Pertanika J. Soc. Sci. & Hum. 34 (3): 1295 - 1314 (2026)

PERTANIKA JOURNALS

SOCIAL SCIENCES & HUMANITIES

Journal homepage: http://www.pertanika.upm.edu.my/

Teachers' Perspectives on the Feasibility of Education Reform in Rural Schools: An Exploratory Case Study of the Versatile Learning Pathway Model

Soo Kum Yoke[1]*, Siti Nur Aleesah Mohd Rosley[1], Nur Izzah Jamil[2], Faizah Abd Majid[3], and Cuong Huy Pham[4]

[1]Akademi Pengajian Bahasa, Universiti Teknologi MARA, Negeri Sembilan branch, Rembau Campus, 71300 Negeri Sembilan, Malaysia
[2]School of Computing and Mathematics, College of Computing, Informatics and Mathematics, Universiti Teknologi MARA, Negeri Sembilan branch, Rembau Campus,71300 Negeri Sembilan, Malaysia
[3]Faculty of Education, Universiti Teknologi MARA, Puncak Alam Campus, 42300 Selangor, Malaysia
[4]Faculty of English, Ho Chi Minh City University of Economics and Finance, 141-145 Dien Bien Phu, Gia Dinh Ward, 70000 Ho Chi Minh City, Vietnam

ABSTRACT

The Malaysian education system continues to face persistent structural challenges in rural and underserved areas, including limited access to educational resources, inadequate infrastructure and uneven technological readiness. While the COVID-19 pandemic intensified these challenges, it also exposed long-standing inequalities that remain relevant in the post-pandemic period. This study examines teachers' perspectives on education reform in a rural secondary school in Negeri Sembilan, Malaysia, using the Versatile Learning Pathway (VLP) model as an analytical lens to explore the feasibility of blended learning implementation. An exploratory case study design was employed, involving a survey administered to 18 purposively selected teachers. Data was analysed using descriptive statistics and a SWOT (Strengths, Weaknesses, Opportunities, Threats) framework to examine institutional readiness, perceived benefits and implementation constraints associated with VLP. The findings indicate that teachers perceive VLP as a potentially viable approach for supporting instructional flexibility and learning access. Although the findings are context-specific and not intended for statistical generalisation, the study provides practitioner-based insights into the complexities of implementing blended learning as part of rural education reform. The results underscore the importance of teacher readiness, institutional

ARTICLE INFO

Article history:
Received: 21 March 2025
Accepted: 20 May 2026
Published: 12 June 2026

DOI: https://doi.org/10.47836/pjssh.34.3.09

E-mail addresses:
Sooku607@uitm.edu.my (Soo Kum Yoke)
Faiza404@uitm.edu.my (Siti Nur Aleesah Mohd Rosley)
Nurizzah@uitm.edu.my (Nur Izzah Jamil)
2024688144@student.uitm.edu.my (Faizah Abd Majid)
Cuongph@uef.edu.vn (Cuong Huy Pham)
* Corresponding author

support and contextual planning in ensuring the feasibility of reform initiatives in rural school settings. This study contributes to the rural education reform literature by offering an institutional-level feasibility diagnosis of blended learning implementation using a SWOT framework, grounded in teachers' lived experiences rather than policy-level assumptions.

Keywords: Education reform, Malaysian education system, rural schools, teacher perspectives, Versatile Learning Pathway (VLP), blended learning, SWOT analysis

INTRODUCTION

Rural education systems in many countries continue to experience structural challenges related to access, equity and quality of teaching. In Malaysia, rural schools often face limitations in infrastructure, digital connectivity and teacher utilisation that contribute to the persistent rural-urban gap in educational outcomes (Tahir et al., 2025). While recent investments in digital infrastructure have improved access in some areas, many rural schools continue to operate under resource constraints that affect teaching and learning practices (Abdul Rahman et al., 2025).

The COVID-19 pandemic has exacerbated these challenges but has also exposed systemic weaknesses in teaching delivery and institutional readiness. Importantly, these issues have not disappeared after the pandemic but rather have highlighted the need for more flexible and context-sensitive approaches to education reform, particularly in rural settings (Alison & Mugyenyi, 2025). In this study, education reform is understood as system-level changes in teaching delivery, learning modalities and resource utilisation that aim to increase access, flexibility and effectiveness in underserved school contexts (Reyes, 2023).

Teachers play a crucial role in the success of educational reform initiatives, as they are responsible for implementing change at the classroom level. Their perceptions influence teaching strategies, classroom management and the sustainability of innovation (Finnanger, 2024). Therefore, understanding teachers' perspectives is important, especially in rural schools where contextual constraints can shape how reform is experienced and enacted (Fitrah et al., 2025).

This study focuses on Negeri Sembilan due to the concentration of rural secondary schools that face challenges related to infrastructure, teacher provision and access to digital learning resources. Rather than aiming for representation, this study examines one rural secondary school as a limited case to explore teachers' perceptions of the feasibility of reform. The Versatile Learning Pathway (VLP) model is used as an analytical lens to examine how blended learning can support educational reform in this context. In this study, blended learning is examined as a strategic approach to educational reform in rural schools, while the Versatile Learning Pathway (VLP) model is used as a practical framework to operationalise and assess the feasibility of this approach in the context of rural schools.

This study addresses the following research questions:

1. What are teachers' perceptions of the need for educational reform in the context of rural schools?
2. How do teachers view the strengths, weaknesses, opportunities, and threats associated with the VLP model?
3. What are the challenges and considerations that influence the feasibility of implementing blended learning as part of rural education reform?

