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Rural students' perspectives of blended learning educational reform in Malaysia

Soo Kum Yoke[1], Nur Izzah Jamil[2], Faizah Abd Majid[3], Cuong Huy Pham[4], Siti Nur Aleesah Mohd Rosley[1]
[1]Academy of Language Studies, Universiti Teknologi MARA, Rembau Campus, Rembau, Malaysia
[2]Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, Rembau Campus, Rembau, Malaysia
[3]Faculty of Education, Universiti Teknologi MARA, Puncak Alam Campus, Puncak Alam, Malaysia
[4]Faculty of English, Ho Chi Minh City University of Economics and Finance, Ho Chi Minh City, Vietnam

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ABSTRACT

Blended learning has become increasingly important in education reform, especially after the COVID-19 pandemic. This case study examines how rural students perceive blended learning towards education reform in Malaysia through a semi-structured interview with 20 students from a selected rural school in Malaysia. Thematic analysis applied to the research found that students had positive views of blended learning, appreciating its flexibility, potential to ensure equitable education, and ability to motivate learning, besides contributing to better educational outcomes and supporting government efforts to reform education. However, students identified several challenges to the implementation of blended learning, such as difficulty focusing on online lessons, unstable internet, and limited comprehension of blended learning. There were mixed responses to the necessity of education reform, with the majority opting for unnecessary or unsure. Hence, this study recommends a versatile learning model integrating online and face-to-face education to better support rural students and ensure an inclusive, equitable, and effective education system.

Corresponding Author:

Soo Kum Yoke
Academy of Language Studies, Universiti Teknologi MARA Cawangan Negeri Sembilan
Kampus Rembau, 71300 Rembau, Negeri Sembilan, Malaysia
Email: sooku607@uitm.edu.my

1. INTRODUCTION

Blended learning, which integrates online and face-to-face instruction, has become a central component of educational reform particularly following the COVID-19 pandemic [1]. In Malaysia, this approach has gained traction as a means to improve educational outcomes especially by enhancing resource accessibility and student engagement [2]. However, rural schools in Malaysia continue to face significant challenges such as limited resources, unstable internet and inadequate teacher capacity which hinder their ability to implement blended learning effectively [3].

Education reform in Malaysia has focused on ensuring equal access to education for all regardless of geographic location. While urban and suburban schools have been able to integrate current learning trends, rural schools remain underrepresented in this progress. The implementation of blended learning is proposed as a strategy to reduce the educational disparities between rural and urban schools introducing technology into the classroom as a tool to bridge these gaps [4]. This process however, depends on factors such as student readiness [5], perception towards change [6], and the engagement with blended learning environments [7], particularly in rural schools where there are limited internet access, infrastructure constraints and poor socio-economic conditions [8].

Therefore, this study aimed to examine rural students' perspectives on the role of blended learning in educational reform in Malaysia. Specifically, it aims to assess students' views on the implementation of blended learning, its benefits and the necessity of education reform. Given their first-hand experience with education, students' insights are invaluable for understanding how reform initiatives are perceived and experienced by those directly affected.

The Malaysian education system must adapt to the rapid growth of technology to improve both quality and equity in education ensuring its relevance in the digital age [9]. However, rural schools continue to lag behind urban counterparts due to limited resources, inadequate infrastructure, teacher shortages and lower student achievements [3], [10]. The Malaysian education blueprint 2013 to 2025 states that the nation's goal is for equal education for all backgrounds [11], but this is hampered by inequities, which foresee a deeper structural problem in the education system. Rural schools face unique challenges including limited access to quality education, extracurricular activities and technological resources, all of which contribute to a disparity in educational outcomes [12]. This inequity affects students' overall academic performance and future prospects.

Blended learning has become increasingly indispensable in teaching and learning in recent times [13], [14]. It has transitioned from traditional teaching to a more flexible learning approach where students have more control over their learning [15], leading to improved student engagement [16], and higher quality learning experience with better outcomes [17]. In 2015, the complex adaptive blended learning system (CABLS) was introduced mainly to explain the dynamic systems and subsystems of blended learning [18]. The framework addressed six components in blended learning: learner, teacher, institution, learning support, technology, and content influence, as shown in Figure 1.

