Sustaining Quality Education: Role of Pedagogical Support in Blended Learning for IPTS Students in Klang Valley

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This pilot study explores the pedagogical support received by students in private higher education institutions (IPTS) within the Klang Valley, specifically through the lens of blended learning. Although the blended learning framework facilitates flexible and accessible educational opportunities, its success depends heavily on robust pedagogical support to optimize teaching efficacy and student learning outcomes. Key dimensions of pedagogical support include robust lecturer-student interaction, the effective delivery of practical and hands on components, the provision of timely real-time feedback, and the high level of digital proficiency among educators. These factors are essential to sustain engaging, students-centered learning environments. The objective of this study is to assess these pedagogical support factors and propose strategic instructional improvements aimed at fostering sustainable quality education. A quantitative methodology was used, entailing the distribution of a survey among IPTS students across diverse programs and academic levels. The data analysis concentrated on identifying patterns based on students' academic backgrounds and previous experiences with blended learning. Preliminary literature suggests that effective instructional design and comprehensive pedagogical support within blended environments significantly enhance student engagement and achievement. The findings of this study are anticipated to yield pragmatic insights for educators, academic administrators, and policymakers in enhancing pedagogical practices to ensure effective blended delivery within Malaysian IPTS.

Keywords: Pedagogy, Blended learning, Pedagogical support, Teaching strategies, Sustainable quality education.

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1 Introduction

Blended learning, which integrates traditional face-to-face instruction with online learning strategies, has gained considerable adoption among private higher education institutions (IPTS) in Malaysia, particularly in the Klang Valley. This approach offers greater flexibility and supports more personalized learning experiences. However, maintaining educational quality within such hybrid environments is contingent upon the provision of robust pedagogical support. Critical support factor includes active lecturer–student interaction, timely constructive feedback practices, seamless integration of technology, and adequate levels of digital literacy among students. The presence of these support dimensions facilitates the development of effective, student-centered learning environment. In addition, compared to public universities, IPTS often operate under more constrained resources, making the strategic allocation of pedagogical support even more vital for sustaining high academic standards in blended learning contexts.

Despite the widespread implementation of blended learning in Malaysia IPTS, empirical evidence examining the pedagogical support factors that influence the sustainability of quality education remains limited, particularly from the students' perspective. Existing studies tend to focus on technological readiness or instructional delivery in isolation, with less attention given to how multiple pedagogical dimensions collectively enhance the perceived effectiveness of blended learning. This study addresses this gap by examining key pedagogical support dimensions, namely lecturer-student interaction, technology utilization, feedback mechanisms, digital literacy, and institutional resources, within a blended learning context among IPTS students in the Klang Valley. The aim of this study is to investigate the relationship between pedagogical support and the perceived effectiveness of blended learning.

1.1 Research Question, Research Objective and Hypotheses.

This purpose of this study investigates the implementation of blended learning by focusing on the pedagogical support factors that influence its success. Based on the identified problem, this study aims to address the following research question, research objective and hypotheses:

Research question:
What is the relationship between pedagogical support and the sustainability of quality education in blended learning for IPTS students in Klang Valley.

Research objective:
To examine the relationship between pedagogical support and the sustainability of quality education in blended learning for IPTS students in Klang Valley.

This study will test the following hypotheses:

H1: There is a significant positive relationship between pedagogical support and the sustainability of quality education in blended learning for IPTS students in Klang Valley.

2 Problem Statement

The merging of in-person and virtual learning is known as blended learning, and it is becoming popular among private higher education institutions (IPTS) in Malaysia's Klang Valley. However, the success of its implementation depends heavily on specific pedagogical support dimensions to ensure high-quality instruction. Facilitating interaction between teachers and students is a major support pillar that enables the anticipated benefits of customized learning experiences. According to Bouilheres et al. (2020) and Tan et al. (2022), this is especially crucial in a blended learning setting where good communication is crucial to encouraging participation and comprehension. Consistent application of technological tools is also vital support for learning and without it, an engagement gap may emerge. (Tan et al., 2022).

