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INVESTIGATING UNIVERSITY LEVEL STUDENTS' PREFERENCES BETWEEN TRADITIONAL AND BLENDED LEARNING APPROACHES

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ABSTRACT

This research assessed the students' attitudes toward blended learning at universities, specifically accenting delivery mode preferences, exam format preferences, and trust in the digital instructional resources. The study used a quantitative research method with descriptive survey design. A purposive sample of 450 students from public and private universities was used. The study utilized the validated instruments. It was also notable that students had highly positive inclination toward face-to-face interaction, and hands-on practice, which suggested a hybrid approach of face-to-face teaching and online instruction was preferred over the fully online style of teaching. The analysis revealed that university type and academic year influence attitudes. Concerning the exam types, students were more comfortable with traditional paper and pencil tests; but male students were more accepting of technology-based tests. The level of trust in digital instructional materials was high, although it varied by year of study. Thus, teachers should adopt a gradual approach in integration of blended learning into their classroom. There is need to support learning from diverse backgrounds. The study can help inform educational policy, course development & faculty professional growth in institutions.

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INTRODUCTION

The integration of technology in education has led to significant changes in teaching and learning practices globally, including in Pakistan. Blended learning, that combines face-to-face instruction with online learning, has gained traction in Pakistani higher education institutions in recent years, particularly accelerated by COVID-19 pandemic (Siddiqui, Khan & Ali, 2024). In the Pakistani context, several studies have explored various aspects of blended learning implementation. Khan

and Ahmed (2022) investigated the adoption and utilization of Learning Management Systems in Pakistani universities, highlighting challenges and opportunities in integrating these technologies into existing educational frameworks. Their study revealed that while there is growing interest in blended learning approaches, many institutions face the infrastructure and technical skill barriers. Mahmood and Ali (2023) conducted a multi-institutional study on quality assessment of blended courses in Pakistani universities. In this linking, their findings indicated the need for standardized quality assurance measures along with faculty development programs to ensure effective blended learning implementation.

This research underscored the importance of understanding the institutional readiness and student preparedness for the blended learning environments. The cultural context of Pakistan also plays a significant role in shaping attitudes towards blended learning. Rashid and Khan (2023) applied an extended Technology Acceptance Model (TAM) to explore how cultural dimensions influence the adoption of blended learning in Pakistani universities. Their study revealed that factors like power distance and uncertainty avoidance impact students' and faculty's acceptance of blended learning approaches. Digital divide in Pakistan presents unique challenges for blended learning execution. Soomro, Kale and Zai (2023) conducted a comparative study of blended learning readiness amid urban and rural universities in Pakistan, highlighting significant disparities in access to technology and digital literacy skills. It helps to summarize research on effectiveness, student satisfaction, and engagement in both traditional and blended learning environments. This research focused need for tailored tactics to blended learning that consider diverse technological landscapes across diverse regions of the country.

The gender dynamics in blended learning engagement have also been explored in the Pakistani context. Fatima, Ahmed and Khan (2023) conducted a multi-disciplinary study examining gender differences in blended learning engagement across Pakistani universities. Their findings revealed distinct patterns in how the male and female students interact with and perceive blended learning environments, suggesting the need for gender-sensitive design in blended learning courses. Despite these studies, there remains gap in comprehensive, large-scale quantitative research that examines students' attitudes toward blended learning, their preferences for assessment formats and their trust in digital instructional materials across different types of Pakistani universities. It helps to identify key factors, impact student preferences, like flexibility, accessibility, engagement, & technological competence. This study aims to address this gap by providing a holistic understanding of student perspectives on blended learning in Pakistani higher education context. Literature suggests areas for further research, like long-term impacts of blended learning or exploring preferences across different disciplines.

Research Objectives

1. To investigate university students' preferences between traditional classroom learning and blended learning approaches.
2. To find out difference between university students' preference about taking exams in digital and paper-and-pencil format.

Research Questions

1. What is significant difference in university students' preferences amid traditional classroom learning & blended learning approaches?
2. What is the difference between university students' preference regarding taking exams in the digital and paper-and-pencil format?

