study of Cognitive Abilities and Critical Thinking Skills of Students at University Level in Pakistan. *Pakistan Journal of Social Sciences Review*, 5(1), 871–888.
- Shoaib, M., Shahzadi, S., Shamraiz, S., & Abdullah, F. (2026a). Between Identity and Performance: A Sociological Analysis of Gender Identity, Expression, and Roles among Students at Tertiary Level in Pakistan. *Dialogue Social Science Review (DSSR)*, 4(1), 361–378.
- Shoaib, M., Shahzadi, S., Shamraiz, S., & Abdullah, F. (2026b). Communication, Conduct, and Classroom Success: A Sociological Analysis of Academic Achievement and Behavior Change among Students in Pakistani Higher Education. *Journal of Management & Social Science*, 3(1), 395-413.
- Shoaib, M., Shahzadi, S., Shamraiz, S., & Abdullah, F. (2026c). Culture, Habitus, and Society: A Multidimensional Sociological Perspective on Social Practices of Students in Higher Education in Pakistan. *Journal of Management Science Research Review*, 5(5), 474–494.
- Shoaib, M., Shamraiz, S., Abbas, A., & Abdullah, F. (2026). Digital Divide, Gender, and the Transformation of Educational Inequality in Pakistani Higher Education. *International Journal of Social Sciences Bulletin*, 4(3), 627-645.
- Shoaib, M., Shamraiz, S., Abdullah, F., & Shahzadi, S. (2026a). Gender Constructs and the Social Production of Learning Achievement: A Qualitative Study in Educational Contexts. *Journal of Media Horizons*, 7(2), 55-71.
- Shoaib, M., Shamraiz, S., Abdullah, F., & Shahzadi, S. (2026b). Reframing Learning Achievement: A Conceptual Sociological Analysis of Gender Constructs in Educational Contexts. *Annual Methodological Archive Research Review*, 4(2), 38-58.
- Shoaib, M., Shamraiz, S., Baneen, U., & Abdullah, F. (2026a). Epistemic Inequality in Schooling: Gender, Knowledge Production, and the Politics of Recognition. *Journal for Current Sign*, 4(1), 1063–1081.
- Shoaib, M., Shamraiz, S., Baneen, U., & Abdullah, F. (2026b). Hidden Curricula and Gender Regimes: A Sociological Analysis of Power, Identity, and Achievement in Educational Institutions. *Journal of Management & Social Science*, 3(1), 848-864.
- Shoaib, M., Shamraiz, S., Baneen, U., & Abdullah, F. (2026c). Negotiating Masculinities and Femininities in the Classroom: A Sociological Analysis of Gendered Pathways to Learning and Achievement. *Journal of Management & Social Science*, 3(1), 883-900.
- Shoaib, M., Shamraiz, S., Baneen, U., & Abdullah, F. (2026d). Performing Merit: Gendered Habitus and the Social Construction of Academic Excellence in Higher Education. *Pakistan Journal of Social Science Review*, 5(2), 660–677.

