Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

BLENDED LEARNING AS A PEDAGOGICAL STRATEGY: EXPLORING STUDENT PERCEPTIONS AND LEARNING OUTCOMES AT THE GRADUATE LEVEL

[1]Munwar Bagum

[2]Anam Batool

[3]Muhammad Akram Malik

[1]Assistant Professor, Department of Education, University of Southern Punjab, Multan, Pakistan

[2]Ph.D. Scholar, University of Southern Punjab, Multan, Pakistan

[3]Professor, Department of Education, University of Southern Punjab, Multan, Pakistan

[1]munwarbagum@usp.edu.pk, [2]batoolanum180@gmail.com, [3]hodeducation@usp.edu.pk

Abstract

This study investigates blended learning as a pedagogical strategy by examining graduate students' perceptions of its challenges and its impact on academic achievement. The primary objectives were to explore the difficulties faced by students in blended learning environments and to assess how such instructional methods influence their learning outcomes. A quantitative research approach was employed, and data were collected through a structured questionnaire administered to a sample of 100 graduate learners from Multan. The questionnaire measured students' experiences regarding technical, academic, and social challenges, as well as the perceived effectiveness of blended learning in enhancing knowledge acquisition, critical thinking, and motivation. Data analysis was conducted using SPSS version 26, and descriptive statistics, including mean scores and standard deviations, were calculated to interpret students' responses. The findings reveal that students generally perceive blended learning positively, highlighting its contribution to improved academic performance, better understanding of course content, and enhanced independent learning skills, despite facing challenges such as technical issues, time management difficulties, and occasional social isolation. High mean scores indicate that students acknowledge the effectiveness of blended learning in promoting cognitive and motivational benefits. These results align with prior research demonstrating the advantages of blended instructional approaches in higher education. The study concludes that blended learning is a valuable pedagogical strategy for graduate-level education, and it recommends institutional interventions to address technological and instructional challenges to maximize student learning outcomes.

Keywords: Blended learning, Graduate students, Academic achievement, Student perceptions, Quantitative research, SPSS analysis, Pedagogical strategy

Article Details:

Received on 14 Nov, 2025

Accepted on 09 Dec, 2025

Published on 11 Dec 2025

Corresponding Authors*

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Introduction

Blended learning (BL), which integrates traditional face-to-face classroom methods with online learning activities, has emerged as a compelling pedagogical strategy, especially in graduate education. With the rapid technological advancements and the shift to more flexible learning delivery models prompted by global disruptions institutions have increasingly adopted BL to accommodate diverse learner needs and enhance educational outcomes (Bernard et al., 2014; Alonso et al., 2025). BL offers flexibility in terms of time, location, and pace, allowing graduate students, who often balance academic responsibilities with professional and personal commitments, to engage more effectively (Tussupbekova, 2022).

Blended learning, an instructional approach that integrates traditional face-to-face teaching with digital and online learning components, has gained significant attention in higher education over the past decade. This pedagogical strategy offers the potential to enhance student engagement, foster self-directed learning, and provide flexible access to educational resources, thereby accommodating diverse learning styles and schedules (Garrison & Vaughan, 2008). At the graduate level, where learners are often balancing academic, professional, and personal responsibilities, blended learning can serve as a transformative tool that promotes both deep learning and practical skill development. The increasing adoption of digital technologies in educational institutions has further reinforced the relevance of blended learning as a means to improve teaching effectiveness and learning outcomes in contemporary higher education contexts (Means et al., 2013).

Despite its benefits, blended learning also presents several challenges, particularly in terms of technological accessibility, learner readiness, and instructional design. Graduate students may face difficulties in managing self-paced online components alongside in-person sessions, which can affect their overall learning experience and academic achievement. Understanding students' perceptions of these challenges is crucial for designing blended learning programs that are pedagogically sound and learner-centered. Furthermore, assessing the impact of blended learning on academic performance provides empirical evidence to inform policy decisions and teaching practices. This study, therefore, aims to explore graduate students' perceptions of blended learning challenges and examine its effect on their academic achievement, offering insights for educators and institutions seeking to optimize learning outcomes through integrated instructional strategies

This study is motivated by the growing adoption of BL in higher education and the need to empirically evaluate how graduate students perceive this approach and how it affects their learning outcomes. Understanding students' perspectives on blended modalities provides insights that can inform design improvements to increase engagement, motivation, satisfaction, and academic success (Wang & Raman, 2025; Lu et al., 2018). Moreover, the continual integration of technology in pedagogical strategies requires research that bridges technology acceptance with educational theories to maximize BL effectiveness in graduate programs.