LITERATURE REVIEW

The advancement of technology has influenced learning and teaching to great extent to adopt the blended learning delivery model in higher Learning institutions. This section presents a review of literature that relates to interaction of students toward blended learning specially in environment of Pakistani universities.

Blended Learning in Higher Education

The traditional blended learning has also gone through a dramatic change in numerous years as a result of growing technological revolutions and train demands. The blended learning is a type of learning delivery that combines characteristics of traditional classroom practices with technology-enhanced learning practices and is designed intentionally in this way. Dziuban and Picciano (2021) have further developed this definition stating that blended learning is the model of education that involves use of technology in teaching and learning process to offer model that is as individual and as adaptable as required and incorporating the importance of face-to-face teaching. Ferri, Grifoni and Guzzo (2020) suggest that due to presence of pandemic and the suspension of the face-to-face mode of instruction delivery in teaching-learning, blended learning has transformed viewpoint of process that has significant focus on asynchronous process & technology-supported collaboration. As a result, educators and researchers are under pressure to look for right balance of synchronous and asynchronous learning in context of blended learning environments. Also, applying blended learning approach will help offer increased interest and activity of learners. Multimedia resources and activities disrupt online learning process and affect lack of equal allocation of skills involved (Garrison & Vaughan, 2022).

Digital VS. Paper-and-Pencil Assessments

The debate on the utilization of computer-based and paper-and-pencil tests has only emerged as an issue of debate in last decade given increasing integration of technology in education, learning, and assessment. Several benefits that have been established about the use of digital assessments in the few past years include following. Timmis, Broadfoot, Sutherland and Oldfield (2023) focused their study on the occurrence of digital assessment in the sphere of higher education and found that one of the main benefits is effectiveness of grading and feedback. They also pointed out that auto grading systems could save as much as 40% of the marking time or even more and this could enable the instructors to provide their students with timely and comprehensive feedback. When paper-based tests are to be compared with electronic-based tests, the advantages include reliability and familiarity are some of the known advantages. In this connection, it discusses that how universities can use these findings to improve their teaching strategies and learning environments. Likewise, Yilmaz and Korkmaz (2024) conducted a comparative study where students and teachers were

equally confident in the reliability and fairness of the traditional paper-based tests as compared to digital-based tests.

The recent literature establishes different studies on what students like in the area of assessment. Fernandez, García and López (2023) conducted a cross-sectional survey among 3551 students from different universities in Europe which revealed that 58% of students preferred digital assessment because of convenience and fairness. Compared between genders, students' preferences resembled each other but when distinguishing them based on the subjects, STEM students were more inclined to have a digital format compared to humanities students. Literature reviews on performance of students regarding the format of the assessment have yielded unpredictable results. Kim and Lee's other meta-analysis where 45 items of work were also on the comparison of efficiency in digital and paper and pencil type of tests. The analysis revealed that the general comparison of the formats did not demonstrate significant discrepancies. The authors acknowledged the fact that performance differences occur within different kinds of assessments; Online form was found to be advantageous in multiple-choice tests. Paper and pencil, on the other hand, were also found to be advantageous in essay-type tests.

Moreover, applying technology has significant opportunities in the practice of digital assessments given the advantages of such an approach to the process of learning. Such challenges as Martinez and Lee (2024) described some of the general technologies' disciplines, and they are the means of developing credible and dependable assessment distribution platforms, flaws in the processes of authentication and identification of learners, and challenges with the effectiveness of proctoring technology and measures. Another key message that the authors also stressed is that to effectively implement digital exams, institutions also need to invest in the establishment of strong fundamental frameworks (Dziuban & Picciano, 2021). Lastly, students' choices and academic results appear to be influenced by a variety of needs and academic, cultural, and technological experiences that they are facing in different institutions. This has become area of concern as several organizations of learning have followed trend of implementing technology-related methods of assessment and this analyses several factors for fair test and standards that may resultantly offer support in testing each student appropriately.