- Shoaib, M., Shamraiz, S., Noor, A., & Abdullah, F. (2026). Gendered Habitus Influencing Educational Mobility among Students in Stratified Social Contexts Globally. *Pakistan Journal of Social Science Review*, 5(3), 455–469.
- Shoaib, M., Srosh, S., Mobeen, M., & Abdullah, F. (2026a). Intersectional Feminist Sociological Analysis of Gender, Class, and Educational Mobility. *Pakistan Journal of Social Science Review*, 5(3), 470–490.
- Shoaib, M., Srosh, S., Mobeen, M., & Abdullah, F. (2026b). Social Reproduction Reinforcing Gendered Learning Experiences within Contemporary Education Systems Globally. *Pakistan Journal of Social Science Review*, 5(3), 491–510.
- Shoaib, M., & Ullah, H. (2026). Gender differentials in academic performance in Pakistani higher education*. *Educational Research and Evaluation*, 31(1-2), 1-21.
- Shoaib, M., Waris, T., & Iqbal, S. (2025a). Assessing Gendered Participation Spaces in Online Learning Environments in Higher Education in Pakistan. *The Knowledge*, 4(2), 63-74.
- Shoaib, M., Waris, T., & Iqbal, S. (2025b). Gender Dynamics in Online Higher Education: Insights from Empirical Evidence. *The Regional Tribune*, 4(2), 89-102.
- Shoaib, M., Waris, T., & Iqbal, S. (2025c). A Quantitative Study of Gendered Interactions and Spatial Perceptions in Online Higher Education in Pakistan. *ProScholar Insights*, 4(2), 96-108.
- Shoaib, M., Waris, T., & Iqbal, S. (2025). Virtual Learning Environments and Gendered Spaces in Higher Education in Pakistan: A Quantitative Approach. *Regional Lens*, 4(2), 65-78.
- Shoaib, M., Waris, T., Iqbal, S., & Abdullah, F. (2025). Gender, Digital Resources, and Assessment in Tertiary Virtual Classrooms: A Quantitative Study. *Research Consortium Archive*, 3(4), 2336-2349.
- Shoaib, M., Waris, T., Zaman, M. A., & Abdullah, F. (2025a). Bounded Bodies and Framed Voices: Gender Settings, Mobility Constraints, and Gender-Sensitive Language in Social Institutions. *Journal of Management Science Research Review*, 4(4), 1970–1988.
- Shoaib, M., Waris, T., Zaman, M. A., & Abdullah, F. (2025b). Negotiating Gendered Spaces in Tertiary Virtual Learning Environments: A Quantitative Study of Inclusivity and Interaction. *Annual Methodological Archive Research Review*, 3(12), 563-581.
- Shoaib, M., & Zaman, M. A. (2025). Evaluating Academic Performance in Higher Education during COVID-19 A Study of Virtual Learning Environments. *Pakistan Journal of Law, Analysis and Wisdom*, 4(4), 64-78.
- Shoaib, M., Zaman, M. A., & Abdullah, F. (2025). Gender and Health through a Feminist Lens: Sociological Insights from Pakistan. *Research Consortium Archive*, 3(4), 1075-1086.
- Tong, Z., & An, F. (2022). Empowerment through agency enhancement. *Frontiers in Psychology*, 13, 1060256.

- Waris, T., Shoaib, M., Iqbal, S., & Abdullah, F. (2025). Quantitative Scale Development on Gendered Spaces in Virtual Classrooms at the Tertiary Level. *Journal for Current Sign*, 3(4), 2307–2331.
- Waris, T., Shoaib, M., Sharif, M., & Abdullah, F. (2025a). Gender Dynamics in Virtual Classrooms: Quantitative Insights into Absolute, Conditional, and Public Spaces at the Tertiary Level. *Pakistan Journal of Social Sciences Review*, 3(7), 753–770.
- Waris, T., Shoaib, M., Sharif, M., & Abdullah, F. (2025b). Online Assessment, Web Platforms, and Gendered Learning Patterns: Quantitative Evidence from Tertiary Education. *Dialogue Social Science Review (DSSR)*, 3(12), 627–642.
- Waris, T., Shoaib, M., Sharif, M., & Abdullah, F. (2025c). Private, Inclusive, and Media Spaces in Online Higher Education: A Quantitative Study of Gendered Learning Environments. *Journal of Management & Social Science*, 2(5), 739–756.
- Willer, E. K., Krebs, E., Castaneda, N., & Samaras, A. (2021). Mad to the bone: learning outcomes of critical grief pedagogy. *Communication Education*, 70(1), 27-48. doi:10.1080/03634523.2020.1834118
- Woolf, S. B. (2020). Exploring pedagogies to elevate inquiry: teaching action research in the third space. *Educational Action Research*, 28(4), 579-596. doi:10.1080/09650792.2019.1629975
- Yu, Z., Yu, L., Xu, Q., Xu, W., & Wu, P. (2022). Effects of mobile learning technologies and social media tools on student engagement and learning outcomes of English learning. *Technology, Pedagogy and Education*, 31(3), 381-398. doi:10.1080/1475939X.2022.2045215
- Zhang, S., Wen, Y., & Liu, Q. (2022). Exploring student teachers' social knowledge construction behaviors and collective agency in an online collaborative learning environment. *Interactive Learning Environments*, 30(3), 539-551. doi:10.1080/10494820.2019.1674880
- Zhu, Q., & Wang, M. (2020). Team-based mobile learning supported by an intelligent system: case study of STEM students. *Interactive Learning Environments*, 28(5), 543-559. doi:10.1080/10494820.2019.1696838