LITERATURE REVIEW

Rural Education and Educational Reform

Research on rural education has consistently highlighted challenges related to limited infrastructure, access to qualified teachers, and unequal learning opportunities (Ajit et al., 2022). While some previous studies may not fully reflect recent technological developments, they provide a structural baseline for understanding ongoing constraints. More recent research suggests that despite increased connectivity, rural schools continue to face implementation challenges that require context-specific reform strategies (Bizami et al., 2023).

Blended Learning as a Reform Strategy

Blended learning has been widely discussed as a flexible teaching approach that integrates face-to-face and online learning. International studies show that blended learning can increase student engagement and broaden access when implemented with adequate institutional support (Cubacub & Jimenez, 2025; Wibowo, 2024). However, successful implementation depends on teacher readiness, infrastructure and contextual suitability (Jailani et al., 2025). Figure 1 shows the concept of blended learning as explained by Pachisia (2022). The framework describes how blended learning works between face-to-face learning and online learning.

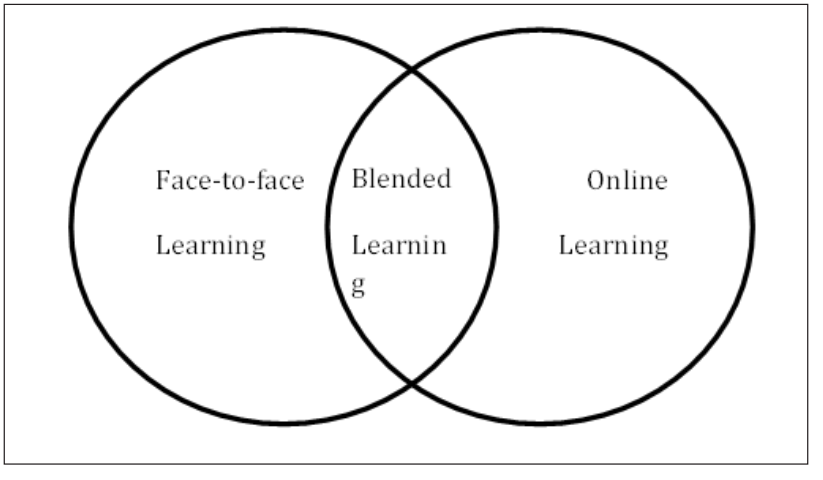

Figure 1. Blended learning (Pachisia, 2022)

Governments and educational institutions have sought to address these disparities through initiatives such as the Teacher Community Digital Learning (Komuniti Guru Digital Learning) platform, which provides online resources and support to teachers (UNICEF, 2020). However, many students and teachers continue to face challenges in effectively adopting digital learning, highlighting the need for blended learning solutions that combine online and face-to-face teaching.

The Need for Education Reform in Malaysia

The Malaysian education system is under increasing pressure to adapt to technological advances and socioeconomic differences. The pandemic has highlighted inequalities between students from different income groups, particularly B40 households, who face greater barriers to online learning than M40 and T20 households due to financial constraints in affording devices and slow internet connection for their children (Aidil et al., 2024).

Several factors underscore the need for education reform, such as addressing learning challenges, improving teacher quality, reducing socioeconomic disparities and increasing access to educational resources (Azman et al., 2024; Özdemir & Göztürk, 2023). Rural schools are particularly affected as geographical and resource constraints often prevent students from accessing quality education, further widening the achievement gap.

Versatile Learning Pathway Model

The Versatile Learning Pathway (VLP) model is a context-specific implementation framework rather than a stand-alone reform policy in this study as shown in Figure 2. The VLP model does not represent a reform policy in itself but serves as a structured framework for implementing blended learning as part of a broader educational reform effort in rural schools.

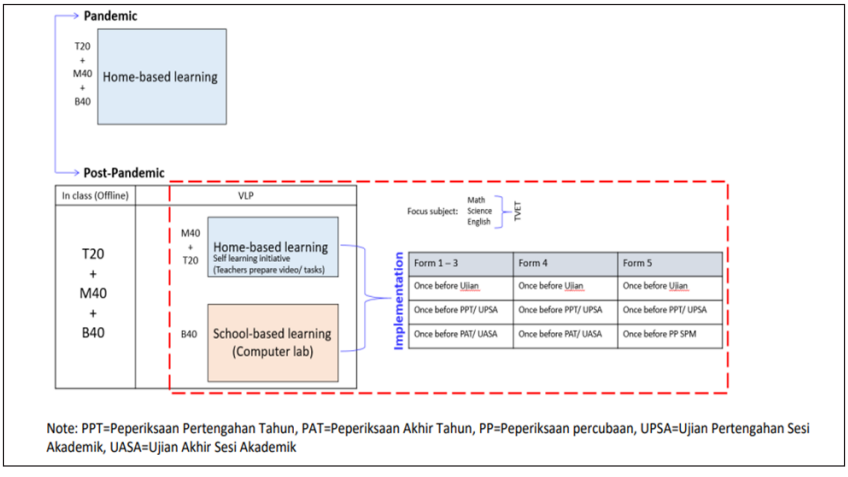

Figure 2. Versatile learning pathway model

It operationalises blended learning by allocating home-based and school-based learning pathways based on students' access to resources and learning needs, with flexibility for teacher discretion. This model aims to support equity, instructional flexibility, and feasibility in rural environments. More importantly, the conceptual structure and practical applicability of the VLP model were reviewed and validated by one rural school principal, two District Education Office (PPD) officials, and one assistant principal to ensure its contextual relevance, administrative feasibility, and alignment with current rural education policies. In this study, the VLP model is treated strictly as an implementation framework rather than a technological platform or policy intervention.