Literature Review

Empirical research demonstrates the multifaceted benefits of BL in higher education settings. Studies overwhelmingly report enhanced flexibility, enabling learner autonomy and better time management, which are particularly critical for graduate populations balancing multiple roles (Bernard et al., 2014; Tussupbekova, 2022). Furthermore, BL promotes richer interactions through online forums, collaborative projects, and synchronous sessions, improving student engagement and satisfaction (Li, 2024; Yu, 2025).

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Meta-analyses indicate blended learning's superiority or parity compared to fully face-to-face or online learning regarding academic performance, satisfaction, and retention (Bernard et al., 2009; Yu, 2025). However, challenges identified include technical issues, inconsistent quality of online resources, and demands on learners' self-regulatory skills (Maarop & Embi, 2016; Kassner, 2013). There remains a noticeable scarcity of graduate-specific studies, with most research emphasizing undergraduate or professional training contexts (Li, 2024).

Research in specialized graduate programs (e.g., educational leadership, health sciences) consistently supports BL's role in enhancing critical thinking and practical skill acquisition (Alonso et al., 2025; Wang et al., 2024). Still, student preferences lean toward face-to-face components for immediate feedback and social presence, underscoring the necessity of balanced design (Tussupbekova, 2022). Al-Fadhel et al. (2022) investigated teacher training and online learning strategies within blended learning environments in the context of the Gulf Cooperation Council (GCC) countries. Their quantitative study, supported by data review, emphasized the importance of robust digital infrastructure for the successful implementation of blended learning. The study highlighted effective blended learning strategies, the central role of teacher training, and the need for systematic professional development to ensure instructional quality. The authors also pointed toward future research directions, particularly in refining institutional policies and technological readiness for sustainable blended learning adoption.

Akyüz and Samsa (2009) explored the role of blended learning in skill development through a quantitative survey-based study conducted in Turkey. Their findings emphasized the significance of blended learning strategies supported by adequate digital infrastructure in enhancing learners' skills. The researchers concluded that blended learning environments promote active learning and learner engagement but also identified the need for future research to further examine instructional design models and long-term learning effects in blended settings. Bozkurt (2022) examined the factors and benefits of blended learning using a data-mining approach based on the Scopus database. The study identified key blended learning factors, including technological readiness, learner autonomy, and instructional design, as core contributors to learning effectiveness. The research also underscored the growing benefits of blended learning across educational levels and called for future research focusing on emerging technologies and learning analytics in blended environments.

Abdul Hussein and Najeeb (2022) proposed a blended learning model through a quantitative experimental study using surveys in Iraq. Their research focused on identifying blended learning factors that influence learner performance and engagement. The study confirmed that well-structured blended learning models significantly enhance students' academic achievement. However, the authors recommended future research to validate the model across different disciplines and institutional contexts. Luo et al. (2013) conducted a qualitative experimental study in Taiwan to examine the effects and benefits of blended learning. Their findings revealed that blended learning improves learner motivation, interaction, and academic performance when compared to traditional instruction. The researchers emphasized that blended learning promotes learner autonomy and deeper cognitive engagement. They also suggested future research to explore long-term learning outcomes and cross-cultural comparisons.

Mohsen and Shafeeq (2014) examined the role of technological infrastructure in blended learning through a mixed-methods study involving surveys and interviews in Saudi Arabia. Their findings highlighted that digital infrastructure and teacher training are foundational for the effective implementation of blended learning. The study concluded that

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

institutions with strong technological support systems and trained educators are better positioned to achieve successful blended learning outcomes, while also identifying several areas for future research related to institutional readiness.

Hadjerrouit (2008) analyzed blended learning in relation to learning theories using a quantitative case study approach in Norway. The study examined various blended learning factors through the lens of constructivist and cognitive learning theories. The findings demonstrated that blended learning environments aligned with sound theoretical frameworks promote active learning, collaboration, and knowledge construction, thereby strengthening the pedagogical value of blended instruction. Garcia-Ortega and Galan-Cubillo (2021) explored students' perceptions of blended learning through a qualitative case study and surveys in Spain. Their results showed that learners generally hold positive perceptions regarding the effects of blended learning, particularly in terms of flexibility, accessibility, and interaction. The study also identified several blended learning factors, such as instructional design and digital competence, as key predictors of learner satisfaction.

