Blended Learning Practices in Malaysia Higher Education: A Review

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Abstract
Blended learning is an innovative strategy for providing engaging and meaningful learning experiences to satisfy student's technology expectations in the highly dynamic digital environment. Despite the fact that there are many studies on higher education instruction abroad, only a small number of blending learning studies have been done in Malaysia higher education. Recognizing the emerging execution of this learning approach, this meta-analysis study serves the purpose of exploring the concepts, the argument, previous studies, the advantages as well as the disadvantages on blended learning practices in Malaysia higher education from 2013 to 2021. The analysis conducted found 10 studies that fit the descriptions. Findings revealed four themes in explaining blended learning practices in Malaysia higher education. Most universities and respondents involved in previous studies are public universities and undergraduate students respectively. This study also examines the methodology used by the previous studies and the main findings of each study conducted. Although this is a relatively small study, it highlights the need for a more different research design to examine the level, frames, and outcomes of blended learning practices in Malaysian universities.

Introduction

For the last two years, the Covid-19 Pandemic has forced millions of people worldwide to be under lockdown conditions, hundreds of thousands have been infected, and thousands have lost their lives throughout the world (Ismail et al., 2020). Since the worldwide lockdown has caused a significant interruption toward the students' learning process, the United Nations Educational, Scientific and Cultural Organization (UNESCO) attempts to confront the school closure consequences and ensure that learning activities are not substantially interrupted (Annamalai, 2021). In Malaysia, Former Prime Minister Tan Sri Muhyiddin Yassin has instructed all educational institutions to practice home-based learning to deliver good quality education by reducing interruption throughout the pandemic outbreak. This statement can be supported by Kamal et al. (2020), it is anticipated that education institutions in Malaysia will transition from physical classroom learning to a virtual learning environment. Therefore, educators will be

required to adopt an online learning environment, regardless of whether or not they are comfortable with technological resources (Al-Kumaim et al., 2021).

During the Covid-19 transition, social and economic life components would gradually return to normal, with certain public-health precautions staying in force while individuals gradually resumed their pre-pandemic activities. Ramasamy, Shahzad and Hassan (2021) emphasized that many higher education institutions in Malaysia, including public universities and private universities, have finally decided to embrace their teaching and learning strategy using a blended learning practice. Blended learning is a teaching and learning method that combines conventional face-to-face education with technologies, the internet, and remote learning (Rahman et al., 2015). When technology is integrated with conventional instructor-led teaching practices, blended learning provides students with greater flexibility to personalize their educational learning experiences. Several recent research studies have been carried out specifically to outline the blended learning practices in diverse circumstances, as well as its advantages and disadvantages. As Win and Wynn (2015) mentioned, the technology's development has gradually become a strategic advantage for higher education, which can strengthen the students' accessibility and elevate their active learning level throughout the blended learning process. Students can be more independent and autonomous throughout their studies, which allows them to progress at their own speed (Namyssova et al., 2019).

However, there is an emerging concern about the blended learning consequences on both students and lecturers and educational institutions. The transition from traditional to virtual classroom setting can be challenging such as the absence of appropriate infrastructure and technological access, lack of institutional conceptualization, as well as a low employee competency to interact with blended learning practices. It raises the likelihood of misinterpreting the blended learning strategy (Mirriahi et al., 2015; Sanchez-Gordon & Luján-Mora, 2018). Molina-Cristobal et al. (2021) further pointed out that blended learning could make student engagement more challenging since students must navigate between pedagogical modalities and take a more proactive role throughout their education. It has been observed that different individual qualities, such as low self-efficacy, low resilience, and poor self-regulation, make interaction in blended learning problematic. These claims can be contended by Eliveria et al. (2019), higher education is implementing hybrid learning to strengthen pedagogy and increase students' educational objectives. Consequently, a hybrid learning environment allows higher education institutions to incorporate students' perspectives throughout their curriculum while also providing students with the space and flexibility to participate in productive learning activities (Hughes, 2007).

Many previous research studies on different teaching and learning practices at Malaysia higher education institutions have been explored in various contexts, such as conventional classes (Teoh et al., 2013; Hassan et al., 2014; Subramainan & Mahmoud, 2020) and online learning (Buttner & Black, (2014); Al-Rahmi et al., 2018; Chung, Subramaniam and Dass, 2020). However, there are limited studies regarding blended learning practices in the Malaysia higher education context. Based on the search, ten studies were published on blended learning practices in Malaysia. Therefore, this metanalysis was conducted to explore various aspects of the main themes, type of higher education institutions, research methods, and main findings of

past studies on blended learning practices in Malaysia higher education. Based on these aspects, this study was conducted to address the following research questions:

Research Question 1: What are the main themes of studies related to blended learning practices in Malaysia's higher education?