Blended Learning and the VLP Model

Blended learning, which integrates face-to-face instruction with online learning, has emerged as an effective strategy to address these challenges (Al-Mekhlafi et al., 2025; Finnanger, 2024). Studies show that blended learning enhances student engagement, supports diverse learning styles, and allows flexible access to educational resources (Ama, 2025; Aminuddin et al., 2022)

Building on this approach, the Versatile Learning Pathway (VLP) model is designed to provide a context-sensitive solution for rural Malaysian schools. The VLP model combines home-based learning for students with digital access and school-based learning for those with limited resources, ensuring equitable educational opportunities. It focuses particularly on technical and vocational education (TVET) subjects, including mathematics, science and English, aligning with Malaysia's MADANI education concept (Sualman, 2025).

The VLP model incorporates several pedagogical features: flexible scheduling, self-directed learning, personalised group instruction and blended use of digital tools. These features aim to address rural students' socio-economic challenges, reduce classroom congestion and provide targeted academic support. Expert validation has confirmed its potential for improving learning outcomes and promoting technological literacy among both students and teachers.

Strengths and Opportunities of VLP

The VLP model's strengths include promoting equitable access, flexibility in learning and technological readiness while reducing physical congestion in classrooms. It also enables teachers to focus on specific groups of students and provide personalised support, leveraging online resources for knowledge expansion. Opportunities arise in fostering collaborative learning, self-directed study habits, and long-term digital literacy, which are critical for future academic and professional success.

Weaknesses and Implementation Challenges

Despite its promise, the VLP model faces limitations such as a lack of teacher training in technology, resource constraints and increased workload for teachers.

These challenges must be addressed through professional development, adequate funding and careful planning to ensure successful implementation.

Implementation of VLP in Schools

Implementing VLP in rural schools requires a strategic, step-by-step approach. Schools can begin by assessing students' access to digital devices and internet connectivity to determine which students require school-based support versus home-based learning. Teachers should receive training in digital tools, blended learning pedagogy and classroom management for online settings.

Scheduling is critical: VLP sessions can be organised before examinations or assessments, allowing students from disadvantaged backgrounds to catch up, while students with home access can continue self-directed learning. Schools can establish computer labs or learning hubs for students who lack devices at home while also encouraging students with internet access to participate in online components from home.

To enhance engagement, VLP can integrate interactive online platforms, group discussions and project-based assignments, combining them with in-person guidance to ensure student accountability. Collaboration among teachers is also essential, allowing the sharing of lesson plans, digital resources and best practices. Continuous monitoring and feedback, both from teachers and students, help refine the program to suit local needs and improve learning outcomes.

Overall, VLP provides a pragmatic and flexible framework that accommodates diverse student needs while addressing challenges in rural education. Its implementation, if supported with proper resources, training and planning, can significantly improve learning equity, student engagement, and digital literacy in rural Malaysian schools.

METHODOLOGY

Analytical Framework: SWOT Analysis

This study adopts a SWOT analysis framework to examine teachers' perceptions of education reform implementation. Unlike technology acceptance models such as the Technology Acceptance Model (TAM), which focus on individual attitudes toward technology, SWOT analysis allows for an institutional-level diagnostic assessment of strengths, weaknesses, opportunities and threats. This makes it particularly suitable for exploring reform feasibility in resource-constrained rural school settings.

This study employed an exploratory case study design focusing on one rural secondary school in Negeri Sembilan. The case represents the institutional context in which the feasibility of implementing the VLP model as part of education reform is examined.

A total of 18 teachers participated in the study through purposive sampling. Participants were selected based on their teaching experience in a rural school context and their involvement in instructional practices affected by resource constraints.

The study aimed to gain in-depth insights rather than produce statistically generalisable findings, and purposive sampling ensured that the participants possessed the specific expertise required to provide meaningful data. The SWOT framework further enhanced the depth of information obtained, as each participant contributed detailed input across multiple dimensions, including perceived strengths, weaknesses, opportunities and threats associated with VLP implementation.

The small sample size is also consistent with similar studies examining teacher perspectives in rural contexts, which often involve between 10 and 30 participants (Alkaabi et al., 2023; Mohan & Kamrozzaman, 2025). Practical and contextual considerations, such as geographic constraints and access to rural schools, also influenced the sample size, which nevertheless represents a meaningful portion of the teaching population at the selected school. These factors ensure that the data collected is credible and provides valuable insights into the feasibility and challenges of implementing VLP in rural schools.

The survey instrument consisted of quantitative items using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) to measure teachers' perceptions in each SWOT category. Open-ended questions allowed participants to elaborate on their responses and provide additional recommendations or concerns regarding education reform and VLP implementation. The survey was conducted electronically over two weeks, ensuring accessibility and convenience for participants.

Data analysis involved quantitative summary statistics, including frequency distributions and percentages to highlight trends within each SWOT dimension. Qualitative responses were analysed thematically to identify recurring patterns, insights and practical recommendations from teachers. All analyses were conducted using SPSS Version 26. While the study acknowledges limitations related to the small, non-probability sample and a proportion of neutral responses, the methodology provides a robust framework to explore teacher perspectives and identify meaningful implications for education reform in rural schools. Percentages are used descriptively to illustrate response patterns rather than to imply statistical inference. In keeping with exploratory case study conventions, the emphasis is placed on identifying tendencies and areas of convergence or concern among teachers, rather than on magnitude or generalisation.