Nikolaeva et al. (2019) investigated technological infrastructure and its impact on blended learning using a quantitative survey design in Ukraine. Their findings revealed that teacher training, institutional support, and infrastructure quality significantly influence the effects of blended learning. The study also highlighted several challenges and reflective concerns, including digital divides and pedagogical adaptation issues faced by educators and students. Wang (2019) examined the factors and benefits of blended learning in China through a quantitative experimental design. The study confirmed that blended learning enhances students' academic achievement, motivation, and engagement. Key blended learning factors such as instructional quality, learner autonomy, and technology integration were found to be strong predictors of learning success.

Joji et al. (2022) studied learners' perceptions of blended learning using a mixed-method survey approach in the Kingdom of Bahrain. Their findings indicated that students generally perceive blended learning as effective and flexible. The study also explored the effects of blended learning and identified several challenges, including technological issues and the need for better instructional support, offering critical reflections for improving blended learning practices. Rahimzadeh and Gilakjani (2022) analyzed blended learning and skill development using a quantitative quasi-experimental design. Their findings demonstrated that blended learning significantly enhances learners' language and cognitive skills. The study also emphasized the importance of digital infrastructure, blended learning factors, and instructional design in maximizing learning outcomes. Additionally, the authors highlighted several areas for future research, particularly in examining blended learning across diverse educational contexts and learner populations.

Recent studies reveal a growing preference for blended learning (BL) among graduate learners because of its flexibility and the wide range of interaction opportunities it offers in both physical and virtual environments. Researchers are increasingly adopting mixed-method research designs to capture not only learners' subjective perceptions but also measurable academic outcomes in a more comprehensive manner. Alongside this, there is a progressive integration of learning analytics and artificial intelligence (AI) tools aimed at personalizing BL experiences and improving learner engagement and performance. Despite these advancements, several critical gaps remain in the existing literature. There is a limited focus on graduate students as a distinct population, particularly across diverse academic disciplines and cultural contexts. Moreover, the relationship between students' perceptions of BL and their actual learning outcomes has not been sufficiently mapped. The field also lacks

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

longitudinal studies that examine the long-term sustainability of the benefits of BL. Finally, there is minimal empirical exploration of institutional factors, such as faculty training and technological infrastructure, and how these mediate the overall effectiveness of blended learning.

Theoretical Framework

The conceptual foundation of this study is anchored in several interrelated theoretical perspectives that collectively explain learning, motivation, interaction, and technology adoption in blended learning contexts. The Community of Inquiry (CoI) Framework guides the examination of collaboration and engagement in blended environments by emphasizing the interplay of teaching presence, cognitive presence, and social presence (Garrison et al., 2000). Self-Determination Theory (SDT) explains learner motivation through the fulfillment of competence, autonomy, and relatedness, all of which can be supported more flexibly in blended learning environments than in traditional instructional modes (Alonso et al., 2025; Wang & Raman, 2025). The Interaction Equivalency Theorem, proposed by Bates (2015), posits that deep and meaningful learning can occur when at least one form of interaction—learner–teacher, learner–learner, or learner–content—is present at a high level, making it a useful lens for analyzing the diverse interaction patterns within blended learning (Tussupbekova, 2022). Finally, the Technology Acceptance Model (TAM) informs the understanding of students' acceptance and actual use of online technologies embedded in blended learning by linking perceived usefulness and ease of use with behavioral intentions (Davis, 1989; Medrano-Sánchez, 2024).

Problem Statement

Despite the increasing implementation of blended learning in graduate-level education, challenges persist in realizing its full potential. Literature highlights variability in student experiences due to factors such as technological infrastructure, course design quality, instructor proficiency, and learner self-regulation. Additionally, a significant gap exists in understanding how BL impacts graduate students' learning outcomes and how these outcomes relate to their perceptions of the pedagogical strategy. Many studies focus on undergraduate contexts, leaving graduate-level nuances under-explored. This study addresses this gap by systematically exploring graduate students' perceptions across dimensions such as flexibility, interaction, motivation, and technology-mediated support, alongside measuring learning outcomes to assess BL's efficacy. It further investigates factors that facilitate or hinder positive experiences, offering actionable recommendations for educators and institutions aiming to optimize blended modalities.

Objectives

The study's primary objectives are:

1. To explore graduate students' perceptions regarding challenges of blended learning environments.
2. To assess the impact of blended learning on graduate students' academic achievement.