Digital Instruction Materials- Trust

This move has ensured that the subject of 'student trust in digital instruction materials for the higher learning institutions' emerges as a topical area of discussion in educational research platform. Some of reviews that have studied antecedents to student trust in distance education instruction material include. Chen, Wang and Zhang (2023) sought to enable large-scale survey in various universities and established that the perceived credibility of the source was the primary factor influencing the students' trust. The research also examined the notion that students would trust more if the material was from credible organizations or scholars in this field. Cross-cultural comparison of trust in digital resources in terms of cultural factors has also been looked at. In their study conducted by Mahmood and Gruba (2024) examined the difference in trust perception between students from Western and Middle Eastern universities. They also found that while there was no significant difference in the perception of students from cultures with high and low uncertainty avoidance as regard traditional

books and digital learning materials, the former preferred the tangible and traditional textbooks over the digital resources, concluding that cultural sensitivity is required to implement the digital learning resources.

Some researchers have attempted a discussion of impact of prior digital learning experiences on trust. Another quantitative research, longitudinal study was conducted by Liang and Tsai (2023) to investigate the students' trust in digital resources through three academic years. By using the Solomon four-group pretest-posttest design, they discovered that the more exposure and previous positive experiences, the higher the students' trust in and preference for digital materials: This study supports the idea that familiarity breeds trust in the digital learning environment. Hence, an area for further empirical scrutiny in context of BL in worldwide universities would entail identifying culturally appropriate and technologically suitable models that may accommodate the special needs and challenges confronting Pakistani higher education system. It provides recommendations for the educators and institutions to enhance both traditional and blended learning experiences. Also, the studies that reflect the outcome of blended learning over a long-term period and include the issues of accessibility and quality will be significant for the formulation of policies and practices in the future years.

Conceptual Framework

This conceptual framework illustrates the key components and relationships in a study of students' attitudes toward blended learning in higher education. At the centre of framework is main concept: "students' attitudes toward blended learning." The framework identifies three primary dimensions that contribute to these attitudes: preferences amid traditional and blended learning, exam format preferences & trust in digital instruction materials. First-dimension concerns students' preferences for face-to-face communication, online materials, flexibility in learning & collaborative activities. The second area explores students' attitudes towards taking a digital exam compared to a paper-based exam. The third sub-dimension explores students' acceptance about quality, attractiveness, relevance, and reliance on sources produced by experts regarding digital learning resources. These factors are presented as possible between-group differences suggesting that they are involved in evaluation of students' attitudes to blended learning system. This conceptual framework also assists research to identify the factors that will be taken into consideration in the formulation of students' attitudes towards blended learning and help in identifying the potential connection among the variables of the study.

RESEARCH METHODOLOGY

The selection of research methods for this study depends on desirability of achieving the proposed research objectives and objectives. The problem arises with actual research into university students' perceptions of blended learning, preferred assessment modalities & confidence in digital materials. The applicability of quantitative research is justified in the sense that it can effectively generate precise and generalizable data collected from sample population that is vast and diverse (Creswell & Creswell, 2018). This is in line with the current study objectives of investigating all dimensions of blended learning from student's perspective. To define target population and sampling methods,

which include the use of stratified random sampling method to increase chances of having a highly representative sample (Cochran, 1977). In the instrumentation section, three survey instruments are presented. Credibility and dependability of these instruments are then brought into understanding about present study. Measures used in data collection of data are explained to show the measures to be taken to seek approval from institutional ethical committee and the process of administering online survey to ensure that the participants are drawn from all the diverse strata as recommended by Fowler (2013).

The ethical principles involved are voluntary participation, informed consent, confidentiality of the participants, no risk involved, and respect towards persons as participants and their information are respected by covering them (World Medical Association, 2013). To improve the validity and reliability of instruments as applied to the context of study, a pilot study was done on 50 students (25 from each university). The pilot participants were required to fill out an online survey and their comments on the clarity of instructions, wording of the item, and overall completion of the survey were recorded. In response to feedback, some small changes were made to the survey to make the language more understandable. Thus, online survey was designed to include an informed consent form, demographic questions, and the three validated instruments: the PBLS developed by Zhu, Au, and Yates (2016), the MTUAS by Rosen and his colleagues (Rosen et al., 2013) and the OEAS by Alsadoon (2017). In this linking, it was searched by two researchers in the field of the educational technologies and online learning to check on its comprehensiveness, usability, and suitability for the research population.