FINDINGS AND DISCUSSION

The study explored teachers' perspectives on the need for education reform in rural schools with particular attention to the Versatile Learning Platform (VLP) model as a blended learning framework. Although the sample comprised only 18 teachers, this aligns with the case study design, which prioritises in-depth contextual understanding over statistical generalisability. The survey responses provide exploratory insights into teachers' perceptions of educational reform within a specific rural setting. The findings are presented using a SWOT framework to

systematically link teachers' feedback to key features of the VLP model.

As shown in Table 1, teachers' responses regarding the need for education reform in rural schools were mixed. Approximately one-third of respondents (33.3%) agreed that education reform is necessary, indicating recognition of existing challenges and the potential value of introducing changes to improve educational quality and accessibility in rural contexts. In contrast, 27.8% of teachers disagreed, suggesting that some respondents perceive current educational practices as sufficient and may be sceptical about the effectiveness of reform initiatives in addressing rural education issues.

Notably, a substantial proportion of respondents (38.9%) did not provide a response to this question. The high non-response rate may reflect uncertainty, limited exposure to reform initiatives or insufficient familiarity with the concept of educational reform among teachers in rural settings. This pattern highlights the need for further qualitative exploration to better understand teachers' perspectives and underscores the exploratory nature of this case study. Rather than indicating a lack of relevance, the non-responses point to the complexity of the issue and suggest that additional contextual factors may influence teachers' engagement with education reform discussions.

Table 1
The need for education reform in rural schools

School Reform	Percent
Agree	33.3
Disagree	27.8
No response	38.9

Strengths of VLP

This section elaborates on the perceived strengths of online learning within the VLP model, with particular emphasis on three dimensions: equality of learning among students, flexibility in student mobility and the reduction of congestion in learning environments. Table 2 presents teachers' perceptions of the extent to which VLP contributes to equality in learning experiences.

As shown in Table 2, half of the respondents (50.0%) agreed or strongly agreed that the VLP model promotes equality of learning among students, indicating a generally positive perception of its potential to provide more equitable educational opportunities. The blended structure of VLP, which integrates both online and face-to-face components, may support diverse learning styles and individual needs, thereby facilitating broader access to learning resources and instructional support.

At the same time, a notable proportion of respondents (27.8%) selected a neutral response. This suggests that while VLP is perceived as having the capacity to enhance learning equality, its effectiveness may depend on contextual factors such as students' access to technology, digital literacy, and the quality of implementation. The presence of neutral responses highlights opportunities for further refinement and targeted strategies to strengthen equitable learning outcomes within VLP environments.

In contrast, a smaller proportion of teachers (22.2%) disagreed or strongly disagreed that VLP promotes equality of learning.

Table 2
Equality of learning among students

Response options	Percent	Cumulative Percent
Strongly disagree	5.6	5.6
Disagree	16.7	22.2
Neutral	27.8	50.0
Agree	44.4	94.4
Strongly agree	5.6	100.0

Table 3
Flexibility in student mobility

Response options	Percent	Cumulative Percent
Strongly disagree	5.6	5.6
Disagree	5.6	11.1
Neutral	44.4	55.6
Agree	38.9	94.4
Strongly agree	5.6	100.0

This indicates some reservations among respondents regarding the model's ability to fully address disparities, particularly in contexts where technological or infrastructural constraints persist. Overall, the findings suggest that while VLP is viewed as a promising approach for promoting equality in learning, its impact may vary across settings, reinforcing the exploratory nature of this case study.

Table 3 presents teachers' perceptions of flexibility in student mobility within the VLP model. Overall, the responses indicate a cautiously positive perception, with 44.5% of teachers agreeing or strongly agreeing that VLP enhances flexibility in student mobility. This suggests that respondents recognise the potential of VLP to support access to learning across different times and locations, which may contribute to greater adaptability in students' learning experiences.

However, a substantial proportion of respondents (44.4%) selected a neutral response. This high level of neutrality indicates uncertainty regarding the extent to which VLP effectively facilitates student mobility. Such responses may reflect limited direct experience with flexible learning arrangements, variability in implementation across schools, or insufficient clarity regarding how student mobility is operationalised within the VLP framework. The presence of neutral responses highlights the need for clearer guidelines and further exposure to blended learning practices to enable teachers to more confidently assess its impact.

In contrast, a smaller proportion of respondents (11.1%) disagreed or strongly disagreed that VLP supports flexibility in student mobility. Although limited

in number, these responses point to potential challenges, such as infrastructural constraints or unequal access to learning facilities, which may restrict the practical realisation of flexible learning arrangements in certain contexts.

Within this case study, the perceived flexibility of VLP is particularly relevant for addressing socio-economic differences among students. The blended nature of the model allows students from B40 households to access learning resources through school-based facilities, while students from M40 and T20 households may engage in home-based learning. While this flexibility is viewed positively by many respondents, the variation in responses underscores the context-dependent nature of VLP implementation and reinforces the exploratory focus of this study.