Research Questions

1. How do graduate students perceive the blended learning pedagogical strategy in terms of flexibility, content delivery, and interaction?
2. How does blended learning influence graduate students' learning outcomes?

The Significance of this Study

The significance of this study lies in its potential to inform the design and implementation of effective blended learning strategies at the graduate level. By exploring students' perceptions of the challenges they face in blended learning environments, the study provides insights into

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

the factors that can hinder or enhance learning engagement, motivation, and satisfaction. Additionally, assessing the impact of blended learning on academic achievement offers empirical evidence on its effectiveness as a pedagogical approach, which can guide educators, curriculum developers, and institutional policymakers in optimizing instructional practices. Understanding both the benefits and obstacles of blended learning is particularly important in graduate education, where learners often juggle academic, professional, and personal commitments. Ultimately, the findings of this study aim to support evidence-based interventions and the development of learner-centered strategies that enhance learning outcomes, promote digital literacy, and foster a more flexible and inclusive educational environment.

Methodology

Research Approach

This research employs a mixed-methods approach, combining quantitative assessment of learning outcomes with qualitative inquiry into student perceptions. The design is explanatory sequential: quantitative data collection and analysis precede and inform qualitative exploration (Creswell & Plano Clark, 2017). This approach is suitable for uncovering both measurable effects of BL and in-depth understanding of student experiences. Validity was ensured through expert reviews by instructional designers and educational psychologists. Reliability was assessed via Cronbach's alpha for survey scales, with scores above 0.85 indicating high internal consistency.

Population and Sample

The population includes graduate students enrolled in blended learning courses within higher education institutions offering programs in education, business, and health sciences. A purposive sampling technique selects a representative sample of 100 students for surveys.

Sampling Techniques

Stratified random sampling ensures proportional representation by program and year.

Research Instrument

Questionnaire was developed based on validated measures from literature (e.g., CoI survey), capturing perceptions of interaction, flexibility, motivation, and self-reported outcomes.

Data Analysis Plan

Descriptive statistics were produced using SPSS.

Results

Table: ***Demographic Characteristics of Participants (N = 100)***

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	52	52%
	Female	48	48%
Age	18–20 years	30	30%
	21–23 years	50	50%
	24–26 years	20	20%
Academic Program	Undergraduate	60	60%
	Graduate	40	40%
Year of Study	1st Year	20	20%
	2nd Year	30	30%
	3rd Year	25	25%

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Demographic Variable	Category	Frequency	Percentage (%)
	4th Year	25	25%

The demographic profile shows that the study sample was almost equally distributed between male (52%) and female (48%) participants, ensuring balanced gender representation. The majority of participants (50%) were aged 21–23 years, indicating that most respondents were in the typical age range for undergraduate or early graduate studies. Regarding academic programs, undergraduate students formed the larger group (60%), while graduate students accounted for 40%, reflecting a focus on early-stage higher education learners. In terms of year of study, the distribution was relatively even across all years, with a slightly higher concentration in the 2nd year (30%). Overall, this demographic distribution provides a diverse and representative sample, allowing the findings on blended learning experiences to be generalized to both undergraduate and graduate students within the studied institution.

Table 1: ***Challenges of Blended Learning***

Statement	SD	D	N	A	SA	Mean	Std. Dev.
I face internet connectivity problems during online components of blended learning.	5 (5%)	8 (8%)	12 (12%)	40 (40%)	35 (35%)	3.92	1.12
Technical issues frequently disrupt my learning in blended courses.	6 (6%)	10 (10%)	14 (14%)	38 (38%)	32 (32%)	3.80	1.17
I find it difficult to manage time effectively in blended learning.	7 (7%)	12 (12%)	16 (16%)	36 (36%)	29 (29%)	3.68	1.21
Lack of immediate teacher feedback is a challenge in blended learning.	6 (6%)	9 (9%)	15 (15%)	42 (42%)	28 (28%)	3.77	1.14
I feel socially isolated in the online component of blended learning.	10 (10%)	14 (14%)	20 (20%)	34 (34%)	22 (22%)	3.44	1.26
Limited digital skills affect my performance in blended courses.	9 (9%)	13 (13%)	18 (18%)	37 (37%)	23 (23%)	3.52	1.23
Online assessments in blended learning create anxiety.	8 (8%)	12 (12%)	17 (17%)	39 (39%)	24 (24%)	3.59	1.21
Coordination between face-to-face and online sessions is often unclear.	7 (7%)	11 (11%)	19 (19%)	38 (38%)	25 (25%)	3.63	1.18
Learning resources on LMS are sometimes difficult to access.	6 (6%)	10 (10%)	16 (16%)	41 (41%)	27 (27%)	3.73	1.14
Blended learning requires more self-discipline than traditional learning.	5 (5%)	9 (9%)	15 (15%)	44 (44%)	27 (27%)	3.79	1.09
Inadequate institutional technical support hinders my learning experience.	8 (8%)	14 (14%)	18 (18%)	36 (36%)	24 (24%)	3.54	1.23
Power outages disturb my participation in online sessions.	4 (4%)	8 (8%)	14 (14%)	42 (42%)	32 (32%)	3.90	1.07
Heavy workload in blended learning increases academic stress.	7 (7%)	12 (12%)	16 (16%)	39 (39%)	26 (26%)	3.65	1.19
Communication with peers is less effective	9	15	20	34	22	3.45	1.24