DATA ANALYSIS

This chapter presents, interprets, and discusses data collected during the fieldwork. According to objectives of the study, data was supplied. One of the goals of the study is to find out how students feel about blended learning. ANOVA, independent t-tests, and descriptive statistics were employed in the data analysis.

RQ1: What is the Significant Difference in University Students' Preferences between Traditional Classroom Learning and Blended Learning Approaches?

Table 1 Preferences Between Traditional Learning & Blended Learning Approaches.

	Responses						
Statements	SA	A	N	D	SD	M	SD
I prefer to have face-to-face interactions with my instructor and classmates.	265	149	24	9	3	1.52	.74
I prefer to have the flexibility to study at my own pace using online materials.	131	210	60	44	5	2.07	.95
I prefer to have immediate feedback and clarification from my instructor during face-to-face sessions.	171	223	34	22	7	1.79	.72
I prefer to have access to online resources and materials to support my learning.	232	175	33	14	10	1.74	.92
I prefer to have a structured learning environment with regular face-to-face classes.	223	158	36	28	5	2.05	.99

I prefer to have the autonomy to manage my own learning using online tools and resources.	141	203	60	34	12	1.65	.75
I prefer to have the opportunity for hands-on practice and collaborative activities during face-to-face sessions.	208	207	22	7	6	2.10	.95
I prefer to have the convenience of accessing course materials and completing assignments online.	116	234	45	48	7	1.97	.92
I prefer to have the personal interaction and sense of community in a traditional classroom setting.	146	214	56	24	10	1.95	.83
I prefer to have the ability to review and revisit online materials as needed to reinforce my understanding.	130	245	44	28	3	2.05	.80
Blended learning provides me with more flexibility in my studies.	106	239	80	23	2	2.05	

The above Table 1 shows that 414 strongly agreed and agreed with the statement that they prefer to have the face-to-face interactions with their instructor and classmates. 341 strongly agreed and agreed with the statement that they prefer to have the flexibility to study at their own pace using online materials. Also, 394 strongly agreed and agreed with the statement that they prefer to have immediate feedback & clarification from their instructor during face-to-face sessions. 407 strongly agreed and agreed with statement that they prefer to have access to online resources and materials to support their learning. 381 strongly agreed and agreed with statement that they prefer to have a structured learning environment with regular face-to-face classes. 344 strongly agreed & agreed with statement that they prefer to have the autonomy to manage their own learning using online tools and resources.

Similarly, 415 strongly agreed and agreed with the statement that they prefer to have opportunity for hands-on practice & collaborative activities during face-to-face sessions. 350 strongly agreed and agreed with the statement that they prefer to have convenience of accessing course materials & completing assignments online. 360 strongly agreed and agreed with statement that they prefer to have personal interaction and sense of community in a traditional classroom setting. 375 strongly agreed and agreed with the statement that they prefer to have ability to review online materials as needed to reinforce understanding. 345 strongly agreed and agreed with statement that blended learning provides them with flexibility in their studies. Most agreed statement was that they prefer to have chance for hands-on practice & combined activities during face-to-face sessions (M=2.10, SD=0.95), followed by preference for flexibility to study at their own pace using online materials (M=2.07, SD=0.95).

Table 2 T-test for Mean Difference Based on Gender

Gender	N	M	SD	S.E M	t	df.	Sig. (2 tailed)
Male	348	19.03	5.01	.26892	0.206	448	.837
Female	102	18.91	5.61	.55630	.194	151.3125	.846

The table 2 presents the results of an independent sample t-test comparing the attitudes of male and female students towards blended learning. The sample consisted of 348 male students and 102 female students. The mean attitude score for the male students (M = 19.03, SD = 5.01) was slightly higher than that of the female students (M = 18.91, SD = 5.61). However, the t-test results (t-448) =

0.206, p = .837) indicate that this difference is not statistically significant. The equal variances not assumed results (t-151.31) = 0.194, p = .846) also confirm no significant difference. These findings suggest that gender does not significantly influence students' attitudes towards blended learning in this sample.