Robust feedback mechanisms are further essential components of pedagogical support within blended learning settings. While feedback plays a crucial role in guiding and improving student learning, the literature reveals that when students receive minimal or unclear input in online environments, it highlights a need for stronger instructional support (Mahmood & Noor, 2020). Additionally, the level of digital literacy among students is a fundamental support factor that influences their capacity to participate effectively in blended learning activities. Studies highlight while digital competence is essential for managing online learning tasks, a considerable number of students struggle due to insufficient training and technological support (Hutagalung & Purbani, 2021; Laily & Binasdevi, 2023). Consequently, this digital gap leads to uneven learning experiences and reinforces educational inequities between IPTS and public institutions, ultimately undermining students' overall academic performance (Yustina et al., 2022).

The challenges of resource limitations encountered by IPTS exacerbate these concerns, as numerous private institutions lack the financial and technical frameworks available in their public counterparts. Limited access to high-quality digital resources, learning management systems, and training for both students and educators culminates in subpar learning conditions (Djajadikerta et al., 2021). As articulated by Mahmood and Noor (2020), the pressure on these institutions is incongruent with their aspirations to deliver quality education, indicating that without addressing these discrepancies, the sustainability of blended learning frameworks in IPTS will be jeopardized.

Strengthening these pedagogical support dimensions requires a comprehensive and multidimensional approach. Firstly, strengthening students' digital literacy through well-structured training programs is essential to ensure they possess the technical skills and confidence necessary for thriving in blended learning contexts (Mufidah et al., 2023; Laily & Binasdevi, 2023). Secondly, implementing effective feedback systems supported by digital tools can help close the communication gap between lecturers and students, creating a more interactive and supportive learning environment (Adinda &

Mohib, 2020). In addition, the strategic distribution of institutional resources and partnerships with technology providers can help overcome infrastructural limitations commonly faced by IPTS, thereby enhancing the overall quality of blended learning experiences (Álvarez-Risco et al., 2022). Through the integration of these interrelated strategies, IPTS can better manage the complexities of blended education and foster improved academic performance and engagement among students.

3 Literature Review

The sustainability of quality educational standards through blended learning frameworks within private higher education institution (IPTS) in the Klang Valley, Malaysia, is fundamentally dependent on various pedagogical support dimensions. These dimensions encompass robust lecturer-student interaction, consistent utilization of technology, effective feedback mechanisms, digital literacy among students, and the availability of institutional resources.

3.1 Limited Lecturer-Student Interaction.

Research evidence suggests that while blended learning provides a degree of flexibility, its success relies heavily on the cultivation of substantial lecturer-student interaction. For instance, the findings articulated by Wu and Luo emphasize that while students enjoy the advantages of blended courses, a considerable number expressed a desire for enhanced engagement and interaction within these contexts, which are essential for facilitating profound learning experiences. The investigation conducted by Elsayad corroborates this assertion, drawing attention to the significance of metacognitive self-regulation and student-teacher interactions as fundamental components for improving students' learning experiences and outcomes within blended educational settings (ElSayad, 2024). Additionally, insights from Sianipar (2025) indicate that although student-lecturer interactions were generally deemed satisfactory, there exists a pressing need for more dynamic approaches to elevate engagement levels, suggesting that current pedagogical strategies may inadequately address this vital aspect.

3.2 Inconsistent Use of Technology.

Another major problem in mixed learning environments is the inconsistent use of educational technology. According to Herliana et al. (2020), a considerable percentage of lecturers lack confidence when it comes to using digital technologies intended to improve learning experiences, and many of them indicate difficulties in properly utilizing online platforms. Although interactive content in blended learning was generally well welcomed, Rahmi et al. (2024) showed that the overall effectiveness of the program still depended significantly on the lecturers' proficiency with these technological tools. This conclusion is supported by research showing that effective blended learning implementation requires a strong digital infrastructure in addition to continuous professional development for teachers (Dwipayanti et al., 2024).

3.3 Inadequate Feedback Mechanism.

One significant weakness in the architecture for mixed learning is the absence of strong feedback mechanisms. Rahmy et al. (2021) found that although students shown interest in interactive content, feedback procedures were often either superficial or delayed, making it difficult to intervene in students' learning in a timely manner. Additionally, in blended situations, improving student motivation and comprehension requires appropriate feedback. However, feedback is frequently applied in practice much less effectively (Permata & Nanda, 2021). According to Adinda and Mohib (2020), these constraints may necessitate the implementation of more structured mechanisms to guarantee consistent and helpful feedback in blended learning forms.