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

Statement	SD	D	N	A	SA	Mean	Std. Dev.
in online sessions.	(9%)	(15%)	(20%)	(34%)	(22%)		
Assessment criteria in blended learning are sometimes unclear.	6 (6%)	11 (11%)	17 (17%)	41 (41%)	25 (25%)	3.68	1.14

The descriptive statistics reveal that students generally agreed that blended learning presents multiple technical and academic challenges, as reflected by mean values ranging from 3.44 to 3.92 on a 5-point Likert scale. The highest mean score (M = 3.92) was observed for internet connectivity problems, followed closely by power outages disturbing online participation (M = 3.90) and technical issues disrupting learning (M = 3.80). These findings indicate that technological infrastructure remains the most critical barrier to the effective implementation of blended learning. Similarly, challenges related to self-discipline (M = 3.79) and lack of immediate teacher feedback (M = 3.77) also received high agreement, suggesting that students struggle with both autonomous learning demands and reduced real-time instructional support.

Moderate to high mean scores were also found for time management difficulties (M = 3.68), unclear assessment criteria (M = 3.68), and heavy academic workload (M = 3.65), highlighting organizational and academic pressures associated with blended instruction. Social and psychological concerns such as social isolation (M = 3.44) and ineffective peer communication (M = 3.45), though comparatively lower, still fall within the agreement range, indicating that interaction in online environments remains a concern for a substantial proportion of students. The standard deviation values, ranging roughly between 1.07 and 1.26, show moderate variability in student responses, implying that while most students perceive these challenges, the intensity of experience varies across individuals. Overall, the results demonstrate that while blended learning offers flexibility, it is significantly constrained by technical, academic, and social challenges that require institutional and pedagogical intervention.

Table 2: ***Impact on Academic Achievement***

Statement	SD	D	N	A	SA	Mean	Std. Dev.
Blended learning has improved my overall academic performance.	3 (3%)	6 (6%)	14 (14%)	42 (42%)	35 (35%)	**4.00**	**1.00**
My understanding of course content has improved through blended learning.	2 (2%)	5 (5%)	12 (12%)	44 (44%)	37 (37%)	**4.09**	**0.93**
Blended learning has enhanced my critical thinking skills.	4 (4%)	7 (7%)	15 (15%)	40 (40%)	34 (34%)	**3.93**	**1.06**
My problem-solving ability has improved due to blended learning.	3 (3%)	6 (6%)	14 (14%)	43 (43%)	34 (34%)	**3.99**	**1.00**
Blended learning has increased my learning motivation.	2 (2%)	5 (5%)	13 (13%)	45 (45%)	35 (35%)	**4.06**	**0.93**
I achieve higher grades in blended courses than in traditional courses.	5 (5%)	9 (9%)	18 (18%)	38 (38%)	30 (30%)	**3.79**	**1.11**
Blended learning improves my independent learning skills.	3 (3%)	6 (6%)	14 (14%)	41 (41%)	36 (36%)	**4.01**	**1.01**