Table 3 T-test for Mean Difference Based on University.

University	N	M	SD	S.E M	t	df.	Sig. (2 tailed)
Private	205	17.96	5.152	.35900	-3.99	448	.000
Public	245	19.88	4.99	.31995			

The table 3 presents the results of an independent sample t-test comparing the attitudes of students towards blended learning based on their university type (private or public). The sample consisted of 205 students from the private universities and 245 students from public universities. The mean attitude score for students from public universities (M = 19.88, SD = 4.99) was higher than that of students from private universities (M = 17.96, SD = 5.152). The t-test results (t-448) = -3.99, p = .000) indicate that this difference is statistically significant. Thus. the p-value of .000 suggests that the difference in attitudes between students from the private and public university es is highly significant (p < .001).

Table 4 T-test for Mean Difference Based on Degree.

Degree	N	M	SD	S.E M	t	df.	Sig. (2 tailed)
MPhil	81	18.33	4.20	.46680	-1.295	448	.196
BS	369	19.151	5.33	.27761			

Table 4 presents the results of an independent sample t-test comparing attitudes of students toward blended learning based on their degree level (MPhil or BS). The sample included 81 MPhil students and 369 BS students. The mean attitude score for BS students (M = 19.151, SD = 5.33) was slightly higher than that of MPhil students (M = 18.33, SD = 4.20). However, the t-test results (t-448) = -1.295, p = .196) indicate that this difference is not statistically significant. These findings suggest that there is no significant difference in attitudes towards blended learning between MPhil and BS students. The degree level does not appear to significantly influence the students' attitudes towards blended learning in sample.

Table 5 ANOVA Results in Preferences Based on Academic Year

Academic Year	n	M	SD	df	F	Sig,
2nd years	83	18.33	4.20	3	3.361	.019
3rd years	169	19.74	4.91	446		
4th years	198	18.57	5.60	449		
Total	450	19.00	5.15			

Table 5 shows that a one-way ANOVA was conducted to find out difference in students' preferences between traditional classroom learning and blended learning approaches based on their academic year. Statistically significant differences were found between students' preference scores according

to their academic year (F-3, 446) = 3.361, p = .019). The results indicate that there was a significant mean difference in preferences amid traditional classroom learning & blended learning approaches based on students' academic year. Third-year students showed highest mean score (M = 19.74, SD = 4.91), followed by fourth-year students (M = 18.57, SD = 5.60), and then second-year students (M = 18.33, SD = 4.20).

Table 6 LSD Post Hoc Test Based on Academic Year

Academic Year (I)	(J) Academic year of Part:	Mean Difference (I-J)	Sig.
2nd Year	3rd year	-1.56256	.035
	4th year	-0.4276	.553
3rd Year	2nd year	1.56256	.035
	4th year	1.13495	.048
4th Year	2nd	0.4276	.553
	3rd	-1.1349	.048

Based on the LSD Post Hoc test results shown in table: There is a significant difference between 2nd year & 3rd year students (p = .035). 3rd year students show a higher preference for blended learning compared to 2nd year students (mean difference = 1.56256). There is also a significant difference between 3rd year and 4th year students (p = .048). 3rd year students show a higher partiality for blended learning compared to 4th year student (MD = 1.13495). There is no significant difference amid 2nd year and 4th year students (p = .553). These results suggest that 3rd year students have strongest preference for blended learning approaches compared to both 2nd and 4th year students.

RQ2: What is the Difference between University Students' Preference regarding Taking Exams in Digital and paper-and-Pencil Format?