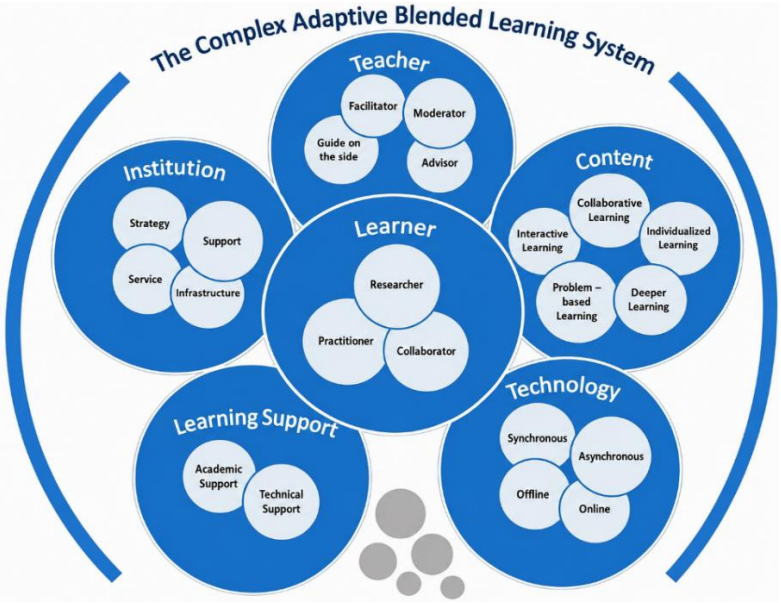

Figure 1. The CABLS framework

The implementation of CABLS has been found to transform students from passive to active learners as they adapt to the different learning environments. Teachers also take on roles like moderators, facilitators, guides and advisors. The content or learning materials with online resources have made the learning experience more dynamic, interactive and enriching [19]. Furthermore, learning support has been described as the support to help learners develop effective learning strategies such as time management and collaborative skills to improve their learning, while technology refers to the provision of digital equipment for blended learning, and institution relates to strategies, policies, and support to sustain blended learning [18]. In short, this framework enables better execution of blended learning giving it better dynamics for students' perspectives on the implementation of blended learning in education reform for rural schools.

Blended learning is critical for the success of educational reforms in Malaysia. This pedagogical approach not only fosters personalized learning pathways but also cultivates critical thinking, collaboration, and independent learning [20]. In this digital era, blended learning has become indispensable as the vehicle to push for education reform for enhancing learning as it not only provides personalized learning pathways but

also fosters critical thinking, collaboration, and independent learning [21]. This approach is in line with Malaysia's education plan for ICT engagement in education [22], particularly in rural areas where the Ministry has taken measures to overcome geographical barriers and limited resources. Research has indicated that when implemented strategically, blended learning can enhance learning outcomes, increase learning motivation and support inclusive learning environments.

Numerous studies have testified to the potential benefits of blended learning but there remain challenges, particularly in rural or remote areas in Malaysia [13], [14], [21]. The disparities between rural and urban schools are real and many rural schools often lack the digital infrastructure required for effective online learning including stable internet access and digital devices [23]. Additionally, many teachers need further training in digital pedagogy to effectively incorporate technology into their lessons [24]. Furthermore, cultural factors such as a preference for traditional teaching methods and a lack of knowledge about blended learning also pose barriers to successful implementation. All in all, if the changes are not executed properly, inequality among students in rural and urban areas will increase. So, for blended learning to function, government support, investments in digital infrastructure and ongoing professional development for teachers are essential [25].

2. METHOD

Using a qualitative lens, this work seeks to understand how students in rural Malaysian schools' experience and construct their meaning of blended learning within education reform context. This is where qualitative design comes in to allow to idealize students lived experiences; such as how it relates to their thoughts or beliefs, what they find difficult and how the schools environment interacts with them. When the focus is on individual perspectives and real lives, numbers do not suffice.

The study was performed at SMK Pedas, Negeri Sembilan, Malaysia. The participants were twenty secondary school students aged between thirteen and sixteen. Prior to their activity, written approval was obtained from the Ministry of Education and written consent data collection from parents. This study employed purposive samples rather than random samples [26]. The researchers had reasoned that the students chosen were particularly well versed in blended learning. They had to know because it was only through direct experience that they could have valuable insights. Participants ranged from a variety of academic backgrounds, genders and types of access to digital devices and internet connectivity, providing a broad view of the challenges and opportunities faced by rural students.

Together, their perspectives offer a more multifaceted view of the opportunities and realities that rural students encounter as they engage in blended learning. Due to the qualitative nature of this research, it is not based on statistical design; hence a small sample size was adequate as described in qualitative methodology. Data saturation can be achieved by sufficient participants. Previous research demonstrates data saturation defined as a consistency across responses or similar experiences in respondents is often reached after 10-12 interviews [27], [28]. Thus, the sample size of 20 respondents is sufficient for this study.