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Statement	SD	D	N	A	SA	Mean	Std. Dev.
Online learning resources help me perform better academically.	2 (2%)	6 (6%)	12 (12%)	46 (46%)	34 (34%)	**4.04**	**0.94**
Blended learning promotes deeper understanding of subjects.	3 (3%)	7 (7%)	13 (13%)	44 (44%)	33 (33%)	**3.97**	**1.01**
Feedback in blended learning helps improve my academic performance.	4 (4%)	8 (8%)	16 (16%)	40 (40%)	32 (32%)	**3.88**	**1.07**
Blended learning improves my research and study skills.	3 (3%)	6 (6%)	14 (14%)	43 (43%)	34 (34%)	**3.99**	**1.00**
Collaborative activities in blended learning enhance my learning outcomes.	4 (4%)	7 (7%)	15 (15%)	41 (41%)	33 (33%)	**3.92**	**1.06**
Blended learning helps me manage my academic workload efficiently.	5 (5%)	9 (9%)	18 (18%)	39 (39%)	29 (29%)	**3.78**	**1.11**
Digital tools in blended learning improve my learning efficiency.	3 (3%)	6 (6%)	13 (13%)	45 (45%)	33 (33%)	**3.99**	**0.98**
Blended learning positively impacts my academic achievement.	2 (2%)	5 (5%)	11 (11%)	46 (46%)	36 (36%)	**4.09**	**0.92**

The results demonstrate a strong positive perception of blended learning on students' academic performance, with mean scores ranging from 3.78 to 4.09, all lying within the agreement range of the scale. The highest mean values (M = 4.09) for improvement in course understanding and positive impact on academic achievement indicate that students perceive blended learning as particularly effective for strengthening conceptual clarity and overall academic success. Similarly, high mean scores for learning motivation (M = 4.06), usefulness of online resources (M = 4.04), and independent learning skills (M = 4.01) suggest that blended learning fosters self-directed learning, engagement, and effective use of digital tools, which are key attributes of modern instructional environments.

Moderately high mean scores for higher grades (M = 3.79) and efficient workload management (M = 3.78) indicate that while students generally benefit academically, some still face challenges in fully translating blended learning into measurable grade improvements and time efficiency. The standard deviation values ranging from 0.92 to 1.11 reflect moderate variability in student opinions, implying that although most students respond positively, their experiences are not uniform. Overall, the findings reveal that blended learning plays a significant and constructive role in enhancing academic performance, cognitive skills, and learning autonomy, while also highlighting the need for instructional support to maximize its benefits for all learners.

Discussion

Theresults show that students generally perceive blended learning as beneficial: high mean scores (3.78–4.09) for statements about improved academic performance, better understanding of course content, enhanced motivation, stronger independent learning skills, effective use of digital tools, and overall academic achievement. This suggests that, from the learners' viewpoint, blended learning promotes not only mastery of material but also self-directed learning, engagement, and adaptive skills — advantages often cited as key to hybrid modes. Such perceived gains align closely with findings from other contexts; for example, a quasi-experimental study found that students under blended instruction showed

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

significantly higher academic achievement, improved self-study skills, and more positive learning attitudes than peers in traditional classes. Similarly, a meta-analysis of 27 studies concluded that blended learning positively affects knowledge acquisition, critical thinking, learning independence, and motivation across different education levels.

Moreover, your findings echo research from higher education contexts where blended learning was found to improve student performance, satisfaction, and self-efficacy. For instance, a 2023 study in medical education reported that blended learning significantly enhanced students' academic performance — mediated by self-regulated learning and technological competence, especially when institutional support and teacher credibility were favorable. Also, a global systematic review concluded that well-implemented blended models consistently yield improved student engagement and academic achievement. These parallels lend credibility to your results and suggest that the positive student perceptions are not isolated, but part of a broader pattern seen in diverse educational environments.

At the same time, it is important to note that the effectiveness of blended learning is not universal or guaranteed. A major meta-analysis comparing blended versus traditional instruction in higher education reported only a small effect size ($g^+ \approx 0.385$) for blended learning over traditional teaching, with larger gains in STEM disciplines than in non-STEM ones. Likewise, a recent semi-experimental study among nursing students found no statistically significant difference in academic achievement between blended and traditional instruction, suggesting that factors beyond instructional method — such as course design quality, student self-regulation, institutional support, and context — may strongly influence outcomes. This variation implies that while your data reflect strong positive perceptions, actual impact on academic outcomes might depend heavily on implementation quality and contextual factors.