Table 4 presents teachers' perceptions of the extent to which the VLP model contributes to reducing congestion in learning environments. The responses indicate a mixed but moderately positive perception. Overall, 44.4% of respondents agreed or strongly agreed that VLP helps reduce congestion in physical classrooms, suggesting that blended learning arrangements may alleviate overcrowding by distributing learning activities across online and face-to-face settings.

At the same time, a considerable proportion of respondents expressed reservations. Approximately one-third of teachers (33.4%) disagreed or strongly disagreed that VLP effectively reduces congestion, while 22.2% selected a neutral response. These findings suggest that the perceived effectiveness of congestion reduction may vary depending on contextual factors such as class size, infrastructure availability, and the degree to which online components are integrated into routine teaching practices.

Despite these mixed perceptions, the results indicate that VLP has the potential to optimise the use of physical learning spaces without compromising instructional delivery. However, the variability in responses highlights the need for clearer implementation strategies and improved communication regarding how blended learning models can be used to manage classroom congestion effectively. Within the context of this case study, these findings underscore that while VLP is viewed as a promising approach, its impact on reducing congestion is not uniform across all settings.

Table 4
Reduction of congestion in learning environments

Response options	Percent	Cumulative Percent
Strongly disagree	16.7	16.7
Disagree	16.7	33.4
Neutral	22.2	55.6
Agree	33.3	88.9
Strongly agree	11.1	100.0

This pattern reflects the transitional nature of reform adoption in rural schools, where perceived benefits coexist with uncertainty arising from uneven access and support structures

Weaknesses of VLP

Despite the identified strengths of the VLP model, teachers also highlighted several weaknesses related to its implementation. Table 5 presents respondents' perceptions regarding the lack of training and experience in technology use among teachers as a potential limitation of VLP adoption. The findings indicate a notable level of concern, with half of the respondents (50.0%) agreeing or strongly agreeing that insufficient training and technological experience constitute a significant weakness. This suggests that teachers' readiness and confidence in using digital tools remain critical factors influencing the effectiveness of VLP implementation.

In addition, 27.8% of respondents selected a neutral response, indicating uncertainty or mixed experiences regarding access to training and familiarity with educational technologies. This neutrality may reflect variations in prior exposure to professional development opportunities or differences in individual digital competencies among teachers. Such variability underscores the uneven nature of technological preparedness within the teaching workforce.

Conversely, 22.2% of respondents disagreed or strongly disagreed that a lack of training and experience is a major weakness, suggesting that some teachers perceive existing training and technological support as adequate. These differing perceptions highlight the context-dependent nature of VLP implementation within this case study. Overall, the findings emphasise the importance of targeted professional development initiatives aimed at strengthening teachers' digital literacy and pedagogical confidence to support the effective integration of VLP in rural school settings.

Tables 6 and 7 further illustrate teachers' perceptions of structural and resource-related weaknesses affecting the implementation of the VLP model. As shown in Table 6, more than half of the respondents (55.5%) agreed or strongly agreed that the number of teachers in schools is inadequate to effectively support online and blended learning.

Table 5
Lack of training and experience in technology use among teachers

Response options	Percent	Cumulative Percent
Strongly disagree	11.1	11.1
Disagree	11.1	22.2
Neutral	27.8	50.0
Agree	27.8	77.8
Strongly agree	22.2	100.0

Table 6
Inadequacy of the number of teachers in the school

Response options	Percent	Cumulative Percent
Strongly disagree	00.0	00.0
Disagree	11.1	11.1
Neutral	33.3	44.4
Agree	22.2	66.7
Strongly agree	33.3	100.0

Table 7
Insufficient access to resources and tools

Response options	Percent	Cumulative Percent
Strongly disagree	00.0	00.0
Disagree	11.1	11.1
Neutral	22.2	33.3
Agree	38.9	72.2
Strongly agree	27.8	100.0

This perception suggests concerns regarding teachers' capacity to manage instructional demands across both online and face-to-face components. An insufficient number of teachers may result in increased workload, larger class sizes, and reduced opportunities for individualised student support, which could negatively influence the quality of learning experiences.

A substantial proportion of respondents (33.3%) selected a neutral response, indicating that while some teachers may acknowledge staffing challenges, these issues may not be uniformly experienced across all contexts within the case study. Only a small percentage of respondents (11.1%) disagreed with the statement, and none strongly disagreed, suggesting limited opposition to the view that teacher numbers may be insufficient.

Similarly, Table 7 indicates that insufficient access to resources and technological tools is perceived as a significant weakness in VLP implementation. A clear majority of respondents (66.7%) agreed or strongly agreed that limitations in access to resources and tools hinder effective teaching and learning. Such constraints may affect students' ability to engage fully with instructional content, complete learning tasks, and participate meaningfully in online or blended learning activities.

Although 22.2% of respondents expressed neutral views regarding access to resources, this may reflect variability in infrastructure availability or differing levels of reliance on digital tools across learning contexts. A smaller proportion of respondents (11.1%) disagreed, suggesting that some teachers perceive existing resources as adequate. Taken together, the

findings from Tables 6 and 7 highlight that staffing capacity and access to technological resources are critical factors influencing the effectiveness of VLP implementation. Within the context of this case study, these challenges underscore the importance of ensuring sufficient teacher support, reliable digital infrastructure, and equitable access to learning resources to maximise the potential benefits of blended learning models in rural school settings.

Opportunities for VLP

The findings indicate several perceived opportunities associated with the implementation of the VLP model through blended learning, particularly in relation to expanded access to knowledge and the potential for more targeted instructional practices. These opportunities reflect teachers' views on how technology integration may enhance learning experiences within rural school contexts.