Table 7 Preferences Taking Exams in Digital or Paper-and-Pencil Format

	Responses						
Statements	SA	A	N	D	SD	M	SD
I find online exams easy to attempt.	109	145	86	81	29	2.50	1.2
I find it easier to read questions on a computer screen.	84	173	86	84	23	2.53	1.1
I find it easier to read & realize questions on paper.	139	209	61	30	11	2.03	.96
Interacting with online exams does not require effort.	74	175	81	102	18	2.58	1.1
I believe I perform better on paper-and-pencil exams.	180	182	55	21	12	1.89	.96
I feel comfortable writing answers with a pen/pencil.	104	142	92	93	19	2.00	1.0
Taking online exams improves performance in course.	86	118	103	122	21	2.51	1.1
I would like to be assessed over online exams in future.	86	118	102	122	21	2.72	1.1
I have a positive intention to use online exams.	91	176	79	88	16	2.47	1.1

Table 7 presents students' preferences for taking exams in digital or paper-and-pencil format. The results show that: 348 students strongly agreed or agreed that they find it easier to read as well as comprehend questions on paper (M=2.03, SD=0.96). 362 students strongly agreed/agreed that they trust they perform better on paper-and-pencil exams (M=1.89, SD=0.96), making this most agreed

statement. In contrast, only 254 students strongly agreed or agreed that they find online exams easy to attempt (M=2.50, SD=1.2). Also, 257 students strongly agreed or agreed that they find it easier to read questions on computer screen (M=2.53, SD=1.1). 267 students strongly agreed or agreed that they have a positive intention to use online exams (M=2.47, SD=1.1), suggesting some openness to digital exam formats despite preference for paper-based exams. Findings show general preference for paper-and-pencil exams among the students, although there is some acceptance of online exam formats as well.

Table 8 T-test for Mean Difference Based on Gender

Gender	N	M	SD	S.E M	t	df.	Sig. (2 tailed)
Male	348	21.77	4.96	.26662	3.687	448	.000
Female	102	19.54	6.63	.65414			

Table 8 presents the results of independent sample t-test comparing preferences for taking exams in digital or paper-and-pencil format based on gender. The sample consisted of 348 male students and 102 female students. The mean preference score for male students ($M = 21.77$, $SD = 4.96$) was higher than that of female students ($M = 19.54$, $SD = 6.63$). The t-test results ($t(448) = 3.687$, $p = .000$) indicate that this difference is statistically significant. The p-value of .000 suggests that the difference in preferences between male and female students is highly significant ($p < .001$). These findings indicate that there is a significant difference in preferences for exam formats between male and female students. Male students show a stronger preference for digital exam formats compared to female students, who tend to prefer paper-and-pencil formats more. This gender difference in exam format preferences could have implications for exam design and administration in blended learning environments.

Table 9 T-test for Mean Difference Based on University

University	N	M	SD	S.E M	t	df.	Sig. (2 tailed)
Private	205	20.72	6.02	.42069	-1.93	448	.054
Public	245	21.71	4.92	.31452			

Table 9 presents results of an independent sample t-test comparing preferences for taking exams in digital or paper-and-pencil format based on the type of university (private or public). The sample consisted of 205 students from private universities and 245 students from public universities. The mean preference score for students from the public universities ($M = 21.71$, $SD = 4.92$) was slightly higher than that of students from the private universities ($M = 20.72$, $SD = 6.02$). The t-test results ($t(448) = -1.93$, $p = .054$) indicate that this difference is marginally significant, as p-value is very close to the conventional significance level of .05. Findings suggest that there is a trend towards a difference in preferences for exam formats between students from private and public universities, with public university students showing slightly stronger preference for digital exam formats. Still, as the result is marginally significant, this difference should be interpreted with caution. Further investigation may be needed to confirm if this difference is consistently observed in larger samples or different contexts.

Table 10 T-test for Mean Difference Based on Degree

Degree	N	M	SD	S.E M	t	df.	Sig. (2 tailed)
MPhil	81	21.13	5.03	.55964	-.234	448	.815
BS	369	21.29	5.56	.28967			

Table 10 presents results of an independent sample t-test comparing preferences for taking exams in digital or paper-and-pencil format based on degree level (MPhil or BS). The sample consisted of 81 MPhil students and 369 BS students. Mean preference score for BS students (M = 21.29, SD = 5.56) was slightly higher than that of MPhil students (M = 21.13, SD = 5.03). This difference is very small. T-test results (t-448) = -.234, p = .815) show that this difference is not statistically significant. High p-value of .815 suggests that there is no meaningful difference in exam format preferences amid MPhil and BS students.