Semi-structured interviews were conducted to ensure data collection remained open-ended in order to pursue particular areas of interest while providing, as much as possible, uniformity across all participants [29]. The respondents were informed of the date and time prior to the interview session held in the school. The interviews were recorded, transcribed verbatim and analyzed using NVivo 12 software, applying Braun and Clarke's thematic analysis framework [30]. This method allowed for the identification and interpretation of key themes across the interview data. NVivo 12 was used for efficient coding, retrieval and visualization of patterns, aiding the analysis process. The following steps were taken to ensure trustworthiness. Double-coding: two researchers independently coded the data to ensure consistency and reliability. Throughout this process, efforts were made to ensure trustworthiness. Member checks were used to validate interpretations and a reflective journal was maintained to track analytical decisions and researcher bias.

3. RESULTS AND DISCUSSION

The results of this study were based on the analysis of the interviews conducted with 20 respondents who were students from a rural school in Malaysia. The purpose was to gather students' perspectives on blended learning as a means for education reform, particularly in rural schools. The first-hand experience of these students and their views would offer invaluable insights into education reform in Malaysia.

3.1. The importance of blended learning for education reform

There were four key themes that emerged from the interview related to the importance of blended learning for education reform. They include a flexible learning environment, a better learner, better education, and equal learning opportunities, as indicated in Table 1. For the theme of flexible learning environment, this was noted as supported by students' enjoyment of blended learning; it allowed them to

follow along at their own pace. We could see this from their responses, "*it allows us to study at home*" and "*I can study anytime and anywhere*," indicating the autonomy it provides. This is very significant in rural areas which often have commuting issues and limited support outside of school, making traditional learning more difficult.

Table 1. Importance of blended learning

Themes	Selected interview excerpts
1. Flexible learning environment	*The reason why blended learning is important is that it allows us to study at home.* *I think blended learning is important because I can study anytime and anywhere.*
2. A better learner	*I think it can help motivate students to learn better.* *To produce talented students, not only good in their academics.* *To eradicate illiteracy and enhance critical thinking among students through the exchange of ideas online.* *I think blended learning is important because it can produce excellent students.*
3. Better education	*It will help B40 students get a better education.* *To modernize the education sector in Malaysia.*
4. Equal learning opportunities	*I think blended learning is important to produce equality in education and to close the gap between T20, M40, and B40 communities in the education system.* *Blended learning is important to produce equal learning opportunities.*

The interview showed that for the second theme a better learner blended learning motivated the students to deepen their motivation. One student stated that, "*I think it can help motivate students to learn better*," two added "*to produce talented students*," three said "*it can produce excellent students*." They also said it can encourage critical thinking and raise engagement, as in "*enhanced critical thinking among students through the exchange of ideas online*." This reflects a conviction that such blended learning encourages critical thinking, which is essential for rural students who may miss out on independent learning opportunities. The third theme, better education, was facilitated by blended learning seen as a means to reform educational quality especially among B40 (lower socio-economic status) students reflected in statements, such as "*It will help B40 students get a better education*," and "*to modernize the education sector in Malaysia*." The expressions demonstrate sentiments of students about the contribution(s) of blended learning in bridging the gap of socio-economic disparity that exist(s) in remote/rural schools and perspectives on redemptive potential activity of blended learning for education reform.

Equal learning opportunities as for the fourth theme students see blended learning as a way to provide equal learning opportunities for everyone. This is reflected from their responses of "*blended learning is important to produce equality in the education*," "*to close the gap between T20, M40 and B40 communities in the education system*," and "*to produce equal opportunity for learning*." This is aligned with the narrative that technology could bridge the divide between T20, M40, and B40 societies. This is more pertinent for schools in rural areas than urban organizations that have several funding avenues. Based to these findings, blended learning can be used as a means of improving rural education inequities by providing flexibility in the system that allows students to become better learners, improve education quality and provide equal opportunities for all students.

3.2. The implementation of blended learning in rural schools

From the interview on the implementation of blended learning in rural schools based on students' educational experience, four key themes emerged. There were a lack of focus, internet issues, a lack of comprehension of the blended learning approach for education reform, and more interesting learning, as shown in Table 2.