As shown in Table 8, teachers expressed a strongly positive perception of technology's role in expanding access to knowledge. A substantial majority of respondents (77.7%) agreed or strongly agreed that technology enables greater choice of learning resources, while no respondents expressed disagreement. This suggests a clear consensus that VLP can broaden students' exposure to diverse learning materials beyond those available in traditional classroom settings. The presence of neutral responses (22.2%) indicates some uncertainty, which may relate to differences in technology usage or accessibility across contexts; however, overall perceptions point to technology readiness as a key opportunity within this case study.

In contrast, responses related to teachers' ability to focus on specific groups of students (Table 9) were more mixed.

Table 8
Technology allows for a greater choice of knowledge

Response options	Percent	Cumulative Percent
Strongly disagree	00.0	00.0
Disagree	00.0	00.0
Neutral	22.2	22.2
Agree	44.4	66.7
Strongly agree	33.3	100.0

Table 9
Focus on a group of students

Response options	Percent	Cumulative Percent
Strongly disagree	16.7	16.7
Disagree	11.1	27.8
Neutral	33.3	61.1
Agree	38.9	100.0
Strongly agree	00.0	00.0

While 38.9% of respondents agreed that VLP allows for greater focus on particular student groups, a combined 27.8% disagreed or strongly disagreed, and 33.3% selected a neutral response. This distribution suggests that although some teachers perceive potential for more targeted or personalised instruction, others remain uncertain or sceptical about the practical feasibility of achieving this within existing constraints. The absence of strong agreement further indicates that this opportunity may depend heavily on contextual factors such as class size, teacher workload, and available technological support.

Overall, the findings suggest that VLP presents clear opportunities for expanding access to knowledge through technology, while its potential to support focused instruction for specific student groups remains less uniformly perceived. Within the scope of this case study, these results highlight both the promise of blended learning models and the need for supportive conditions to fully realise their pedagogical benefits.

Table 10 presents teachers' perceptions of students' technology readiness as an opportunity within the VLP model. The distribution of responses indicates a cautious and mixed assessment. The largest proportion of respondents (38.9%) selected a neutral response, suggesting uncertainty regarding the extent to which students are adequately prepared to engage with technology-based learning. This neutrality may reflect differing levels of students' prior exposure to digital tools or the belief that technology readiness is highly dependent on contextual and infrastructural factors.

Approximately one-third of respondents (33.3%) agreed that promoting technology readiness among students represents a valuable opportunity, indicating recognition of the potential benefits of early and consistent engagement with digital tools. These respondents may view technology readiness as essential for supporting students' future academic development and adaptability to digitally mediated learning environments. In contrast, 27.8% of respondents disagreed or strongly disagreed with the statement, suggesting that some teachers question the relevance, feasibility, or effectiveness of emphasising technology readiness, particularly in contexts where access and support may be limited.

Table 10
Technology readiness for students

Response options	Percent	Cumulative Percent
Strongly disagree	5.6	5.6
Disagree	22.2	27.8
Neutral	38.9	66.7
Agree	33.3	100
Strongly agree	00.0	00.0

Despite these mixed perceptions, the findings suggest that technology readiness holds potential as an opportunity within the VLP framework when supported by appropriate infrastructure and instructional strategies. Within the scope of this case study, the varied responses underscore the importance of contextual considerations in determining how technology readiness initiatives are designed and implemented. Rather than representing a universally accepted opportunity, technology readiness appears to be an area that requires targeted support and gradual integration to align with students' needs and school capacities.

Threats and Implementation Challenges

While the VLP model presents several opportunities, the findings also reveal important threats that may hinder its effective implementation in hybrid learning environments. These threats relate primarily to classroom management, workload demands, and challenges in student engagement and monitoring, as reflected in Tables 11-13.

As shown in Table 11, maintaining discipline during VLP sessions emerged as a major concern among respondents. A substantial majority of teachers (66.7%) agreed or strongly agreed that managing student discipline in virtual or hybrid settings is challenging, with more than half (55.6%) expressing strong agreement. This indicates a high level of concern regarding behavioural management when learning activities are conducted partially or fully online. The presence of neutral responses (33.3%) suggests that experiences may vary depending on classroom context, student behaviour, or the level of structure imposed during virtual learning sessions.

Table 12 further highlights workload-related challenges associated with VLP implementation. A majority of respondents (61.1%) agreed or strongly agreed that preparing digital course content requires significant time investment, indicating concerns about increased workload and time management. While 22.2% of respondents selected a neutral response—possibly reflecting variation in digital proficiency or access to ready-made materials—the overall pattern suggests that content preparation remains a demanding task for many teachers. Only a small proportion of respondents (16.7%) disagreed, indicating limited opposition to this concern.

Difficulties in engaging and monitoring students during VLP were also identified as a notable threat (Table 13). More than half of the respondents (61.1%) agreed or strongly agreed that maintaining student engagement and monitoring progress in virtual learning environments is challenging, with 44.4% expressing strong agreement. These findings suggest that teachers perceive reduced visibility and limited real-time interaction as barriers to effective student supervision. Neutral responses (22.2%) again point to contextual variability, while a minority of respondents (16.7%) disagreed, indicating that some teachers may have developed strategies to mitigate these challenges.