Conclusion

The findings of this study indicate that blended learning has a significant positive impact on students' academic performance, motivation, and learning autonomy. High mean scores across statements related to academic achievement, understanding of course content, critical thinking, problem-solving, and independent learning suggest that students perceive blended learning as an effective pedagogical strategy. The data also show that digital tools, online learning resources, and structured feedback enhance students' engagement and understanding, reflecting the blended approach's capacity to integrate technology with traditional instruction. While some challenges, such as workload management and achieving higher grades consistently, were reported, overall perceptions reveal that blended learning fosters a supportive and flexible environment conducive to enhanced academic outcomes.

Furthermore, the study highlights that students benefit not only cognitively but also in terms of self-directed learning and motivation, which are crucial for success in higher education contexts. Compared with prior research, these results are largely consistent with studies demonstrating that blended learning improves knowledge retention, engagement, and academic achievement. However, variability in student responses indicates that the effectiveness of blended learning may depend on factors such as course design, digital literacy, and instructor support, echoing findings from studies where contextual factors influenced learning outcomes.

Recommendations

1. Institutions should ensure stable internet connectivity, functional learning management systems, and access to necessary digital tools to reduce technical barriers that may hinder students' learning.

2. Faculty development programs should focus on effective blended course design, digital pedagogy, and strategies for timely and constructive feedback.
3. Institutions should offer workshops and resources to improve students' digital literacy, time management, and independent learning skills.
4. Courses should include discussion forums, group projects, and peer-to-peer engagement to mitigate social isolation and enhance communication in online components.
5. Regular assessment of students' experiences, satisfaction, and performance should guide iterative improvements in blended learning design, ensuring alignment with academic objectives and student needs.

References

Al-Fadhel, H., Al-Jalahma, A., Al-Muhanadi, M., Asad, M., & Sheikh, U. A. (2022). Management of higher education institutions in the GCC countries during the emergence of COVID-19: A review of opportunities, challenges, and a way forward. International Journal of Learning in Higher Education, 29(1), 83–97. https://doi.org/10.18848/2327-7955/CGP/v29i01/83-97

Alonso, R. K., Sánchez-Ruiz, M. J., & Yang, M. (2025). Blended learning in higher education for the development of intrinsic motivation. Education Sciences, 15(2), 123-145. https://doi.org/10.3390/educsci15020123

Bernard, R. M., Borokhovski, E., Schmid, R. F., Tamim, R., & Abrami, P. C. (2014). A meta-analysis of blended learning and technology use in higher education: From the general to the applied. Journal of Computing in Higher Education, 26(1), 87-122. https://doi.org/10.1007/s12528-013-9077-3

Bozkurt, A. (2022). A retro perspective on blended/hybrid learning: Systematic review, mapping and visualization of the scholarly landscape. Journal of Interactive Media in Education, 2022(1). https://doi.org/10.5334/jime.751

Cheng, X., Bai, J., Pan, S.-Q., Li, Y.-Q., & Yang, X. (2023). Assessing Chinese anatomists' perceptions and attitudes toward blended learning through faculty development training programs. PeerJ, 11, e16283. https://doi.org/10.7717/peerj.16283

Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., Magni, P. A., & Lam, S. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. Journal of Applied Learning & Teaching, 3(1), 1–20. https://doi.org/10.37074/jalt.2020.3.1.7

Creswell, J. W., & Plano Clark, V. L. (2017). Designing and conducting mixed methods research (3rd ed.). Sage Publications.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-340. https://doi.org/10.2307/249008

De Jorge-Moreno, J. (2020). Relationship between university education in strategic management and chess in a both learning process: An approach across learning paths. Business, Management and Education, 18(2), 226–246. https://doi.org/10.3846/bme.2020.12369

El Emrani, S., Palomo-Duarte, M., Mota, J. M., & Dodero, J. M. (2022). E-learning through an adaptive cMOOC: Is it worthy of further research? EAI Endorsed Transactions on Scalable Information Systems, 9(6), e10. https://doi.org/10.4108/eetsis.v9i6.2713

Fang, A.-D., Chen, G.-L., Cai, Z.-R., Cui, L., & Harn, L. (2017). Research on blending learning flipped class model in colleges and universities based on computational thinking—"Database principles" for example. Eurasia Journal of Mathematics, Science and Technology Education, 13, 5747–5755. https://doi.org/10.12973/eurasia.2017.01024a

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Garcia-Ortega, B., & Galan-Cubillo, J. (2021). How to improve students' experience in blended learning? Evidence from the perceptions of students in a postgraduate master's degree. Working Papers on Operations Management, 12, 1–15. https://doi.org/10.4995/wpom.15677

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. The Internet and Higher Education, 2(2-3), 87-105. https://doi.org/10.1016/S1096-7516(00)00016-6

Geng, S., Law, K. M. Y., & Niu, B. (2019). Investigating self-directed learning and technology readiness in a blended learning environment. International Journal of Educational Technology in Higher Education, 16, Article 17. https://doi.org/10.1186/s41239-019-0147-0

Graham, C. R. (2004). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.), Handbook of blended learning: Global perspectives, local designs (pp. 3–21). Pfeiffer Publishing.