3.4 Varying Levels of Digital Literacy.

In blended learning situations, students' varying levels of digital literacy ability pose a significant barrier to effective learning. Research shows how students' varied digital platform experiences greatly influence their expectations and participation in blended learning, which hinders their views of learning and academic results (Dwipayanti et al., 2024). The shortcomings noted by Ribahan, who claims that many students struggle with the operational complexities of digital learning tools, make this problem worse and reduce the effectiveness of blended learning programs (Ribahan, 2023). Therefore, it is essential to address these gaps by providing specialized training and support systems to improve learners' readiness and performance in blended learning environments.

3.5 Resource Limitations in IPTS.

The constraints concerning resources encountered by numerous IPTS have a direct correlation with the quality of blended learning experiences. Kian et al. (2024) observe that restricted access to technological resources and educational materials significantly hampers the ability of institutions to implement effective blended learning strategies. Moreover, Yaakop et al. (2020) emphasize that such limitations can adversely impact the overall teaching and learning milieu, as institutions are unable to furnish adequate support systems for both educators and learners. Addressing resource limitations necessitates augmented investment in technological infrastructure and access to high-quality educational materials to enrich the blended learning experience.

Collectively, the literature demonstrates that pedagogical support in blended learning is multidimensional and interrelated. Robust interaction, effective feedback, consistent technology use, and digital literacy jointly influence students' engagement, motivation, and learning outcomes. These findings suggest that sustainable quality education depends on a coherent pedagogical design that prioritizes institutional and instructional support.

4 Methodology

This study employs a quantitative descriptive and correlational research design to examine the relationship between pedagogical challenges and sustainable quality education in blended learning among IPTS students. The quantitative approach allows for systematic data collection and statistical analysis to identify patterns and correlations based on student experiences and perceptions. The descriptive aspect provides an overview of the pedagogical challenges faced by students, while the correlational component evaluates the strength and direction of the relationship between variables.

4.1 Instrument Development.

A self-administered structured questionnaire was used as the primary data collection instrument. The questionnaire was developed based on a comprehensive review of existing literature on blended learning and pedagogical support in higher education. It comprises three sections:

i. Demographic Information – includes items such as gender, university, age and level of study.
ii. Pedagogical Support– covers dimensions such as clarity of learning objectives, the effectiveness of the instructional structure, the timeliness of instructor feedback, social-emotional support from learning community, and the facilitation of learner autonomy.
iii. Perceived Effectiveness of Blended Learning – measured using statements rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), assessing the students' satisfaction and learning outcomes.

Reliability analysis was conducted using Cronbach's alpha to assess the internal consistency of the measurement scales. The independent variable (Pedagogical Support) scale demonstrated good reliability with Cronbach's alpha coefficient of 0.831, while the dependent variable (Perceived Effectiveness of Blended Learning) showed internal consistency with a Cronbach's alpha of 0.924. These values exceed the recommended threshold of 0.70, indicating that the instruments are reliable for further analysis, as summarized in Table 1.

Table 1. Cronbach's Alpha Value for Each Dimension

Dimension	Cronbach's Alpha	Reliability	Description
Pedagogical Support	0.831	Good Reliability	The items consistently measured students' perceptions of pedagogical support received during

			the blended learning implementation.
Perceived Effectiveness of Blended Learning	0.924	Excellent Reliability	The items assessed students' perceptions of the overall learning outcomes and satisfaction.

Table 2. Demographic Profile of Respondents based on gender and university

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	30	75.0
	Male	10	25.0
University	Universiti Geomatika Malaysia (UGM)	9	22.5
	Universiti Poly-Tech Malaysia (UPTM)	31	77.5

4.2 Sampling and Data Collection Procedure.

The sampling frame comprised undergraduate students enrolled in diploma and bachelor programs at a selected IPTS in Klang Valley who had prior exposure to blended learning. The study involved 40 undergraduate students between the ages of 18 and 25 from a chosen IPTS. The demographic distribution of these participants, including gender and university, is presented in Table 2. Non-probability convenience sampling was the sample strategy used since it was practicable and allowed access to individuals who were willing and able to participate. Google Forms was used to distribute the questionnaire, guaranteeing accessibility and broad distribution among students, irrespective of their geographic location. Two weeks were allotted for data collecting. Prior to their involvement, participants gave their agreement, were made aware that the study was optional, and were guaranteed the confidentiality of their answers. The institution's research ethics committee provided ethical approval.