Taken together, the findings from Tables 11-13 indicate that while VLP offers flexibility and expanded learning opportunities, its implementation is accompanied by significant pedagogical and operational challenges. Within the context of this case study, these threats underscore the need for structured scheduling, clear behavioural guidelines, adequate preparation time, and sustained institutional support. Addressing these issues is essential to ensure that the benefits of blended learning are not undermined by challenges related to discipline, workload, and student engagement.

Linking Findings to VLP Implementation

Overall, the survey demonstrates that teachers perceive VLP as a promising approach for rural education, with clear strengths in promoting equity, flexibility, and personalised learning. However, successful implementation relies on addressing

Table 11
Maintaining discipline during VLP

Response options	Percent	Cumulative Percent
Strongly disagree	00.0	00.0
Disagree	00.0	00.0
Neutral	33.3	33.3
Agree	11.1	44.4
Strongly agree	55.6	100.0

Table 12
Less time in preparing course content digitally

Response options	Percent	Cumulative Percent
Strongly disagree	00.0	00.0
Disagree	16.7	16.7
Neutral	22.2	38.9
Agree	27.8	66.7
Strongly agree	33.3	100.0

Table 13
Difficulty in engaging/ monitoring students during VLP

Response options	Percent	Cumulative Percent
Strongly disagree	0.0	0.0
Disagree	16.7	16.7
Neutral	22.2	38.9
Agree	16.7	55.6
Strongly agree	44.4	100.0

weaknesses and threats, including teacher readiness, resource availability, and effective classroom management strategies.

The findings suggest practical steps for schools:

- Professional development for teachers to build digital skills and confidence.
- Resource allocation, including access to devices, reliable internet, and learning platforms.
- Structured scheduling to balance home-based and school-based learning.
- Student engagement strategies, such as group work, interactive assignments, and regular feedback.
- Monitoring and support mechanisms, including mentoring or teacher collaboration, to ensure quality learning outcomes.

By aligning these findings with VLP features, the study highlights the model's potential to address key challenges in rural education, while providing actionable insights for policymakers and school administrators to ensure effective and sustainable implementation.

CONCLUSION

This study highlights teachers' perspectives on the urgent need for education reform in rural schools in Negeri Sembilan, Malaysia, with particular attention to the implementation of the Versatile Learning Pathway (VLP) model. The findings indicate that teachers recognise the potential of VLP to promote equitable access to education, support differentiated learning, and provide flexibility in student engagement, particularly in the context of rural schools with limited resources. At the same time, teachers identify challenges such as insufficient training in digital tools, lack of technological resources, and difficulties in maintaining discipline and engagement during online and blended learning.

The insights gained from this study underscore that while the VLP model offers significant advantages, its successful implementation depends on addressing practical limitations and supporting teachers with the necessary skills, resources, and guidance. Importantly, the findings suggest that blended learning through VLP can contribute meaningfully to education reform by providing rural students with opportunities that are more aligned with current technological and pedagogical advancements, helping to bridge gaps in learning outcomes and preparedness.

Implications and Recommendations

The study offers several implications for policymakers, school administrators, and educators. First, teacher capacity building is essential. Training programs focused on digital literacy and effective use of technology in blended learning environments can enhance teachers' confidence and ability to implement VLP successfully. Providing ongoing support, mentoring, and professional development opportunities will also ensure that teachers are equipped to manage challenges such as student engagement and discipline in hybrid learning contexts.

Second, resource allocation must be prioritised. Ensuring that schools,

particularly those in rural areas, have sufficient technological tools, reliable internet connectivity, and adequate staffing is critical for the effective delivery of VLP. Schools should also explore flexible scheduling, teacher assistants, and resource-sharing initiatives to manage workloads and optimise teaching efficiency.

Third, the VLP model demonstrates the potential for equitable and personalised learning. By incorporating both home-based and school-based learning opportunities, it can support students from diverse socio-economic backgrounds and provide pathways for self-directed and focused academic preparation. This approach aligns with broader education reform goals of improving learning outcomes, reducing disparities, and enhancing student readiness for future academic and professional environments.

Finally, fostering a culture of collaboration among teachers can strengthen the implementation of VLP. Sharing best practices, discussing challenges, and co-developing digital teaching resources can enhance the overall effectiveness of blended learning initiatives. Policymakers and school leaders should consider integrating such collaborative structures into teacher development programs and school planning to ensure the sustainability of education reform efforts.

In conclusion, the VLP model offers a promising framework for advancing rural education reform in Malaysia. Addressing teacher preparedness, resource adequacy, and engagement strategies is essential for maximising its benefits, ensuring equitable access to learning, and supporting a more resilient and adaptable education system.

ACKNOWLEDGEMENT

This paper is funded by the Fundamental Research Grant: FRGS/1/2023/SS107/UITM/02/5. The authors would like to thank Universiti Teknologi MARA, the Ministry of Education (MOE) of Malaysia for their consent to conduct the research in SMK Pedas, Negeri Sembilan and all other parties who may have directly or indirectly contributed to this research.