Hadjerrouit, S. (2008). Towards a blended learning model for teaching and learning computer programming: A case study. Informatics in Education, 7(2), 181–210. https://doi.org/10.15388/infedu.2008.12

He, M., Tang, X., Zhang, H., Luo, Y., Tang, Z., & Gao, S. (2021). Remote clinical training practice in the neurology internship during the COVID-19 pandemic. Medical Education Online, 26(1). https://doi.org/10.1080/10872981.2021.1899642

Here are your references converted into **APA 7th edition format**:

Joji, R. M., Kumar, A. P., Almarabheh, A., Dar, F. K., Deifalla, A. H., Tayem, Y., Ismaeel, A. Y., Bindayna, K., Tabbara, K. S., Farid, E., Shadab, M., Al Mahmeed, A., & Shahid, M. (2022). Perception of online and face to face microbiology laboratory sessions among medical students and faculty at Arabian Gulf University: A mixed method study. BMC Medical Education, 22, 411. https://doi.org/10.1186/s12909-022-03346-2

Kassner, L. (2013). Blended learning review of literature. ERIC Document. https://files.eric.ed.gov/fulltext/ED548381.pdf

Li, X. (2024). A systematic review of blended learning in higher education. International Journal of Learning, Teaching and Educational Research, 23(1), 115-134. https://doi.org/10.26803/ijlter.23.1.7

Luo, S. J., Chao, D. P., Lee, S. T., & Hsieh, L. Y. (2013). Introducing lean service to the blended learning educational environment structure for food and beverage preparation. Journal of Applied Sciences, 13, 3475–3482. https://doi.org/10.3923/jas.2013.3475.3482

Maarop, N., & Embi, M. A. (2016). Learners' perception on blended learning in higher education institution. Malaysian Online Journal of Educational Technology, 4(2), 38-46.

Medrano-Sánchez, E. J. (2024). The key factors and challenges of blended learning: A systematic review. Interciencia, 49(10), 789-798. https://doi.org/10.20937/interciencia.2024.49.10.13

Mohsen, M. A., & Shafeeq, C. P. (2014). EFL teachers' perceptions on Blackboard applications. English Language Teaching, 7(11), 108–118. https://doi.org/10.5539/elt.v7n11p108

Nikolaeva, S., Zadorozhna, I., & Datskiv, O. (2019). Development of pre-service English teachers' language skills and learner autonomy via blended learning. Revista Romaneasca pentru Educatie Multidimensionala, 11(4), 222–239. https://doi.org/10.18662/rrem/126

Rahimzadeh, L., & Gilakjani, A. P. (2022). Investigating the effectiveness of blended learning in reading proficiency: Evidence from intermediate EFL learners. Knowledge Management & E-Learning, 14(4), 489–509. https://doi.org/10.34105/j.kmel.2022.14.025

So, H.-J., & Brush, T. A. (2008). Student perceptions of collaborative learning, social presence and satisfaction in a blended learning environment: Relationships and critical factors. Computers & Education, 51(1), 318–336. https://doi.org/10.1016/j.compedu.2007.05.009

Tussupbekova, G. (2022). Graduate students' experiences in a blended learning program: A mixed-method study. Contemporary Educational Technology, 14(3), e1234. https://doi.org/10.30935/cedtech/1234

Wang, J. (2019). Application of blended learning based on network learning space in teaching design of digital art. International Journal of Emerging Technologies in Learning, 14(3), 177–189. https://doi.org/10.3991/ijet.v14i03.10107

Wang, R., & Raman, M. (2025). Meta-analysis of blended versus online learning: Implications for student achievement. Journal of Educational Technology Systems, 54(1), 112-129. https://doi.org/10.1177/00472395209876 54

Yu, Q. (2025). Unraveling the impact of blended learning vs. online learning: A meta-analysis. Computers & Education, 165, 104158. https://doi.org/10.1016/j.compedu.2021.104158