4.3 Data Analysis Techniques.

Data were analyzed using Statistical Package for the Social Sciences (SPSS) Version 26. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the demographic data and the distribution of responses

for each item in the questionnaire. These statistics provided a general overview of the types and extent of pedagogical challenges encountered and students' perceptions of blended learning effectiveness.

To assess the relationship between pedagogical challenges and the effectiveness of blended learning, a Pearson product-moment correlation coefficient (r) was calculated. This analysis determined the strength and direction of the association between the two main variables.

5 Findings and Discussion

As illustrated in Table 2, the majority of the respondents were female (75.0%), and a significant portion (77.5%) were from Universiti Poly-Tech Malaysia (UPTM). These demographics provide the basis for the subsequent correlation analysis. The results of the Pearson correlation analysis revealed a statistically significant positive relationship between pedagogical support and the perceived effectiveness of blended learning ($r = .634$, $p < .001$). This indicates that as students felt more pedagogically supported, their perceived effectiveness of the course increased.

This finding suggests that pedagogical support serves as a critical enabling factor because when students have access to clear instruction, responsive feedback, and peer assistance, the overall effectiveness of the blended learning experience is significantly enhanced. This underscores the vital role of robust support systems in ensuring the sustainability of quality education within blended environments.

This finding is critical, as it underscores the direct impact of pedagogical quality on the overall success of blended learning. Key support factors identified by participants included the presence of clear and consistent communication from lecturers as well as sufficient feedback and assistance during online sessions. Other essential dimensions involved ample opportunities for interaction and discussion along with the reliable performance of learning platforms. The presence of these pedagogical supports was linked to students feeling connected and motivated as well as being more confident in achieving desired learning outcomes. This finding supports existing literature that emphasizes the role of pedagogical planning, instructor presence, and learner support as central to effective blended learning.

Moreover, the study highlights the evolving expectations of students in digital learning environments. As students become more digitally literate, they also seek more engaging, interactive, and meaningful learning experiences. The ability of educators to adapt their teaching methods to include varied pedagogical tools, such as flipped classrooms, collaborative tasks, and timely feedback mechanisms, becomes crucial in sustaining learning quality.

In addition, this study reinforces the importance of listening to student feedback when designing and evaluating blended learning systems. Student experiences offer rich insights into the practical challenges that may not always be visible from the educator's or administrator's perspective.

These findings suggest that while blended learning has great potential, its success hinges heavily on thoughtful pedagogical execution, robust support systems, and ongoing evaluation to ensure alignment with student needs and institutional goals.

6 Conclusion

This study supports the idea that pedagogical quality is a key factor in determining how well blended learning works for students in higher education. The strong positive relationship between blended learning efficacy and pedagogical support suggests that robust teaching strategies have a significant influence on academic achievement in addition to increasing student satisfaction.

The alignment between pedagogical planning and successful implementation is observed in support factors like precise instructions, frequent online interaction, and matched instructional resources. This demonstrates the necessity of providing educators with more methodical training in creating integrated learning environments that take into account the various learning styles of their students.

The results also highlight how crucial technology is as a tool for encouraging student active participation, reflective thinking, and self-directed learning, in addition to being a medium for delivering knowledge. Consequently, a key element of effective blended learning is teachers' capacity to integrate technology with purposeful teaching methods.

All things considered, this study adds to the continuing discussion of maintaining blended learning in Malaysian higher education. In order to guarantee this learning model's long-term success in the post-pandemic educational environment, it highlights the necessity of pedagogical techniques that are student-centered, data-driven, and responsive.

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I affirm the Author Representations noted and confirm that I have reviewed and complied with the relevant Instructions to Authors, the Ethical Policy, and Conflicts of Interest Disclosure.

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