Table 2. Implementation of blended learning

Themes	Selected interview excerpts
1. Lack of focus	*I have a problem focusing online, and for subjects that are difficult to cope with, I prefer face-to-face.* *When it lags, I lose focus and interest.*
2. Internet issues	*The problem with blended learning is internet interruption, which distracts my learning.* *I don't have internet at home.* *The use of the internet is not stable and could interrupt the online lesson.*
3. Lack of comprehension of the blended learning approach for education reform	*The problem with students like me is that I need more time to understand the approach.* *The problem is the time needed to understand the process. Exposure to technology is limited because our school is in a rural area, and we receive information on technology rather late.* *The problem is that it will take time for me to understand technology.*
4. More interesting learning	*I think it will make learning more interesting.*

Students thought that with the first theme, lack of focus, implementing a method of blended learning in remote schools would be a challenge. The students were interviewed for their responses. This included an interesting revelation, "*I have trouble focusing when I am online*" and "*when it lags, I lose focus and interest*." This is in fact how technical problems stop students from concentrating during online classes. Let one recall material as well as internet access are important. Indeed, these difficulties stand as very big obstacles to resorts that would usually provide greater volumes on the advancement of more lightly.

The other theme concentrates specifically on internet problems of course in those students' opinions. Therefore, if connectivity problems are not solved then blended learning will be useless. On this point, some students were very outspoken, "*My trouble with blended learning is internet interruption which distracts my learning at all.*" One wrote, "*I don't have internet at home*." It was also noted that unstable connections can break up a lesson online. These replies make the situation clear: on the internet not only does come with it some inconvenience but is fundamentally pervasive itself a huge obstacle in rural schools. Equitable educational opportunities blended learning is recommended but if the internet is in question, or you do not have enough in situ infrastructure, it just will not work. When the digital infrastructure has not been improved, it then must be followed by these actual and lasting modifications.

The third theme emphasizes how students in fact only have greatly narrowed perspective of the mixed method of study. Comments like "*I need more time to understand the approach*," and also the bottom line, "*more time will be necessary for me to understand technology*," together demonstrate that they had rather approach matters in an unintelligible way than take any clear-cut stance. They are not flatly against it, but wish to contemplate its significance. This implies that networks surpass the mere provision of tools while they are not able to use a new tool. This is not because every student cannot adapt to new tools and teaching methods; it is that they need guidance, exposure and structured assistance before they become accustomed with forms like Microsoft Teams or Zoom. Without this preparation, although the theory might hold water, in reality it does not produce any real change.

The fourth, however, is more promising. Many students found that while it felt daunting at the start, later they began to see it as a potential game-changer. Change their own thinking, "*I believe it will make learning more interesting*," said one of the students. That little shift in attitude is key, which tells us that after students have had the chance to attempt blended learning in a supportive environment, they can begin to appreciate its value. There is still doubt and there are still difficulties. But there is also opportunity. This opportunity will enable blended learning to raise morale, expand the informal aspects of study and in general make it all a livelier matter.

3.3. The necessity of education reform

From the students' perspective, it was found that they had a mixed perception of education reform. Out of 20 students, 6 agreed that there was a need for education reform, while 11 disagreed, and 3 were unsure, as shown in Table 3. The students who agreed with education reform gave reasons for their response, stating that it was "*time to use digital textbooks*," "*to support the Ministry of Education*," "*gadgets to improve our lessons*," "*to improve our learning environment*," and "*so we can be motivated to learn*." This shows that the students believed that the transition to digital textbooks can improve the quality of their education. There is a sense of awareness towards the importance of technology and e-resources for their education, and that they need to support the government's efforts through the Ministry of Education. In addition, students also positively commented that education reform can improve the learning environment and increase their motivation to learn.

Table 3. Necessity of education reform

Students' response	Frequency	Reason
Not sure	3	-
No	11	-
Yes	6	1. Time to use digital textbooks
		2. To support the Ministry of Education
		3. We need gadgets to improve our lessons
		4. To improve our learning environment
		5. So, we can be motivated to learn

Nonetheless, most of the students (N=11) did not feel the need for an education reform. There was no reason given to justify their views. This lack of explanation suggests that the students may not fully understand what education reform means, or they may not be familiar with educational policies related to current education practices. Furthermore, there were three students who stated that they were unsure about the education reform initiatives. Overall, while some students see the value of education reform, most are

either uninformed or unclear on its significance. Thus, there remains a gap as to students' understanding of education reform for the advancement of education, particularly in rural areas.

4. CONCLUSION

The purpose of this qualitative case study was to explore rural school students' views toward education reform via the blended learning approach. The study findings found that students have a favorable attitude towards blended learning, especially its flexibility, ability to enhance learning outcomes and potential for promoting educational equity for B40 students. Blended learning, students thought, could inspire learners, help modernize the education system and ensure all students had equal opportunities regardless of socio-economic backgrounds. Yet, students also mentioned major obstacles in putting blended learning into practice, such as problems concentrating during online lessons, unstable internet access and a poor understanding of the blended learning model and education reforms in general particularly for rural schools that lacked facilities and tech.