Table 11 ANOVA Results Based on Academic Year

Academic Year	n	M	SD	df	F	Sig.
2nd years	83	21.135	5.03	3	1.854	.137
3rd years	169	21.73	5.677	446		
4th years	198	20.84	5.43	449		
Total	450	21.26	5.46			

Table 11 presents results of a one-way ANOVA comparing preferences for taking exams in digital or paper-and-pencil format based on students' academic year. The sample included students from 2nd, 3rd, and 4th years. The ANOVA results (F-3, 446) = 1.854, p = .137) indicate that there are no significant differences in exam format preferences among students of different academic years. Although there are slight variations in mean scores across academic years (2nd years: M = 21.135, SD = 5.03; 3rd years: M = 21.73, SD = 5.677; 4th years: M = 20.84, SD = 5.43), these differences are not large enough to be considered statistically significant. These findings suggest that students' preferences for the digital or paper-and-pencil exam formats do not significantly change as they progress through their academic years. In this linking. the lack of significant differences indicates that academic year is not a determining factor in shaping students' exam format preferences in this sample of study.

DISCUSSION

The analysis of the study shows that current Pakistani university students have a blended learning environment attitude that consists of contradicting elements, where students prefer live interaction during classes and paper-based exams, while they trust digital learning material. The significant preference for in-person communication is reliable with recent findings by Malik and Khan (2022), who exposed that Pakistani student place high priority on individual communication and prompt feedback when they are learning. This choice is explained by the significance of interpersonal ties in Pakistani society, which is deeply ingrained in the culture, as well as prevalence of conventional, lecture-based teaching techniques in the nation's educational system. Moreover, Zaidi et al. (2024) contend that in the Pakistan's conservative areas, in-person contacts are especially important since

they offer a formalized setting for academic participation, especially for female students. Therefore, the overall preference for the paper-and-pencil exams, especially among female students, can be discussed through different lenses. Akimov and Malin (2024) postulated that realized familiarity with the conventional testing encourages the confidence, though it discourages the adoption of the digital examinations.

Al-Bakri and Hassan (2023) demonstrated that expectations towards academic dishonesty and the perceived legitimacy of handwritten assignments affect exam modality preferences in Middle Eastern cultures, which can be transferred to the Pakistani context as well. However, the high trust in advantages related to digital learning materials is an interesting contradiction. This trust accords with a similar study carried out by Chen et al. (2023) which found that perceived credibility of source is a major determinant of trust in digital sources amongst students. Focusing on the positivity in the current study, the attitudes toward digital materials signify that the students are aware of the quality and possibility of the materials though they have course inclinations toward the conventional forms of learning. The apparent contradiction can be attributed to the idea of 'digital duality' described by Hassan and Ali (2024) where in transitioning educational systems students continue to have both, traditional as well as digital preferences for learning. In this connection, this feature enables students to embrace necessary features of digital resources like easy access and up-to-date information on what they are reading and, at the same time, embrace necessary features of traditional systems.

The fact that more senior students and students of public universities are more inclined to the blended learning approaches further buttresses this point that exposure and experience are critical determinants of attitudes. This finding supports the studies by Liang et al. (2024) that revealed the fact of continual growth in students' inclinations towards the elements of digital learning over the period of 3 years of exposure to blended learning environments. Considering gender preferences in the choice of the form of exams reveals the need for cultural relevancy when it comes to the use of technology in testing. Kumar and Singh (2023) posited that such divergence may be attributed to non-sample factors including discrepancies in the technology adoption between male and female citizens. In addition, Ota and Nishimura's research (2023) demonstrated that there are differences in test anxiety depending on the format of the test and the gender of the examinees, which indicates that psychological factors act as significant determinants of format preferences. In this linking, the acceptance of digital materials blended with the preference for the conventional learning delivery modes has its strengths and weaknesses while serving the purpose of blended learning in higher education institutions.