Appendix-A

**A Sociological Scale of Third Space Pedagogy and Digital Learning Practices:
Assessing Learning Outcomes among Female Students in Higher Education in
Pakistan (Questionnaire)**

- A) Identification of the Students
- i. Semester _____
 - ii. Program _____
 - iii. Subject _____
- B) Socio-demographic Information of Students
- Q.1 Age (in completed years) _____
- Q.2 Family Occupation _____
- Q.3 Family Monthly Income (PKR) _____
- Q.4 Number of Sibling _____

Q.5 Family Size _____

Q.6 Family Type i) Nuclear ii) Joint iii) Extended

Q.7 Family Residential Area i) Rural ii) Urban

C) Third Space Pedagogy

SA=Strongly Agree to Strongly Disagree=SD

S. No.	Statements	SA	A	D	SD
C1	Integration of Students Cultural Knowledge				
i	You understand your beliefs in your life	4	3	2	1
ii	You have strong family values	4	3	2	1
iii	You practice enacted norms of the community	4	3	2	1
iv	You have importance of your family traditions	4	3	2	1
v	You have respectful interaction with neighbor	4	3	2	1
vi	You are active community member	4	3	2	1
vii	You have social etiquette to perform the tasks	4	3	2	1
viii	You easily integrate cultural context	4	3	2	1
C2	Dialogic Learning Practices				
i	Your interaction has purpose of life	4	3	2	1
ii	You construct knowledge with dialogue	4	3	2	1
iii	You are encouraged by reasons from others	4	3	2	1
iv	You have valuable arguments in front of others	4	3	2	1
v	You connect ideas after receiving information	4	3	2	1
vi	You asked open ended questions in class	4	3	2	1
vii	You participate in student-lead discussion	4	3	2	1
viii	You participate in collaborate inquiry in class	4	3	2	1
C3	Bridging Theory and Real World Contexts				
i	You manage complex social issues in your life	4	3	2	1
ii	You reshape the meaning of different cultural codes	4	3	2	1
iii	You challenge the arguments	4	3	2	1
iv	You easily explain the gaps in front of others	4	3	2	1
v	You explain social phenomenon easily	4	3	2	1
vi	You operationalize concepts easily	4	3	2	1
vii	You understand social settings of life	4	3	2	1
viii	You have practical situations to work hard	4	3	2	1
C4	Learning Agency and Empowerment				
i	You are engaged with learning agency	4	3	2	1
ii	You have capacity to take ownership	4	3	2	1
iii	You have clear learning goals	4	3	2	1
iv	You easily make choices in your life	4	3	2	1
v	You have only focus on your study progress	4	3	2	1
vi	You have strong self-efficacy during study	4	3	2	1
vii	You critically analyze the phenomenon	4	3	2	1
viii	You are energetic to achieve educational goals	4	3	2	1
C5	Collaborative Knowledge Construction				
i	You share your perspective to others	4	3	2	1
ii	You create new understanding regarding phenomenon	4	3	2	1
iii	You acquire individualistic knowledge	4	3	2	1
iv	You explore new things in normal routine life	4	3	2	1
v	You negotiate with others in the issues	4	3	2	1
vi	You have strong visual thinking regarding learning	4	3	2	1

vii	You engaged yourself in deep discussion	4	3	2	1
viii	You work on joining constructive knowledge	4	3	2	1