Students had differing opinions on what kind of education reform was needed. Many were either lukewarm on its importance or did not view the need to do it. Such reluctance is likely a reflection of limited exposure to reform policies, as well as a lack of clear understanding about how those policies will impact their learning experience on a day-to-day basis. If students are not directly involved in conversations of reform, it can be difficult for them to see what it means. On the whole, students feel that blended learning can help kickstart education reform in Malaysia. However, the figures show that potential alone is not enough. Blended learning will remain merely a pie in the sky, if at all, without addressing real implementation bottlenecks such as weak digital infrastructure, limited facilities, bad internet environments. As long as it fails to resolve these issues, blended learning is a play on words rather than solution.

Under the preinclusion of this single paper, anyone who holds a different view may feel free to bring counterexamples to bear as evidence and present them for all see. In addition, the use of blended learning may need to vary according to circumstances especially in rural and remote areas. Also, the online part should add value ideally or else substitute the need for personal aid entirely. With technology off-line (in many rural areas this kind of thing happens often), students and teachers still need to have a formal presence to pull in their thoughts about what they are studying. These recommendations are the sum of the major conclusions of the survey. In sum, students are generally supportive of blended learning as a whole but they possess no idea whatsoever of how it can be applied within overall education reform.

Meanwhile, infrastructure only continues to hamper and varying perceptions over the reform intersect with the students behaviors to reduce its effect further. Clearly there is a need for better understanding of policy and greater student participation when it comes to these recommendations. Especially when these recommendations are consistent with the Malaysian education blueprint 2013-2025 that is all about narrowing the education gap between city and country schools, as a practical move. The result might be improving awareness, involving students in the reform more actively and gradually cultivating a consensus among people itself for reform. This will enable us to patch the educational information gap between town and country, bringing some balance back into learning opportunities.

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AUTHOR CONTRIBUTIONS STATEMENT

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Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Soo Kum Yoke	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Nur Izzah Jamil		✓	✓	✓	✓	✓		✓		✓		✓		✓
Faizah Abd Majid	✓					✓	✓			✓			✓	✓
Cuong Huy Pham	✓						✓			✓			✓	✓
Siti Nur Aleesah Mohd Rosley	✓	✓				✓	✓			✓				✓

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study.

ETHICAL APPROVAL

This study was reviewed and approved by the Universiti Teknologi MARA Research Ethics Committee under approval number REC/09/2025 (ST/MR/169).

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author, [SKY], upon reasonable request.

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BIOGRAPHIES OF AUTHORS

Soo Kum Yoke has a doctorate in Applied Linguistics from Universiti Putra Malaysia. She is an associate professor at the Academy of Language Studies, UiTM Negeri Sembilan. She has taught a number of English courses at the diploma and degree levels. She is actively involved in writing and has written several books including Grammar for Basic Learners, Baby steps to Job Seeking, and The English Story. Some of her research articles have also been published in local and international indexed journals as well as conference proceedings. She can be contacted at email: sooku607@uitm.edu.my.

Nur Izzah Jamil is a senior lecturer at the Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA (UiTM), Malaysia. She holds a Ph.D. from Universiti Tun Hussein Onn Malaysia. Her research interests include statistical modeling, time series analysis, categorical data analysis, and data mining. With over a decade of teaching experience in the field of statistics, she has contributed extensively through publications in research journals, articles, and book chapters. She is also actively involved in Invention, Innovation, and Design (IID) activities. Additionally, she has completed professional training at the Institute for Medical Research, under the Ministry of Health Malaysia. She can be contacted at email: nurizzah@uitm.edu.my.

Faizah Abd Majid is a professor in TESL and Adult Education. She has researched and published extensively in teaching and learning in higher education and teacher education. Currently, she has been involved in flexible learning pathway projects that lead towards investigating blended, hybrid and hyflex learning. A strong advocate for life wide learning, she is currently working on the university's learning management system (LMS) that supports hybrid delivery. She can be contacted at email: faiza404@uitm.edu.my.

Cuong Huy Pham is Dean of the Faculty of English at the University of Economics and Finance, Ho Chi Minh City, Vietnam. He obtained his Ph.D. in Applied Linguistics from Massey University, New Zealand. His research interests include affective factors in language learning and teaching, language learning spaces, and curriculum development. He can be contacted at email: cuongph@uef.edu.vn.

Siti Nur Aleesah Mohd Rosley is currently pursuing a master's degree in Applied Language at Universiti Teknologi MARA, Rembau, Malaysia. Her research focuses on English language teaching in rural context with particular interest in blended learning approach. She aims to contribute to the advancement of effective teaching strategies for secondary school learners. She can be contacted at email: aleesahrosley@gmail.com.