REFERENCES

Abdul Rahman, S. M., Abd Ghafar, A. L., Ahmad Nazri, N. A., Che Balian, S. R., Abdullah, F., Zawawi, S. A., & Ahmad, S. (2025). Exploring the experiences and challenges of science teachers in implementing practical assessment in Malaysian secondary schools. *International Journal of Academic Research in Progressive Education and Development, 14*(4). https://doi.org/[DOI if available]

Aidil, M., Bin Kasdiah, H., Aniq, M., Amdan, B., & Janius, N. (2024). The impact of school infrastructure on learning among rural areas in Sabah, Malaysia. *Kinabalu Multidisciplinary Academic Research Journal, 3*. https://doi.org/[DOI if available]

Ajit, G., Lucas, T., & Kanyan, R. (2022). Design and technology in Malaysian secondary schools: A perspective on challenges. *Malaysian Journal of Social Sciences and Humanities (MJSSH), 7*(1), Article e001219. https://doi.org/10.47405/mjssh.v7i1.1219

Alison, N., & Mugyenyi, E. (2025). Academic shifts in rural secondary schools due to the

COVID-19 pandemic: Impacts on curriculum, pedagogy, examinations, and assessments in Sheema District, Uganda. *International Journal of Multidisciplinary Research and Growth Evaluation, 6*(2), 1145-1159. https://doi.org/10.54660/ijmrge.2025.6.2.1145-1159

Alkaabi, A., Qablan, A., Alkathere, F., Alnaabi, A., Alawaki, M., Alameri, L., & Malhem, B. (2023). Experiences of university teachers with rotational blended learning during the COVID-19 pandemic: A qualitative case study. *PLOS ONE, 18*(10), Article e0292796. https://doi.org/10.1371/journal.pone.0292796

Al-Mekhlafi, A. G., Zaneldin, E., Ahmed, W., Kazim, H. Y., & Jadhav, M. D. (2025). The effectiveness of using blended learning in higher education: Students' perceptions. *Cogent Education, 12*(1), Article 2455228. https://doi.org/10.1080/2331186X.2025.2455228

Ama, M. T. (2025). Benefits and challenges of implementing blended learning: A literature review. *International Journal of Teaching and Learning (INJOTEL), 3*(4).

Aminuddin, A. N., Huzamie, N. H. A., Mohamad, M., & Ani, M. F. (2022). Challenges and benefits of blended learning on tertiary education ESL classrooms: A literature review. *Creative Education, 13*(11). https://doi.org/10.4236/ce.2022.1311235

Azman, N. A., Hamzah, M. I., & Abd Razak, K. (2024). Exploring the impact of digital technology transformation in Islamic education: The Islamic education teachers' perspective. *E-Bangi Journal of Social Sciences and Humanities, 21*(2). https://doi.org/10.17576/ebangi.2024.2102.18

Bizami, N. A., Tasir, Z., & Kew, S. N. (2023). Innovative pedagogical principles and technological tools capabilities for immersive blended learning: A systematic literature review. *Education and Information Technologies, 28*(2). https://doi.org/10.1007/s10639-022-11243-w

Cubacub, P. D. C., & Jimenez, E. C. (2025). The role of blended learning in enhancing student engagement: Evidence from high schools in Micronesia. *International Journal of Didactical Studies*. https://doi.org/10.33902/ijds.202533074

Finnanger, T. S. (2024). Teachers as national curriculum makers: Does involvement equal influence? *Journal of Curriculum Studies, 56*(2). https://doi.org/10.1080/00220272.2024.2307450

Fitrah, M., Sofroniou, A., Yarmanetti, N., Ismail, I. H., Anggraini, H., Nissa, I. C., Widyaningrum, B., Khotijah, I., Kurniawan, P. D., & Setiawan, D. (2025). Are teachers ready to adopt deep learning pedagogy? The role of technology and 21st-century competencies amid educational policy reform. *Education Sciences, 15*(10), Article 1344. https://doi.org/10.3390/educsci15101344

Jailani, N., Rosli, R., & Mahmud, M. S. (2025). Factors influencing mathematics teachers' blended learning: A systematic review. *International Journal of Learning, Teaching and Educational Research, 24*(1). https://doi.org/10.26803/ijlter.24.1.20

Mohan, T., & Kamrozzaman, N. A. (2025). Challenges and adaptations: A case study of teacher experiences with blended learning after the pandemic. *International Journal of Research and Innovation in Social Science, 9*(10). https://doi.org/10.47772/ijriss.2025.910000156

Özdemir, G., & Göztürk, L. (2023). The impacts of digital transformation on education: Teacher perspectives. *The Journal of Academic Social Sciences, 142*(142). https://doi.org/10.29228/asos.69768

Pachisia, J. (2022). The concept of blended learning mode. *International Journal of Home Science, 8*(1).

Reyes, V. C. (2023). What is most important in education reform? The impact of leadership,

innovation and partnerships. *International Journal of Leadership in Education*. https://doi.org/10.1080/13603124.2023.2281353

Sualman, I. (2025). The perception and understanding of Malaysia Madani's core values. In *Studies in Systems, Decision and Control* (Vol. 568, pp. xx-xx). Springer. https://doi.org/10.1007/978-3-031-71526-6_36

Tahir, N. A., Saad, M. A., Razak, R. N. R. A., & Sainun, O. (2025). Pedagogical challenges in rural ESL multigrade classrooms in Malaysia: Teachers' perspectives teaching across grades. *Quantum Journal of Social Sciences and Humanities, 6*(4). https://doi.org/10.55197/qjssh.v6i4.741

UNICEF. (2020). *UNICEF education COVID-19 case study: Malaysia-Empowering teachers to deliver blended learning after school reopening (8 July 2020).* UNICEF.

Wibowo, A. A. (2024). A comprehensive systematic review on effective strategies for student engagement in blended learning environments. *Journal of Blended and Technical Education*, *1*(1). https://doi.org/10.70764/gdpu-jbte.2024.1(1)-08