D) Digital Learning Practices

D1	Use of Digital Learning Platforms				
i	You are engaged in online learning environment	4	3	2	1
ii	You have your own learning spaces	4	3	2	1
iii	You are using library digital resources	4	3	2	1
iv	You have joint chat group for discussion	4	3	2	1
v	You are using online digital learning resources	4	3	2	1
vi	You are linked with digital technology	4	3	2	1
vii	You choose digital tool to learn	4	3	2	1
viii	You have technological access	4	3	2	1
D2	Digital Collaboration Tools				
i	You attend shared video with other	4	3	2	1
ii	You have shared study files with your class fellows	4	3	2	1
iii	You use different digital tools	4	3	2	1
iv	You use internet to share information	4	3	2	1
v	You attend video conference for study purpose	4	3	2	1
vi	You use internet for study purpose	4	3	2	1
vii	You are active member of digital tools	4	3	2	1
viii	You have subject collaboration in digital form	4	3	2	1
D3	Multimodal Context Delivery				
i	You understand gestures of others	4	3	2	1
ii	You receive message through audio records	4	3	2	1
iii	You easily understand meanings of visuals	4	3	2	1
iv	You understand the meaning of life	4	3	2	1
v	You critically analyze the music types	4	3	2	1
vi	You understand body language of others	4	3	2	1
vii	You grasp the expressions of others in daily life	4	3	2	1
viii	You easily understand the spoken words by others	4	3	2	1
D4	Technology-Mediated Interaction				
i	You collaborate technology for academic purpose	4	3	2	1
ii	You are socially exchanged through digital tool	4	3	2	1
iii	You are part of virtual reality among your peers	4	3	2	1
iv	You understand meaning of emoji	4	3	2	1
v	You learn through online discussion	4	3	2	1
vi	You use online discussion platforms	4	3	2	1
vii	You are involved in online group project	4	3	2	1
viii	You learn through social media activities	4	3	2	1
D5	Digital Assessment and Feedback				
i	You give online quizzes in your classes	4	3	2	1
ii	You improve through digital feedback	4	3	2	1
iii	You use peer review tools for study	4	3	2	1
iv	You use AI assessment tools for academic purpose	4	3	2	1
v	You learn through electronic feedback	4	3	2	1
vi	You are engaged among online meetings	4	3	2	1
vii	You easily manage online academic deadlines	4	3	2	1
viii	You learn through feedback positively	4	3	2	1

E) Learning Outcomes

SA=Strongly Agree to Strongly Disagree=SD

E1	Academic Achievement				
i	You have a good CGPA in your class	4	3	2	1
ii	You have strong communication skill	4	3	2	1
iii	You complete for sessional marks	4	3	2	1
iv	You actively participate in class discussion	4	3	2	1
v	You are learning new skills during your study	4	3	2	1
vi	You achieve your target academic goals	4	3	2	1
vii	Your writing skill have been improved in class	4	3	2	1
viii	You intended learning has been improved	4	3	2	1
E2	Conceptual Understanding				
i	You grasp the lecture well on time in class	4	3	2	1
ii	You are conceptually clear regarding concept	4	3	2	1
iii	You have conceptual clarity of the subject	4	3	2	1
iv	You are familiar with the terminology of the subject	4	3	2	1
v	You clearly understand the job market of your subject	4	3	2	1
vi	You easily connect ideas in your life	4	3	2	1
vii	You have ability to transfer knowledge	4	3	2	1
viii	You easily manage misconceptions made by others	4	3	2	1
E3	Critical Thinking Skills				
i	You evaluate the phenomenon easily	4	3	2	1
ii	You make objective analysis of the subjects	4	3	2	1
iii	You are keen observer of the social phenomenon	4	3	2	1
iv	You make influence during communication	4	3	2	1
v	You easily make informal decision with your peers	4	3	2	1
vi	You handle family problems through technology	4	3	2	1
vii	You asked questions in classroom for clarity	4	3	2	1
viii	You participate in giving counter argument	4	3	2	1
E4	Application of Knowledge				
i	You practically apply knowledge in your life	4	3	2	1
ii	You use knowledge to solve family problem	4	3	2	1
iii	You try to manage your personal family problem	4	3	2	1
iv	You think analytically to solve the problem	4	3	2	1
v	You apply knowledge in your real world	4	3	2	1
vi	You make decision quickly to proceed	4	3	2	1
vii	You create value among family member	4	3	2	1
viii	You actively utilize your skill in your life	4	3	2	1
E5	Skill Development				
i	You effectively perform the task	4	3	2	1
ii	You are able to complete the work	4	3	2	1
iii	You easily refine the idea academically	4	3	2	1
iv	You easily grow with your responsibilities	4	3	2	1
v	You have ability to demonstrate in front of class	4	3	2	1
vi	You are intellectual able to work hard	4	3	2	1
vii	You have strong communication skills	4	3	2	1
viii	You used cognitive power to handle problems	4	3	2	1

F) Suggestions to improve third space pedagogy of female students

G) Suggestions to improve digital learning practices of female students

h) Suggestions to improve learning outcomes of female students

Date: _____

Name (Optional):