In their study, Nguyen and Park (2024) suggest that this trust can be used as a basis for gradually incorporating more digital aspects of learning activities while retaining traditional face-to-face elements that are valued by students & lecturers. They indorse gradual approach to implementing blended learning, which is in line with this study's recommendation. Consequently, these findings keep a pragmatic approach to blended learning in Pakistani universities. Although students show a willingness to use digital materials in learning, strong inclination towards traditional interaction

and assessment patterns points towards a gradual approach that is sensitive to the current culture. Compare the perceived effectiveness, satisfaction, and engagement levels between traditional and blended learning that are required from diverse perspectives for students' developments. This trust accords with similar study carried out by Chen et al. (2023) which found that perceived credibility of source is major determinant of trust in digital sources amongst students. Universities should focus on creating blended environment that thoughtfully integrate trusted digital resources with valued face-to-face interactions.

CONCLUSION

Overall, students are highly confident when it comes to trusting digital teaching aids despite the seeming bias toward traditional exams. These were regarded as colorful, detailed, and prepared by professionals in field of writing. This trust in digital resources is a positive sign for future of blended learning in universities of Pakistan, as it indicates that students are able and willing to effectively and positively interact with digital content when presented in effective and properly cited manner. Moreover, since there is a certain focus on traditional approaches, especially in the assessment, the cautious transition to blended learning and digital assessment approaches is relevant. This makes it easier to gradually acclimatize and gain confidence in new kinds of learning and testing. Lastly, the differences obtained between the Govt and Private University indicate that blended learning may need to be designed according to the environment, resources, and demand of either type of the university. Relatively higher preference score achieved in third year implies that more enhanced elements of blended learning could be gradually incorporated into learning as students' progress through their courses. Furthermore, the gender differences in exam format preferences highlight the need for gender-sensitive approach to assessment, possibly offering choices in the exam formats where feasible.

In addition, the high trust in digital materials underscores importance of providing high-quality, visually appealing, expert-created digital resources to support blended learning initiatives. Lastly, to build on existing trust in digital materials and address the preferences for traditional methods, inclusive training and support should be provided to both students and faculty to enhance digital literacy & comfort with blended learning approaches. This study reveals that Pakistani university students are receptive to blended learning approaches, mainly as they advance in their studies, but also value traditional educational elements. In the case of Pakistani higher education institutions, the problem area involves how institutions can appropriately blend the uses of digital technologies and online learning, and at the same time keep the positive attributes of traditional learning. In this way, universities, by paying attention to these aspects and being sensitive to needs and preferences of students, can design truly effective, both from the point of view of engagement and openness, as well as from the educational point of view, and from the perspective of readiness for the digital age, blended learning environments that contain best global approaches and traditions of traditional educational models.

Recommendations

1. Slow Adoption of a Hybrid System. To effectively undertake blended learning, universities should consider adopting a staged approach. First, combine some of the digital items into the

traditional courses before adding more elements of online ones. This approach correlates with students' high level of confidence in the given digital materials, and at the same time, appreciating their desire to interact face to face.

2. Balanced Learning Design. Use combinations of face-to-face learning to ensure students engage in collaborative and practical experiences while using technology to deliver content and learning. This balance truly serves the students' need for face-to-face time and uses the digital resources they find most reliable.
3. Hybrid Assessment Strategies. Both paper and computer-based assessments should be integrated with and used during academic year to address both summative and formative assessment. This approach tries to address issues that students might have with paper-based tests while incorporating elements of digital assessments.
4. Gender-Sensitive Approaches. Invest in the development of gender-sensitive approaches about incorporation of blended learning and digital assessment with a particular emphasis on results of differences in preferences of male/female students. This may involve making provisions for the choice of exams in cases where it is possible to do so.
5. Approaches for the Different Types of Universities. Understand that the students within a public university prefer different things from those within a private university. Implement hybrid learning approaches that apply contexts to the specific needs and resources within each category of universities.
6. Progressing Blending Across Academic Years. As the data for third-years indicate a greater preference for combined online and traditional classes, it may be beneficial to gradually add more blended components when students advance to the higher years of study.
7. Quality Assurance for Digital Materials. Establish and incorporate quality criteria for digital learning resources, so that learners can continue to have confidence in these sources.
8. Cultural Sensitivity. Make sure that approaches of the blended learning implementations are compatible with the cultural values of the society and at the same time introduce new methods of teaching and learning.

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