Research Question 2: What types of Malaysia's higher education have been chosen to research blended learning practices?

Research Question 3: What research methods are used to analyze blended learning practices in Malaysia's Higher Education?

Research Question 4: What are the study's main findings on blended learning practices in Malaysia's Higher Education?

Literature Review

According to Adams et al. (2020), the Malaysia Education Blueprint 2013-2025 was introduced in 2012 to transform the Malaysian educational system. The blueprint outlines an educational perspective across 11 functional shifts that emphasize leveraging information and communications technology (ICT) can largely improve overall student learning quality. Consequently, the adoption of technology in teaching and learning activities has widely captivated the educators' attention in Malaysia's higher education institutions (HEIs) (Azizan, 2010). Mahsum, Baharum and Yahya (2021) further pointed out that much higher education has embraced information and communication technology (ICT) alternatives such as blended learning to facilitate continuous teaching and learning activities that are no longer limited to the conventional classroom. In recent years, the practice of blended learning in higher education and its accompanying research has grown rapidly, as evidenced by Drysdale et al. (2013), Maroco et al. (2016), Adams et al. (2020), Fisher, Perényi and Birdthistle (2021). Concerning the greater effectiveness of blended learning, Smith and Hill (2019) stated that blended learning practices are more productive when compared to conventional class or online learning because it can provide students with more individualized learning opportunities. Furthermore, preliminary findings from previous studies have been shown by Edward, Asirvatham and Johar (2018) and Ghazal, Aldowah and Umar (2018), who further claimed that the adoption of blended learning enhances learners' learning satisfaction and participation since it has a significant influence on students' consciousness of the instructional methods and educational atmosphere. Besides, numerous research studies such as Vaughan (2014), Gao, Jiang and Tang (2020), Riwayatiningsih and Sulistyani (2020) and Li et al. (2021) highlighted the tremendous benefits of blended learning have resulted in a significant shift regarding program delivery method in higher education. Shifting the focus of education from teaching to learning has improved students' learning experiences, resulting in a significant influence on course satisfaction and student engagement.

A blended learning approach to delivering the academic program is becoming more common in higher educational (Edward et al., 2018; Anthony Jnr & Noel, 2021). When implemented

competently and effectively, blended learning practices can provide a sustainable learning experience that is practical in nature, thereby engaging and motivating students. Findings of Gawande (2015) and Lwoga & Komba (2015) discovered that student learning engagement and experience are improved due to the implementation of blended learning practices, which positively influences students' perceptions of the educational environment and pedagogical practices. In emphasizing, Sarıtepeci and Çakır (2015) and Manwaring et al. (2017) further claimed that increasing students' engagement has been identified as a key objective in blended learning curriculum planning to assess the overall learning and teaching quality. Dickfos, Cameron, and Hodgson (2014) can support this statement, who discovered that blended learning had positively influenced the evaluation flexibility of student achievement and educator reflection. At the same time, the findings were consistent with Pellas and Kazanidis's (2015) studies, which discovered that a blended learning curriculum engaged more participants in virtual interactive activities when compared to conventional learning. As a result, students become more focused on the learning process, which helps them achieve their academic objectives more effectively. Therefore, it is critical to understand students' behaviour, sentiments, and cognition to facilitate their engagement in blended learning environments (Molina-Cristobal et al., 2021).

Regardless of the advantages discussed above, Maarop and Embi (2016) claimed that the problems encountered while doing blended learning practices included technology resources, technical assistance, and student involvement. In the same vein, Namyssova et al. (2019) have compiled a list of issues that contribute to the adoption of blended learning such as lack of educational institution support, huge class numbers and insufficient computer skills. These can be categorized as several critical factors influencing students' performance and learning outcomes throughout blended learning settings. Furthermore, the underpinning research hypothesis of Al-Ayed & Al-Tit (2021) can further claim that blended learning practices in education were shown to be significantly influenced by the student, institutional, and learning factors. It was determined that the implementation of blended learning practices relies not only on the technology aspect but also on the individuals involved. In emphasizing, Abbacan-Tuguic (2021) highlighted technological lapses, including the lack of educational instruments and unstable internet access, limiting the successful deployment of blended learning adaptation. It also claimed that students demonstrated a favourable attitude and a modest willingness to practice blended learning in education. In contrast, there is a negative association between students' attitudes and readiness to participate in the blended learning setting. In order to enhance students learning process, Muhammad et al. (2020) pointed out acknowledging the difficulties and problems that students may face has become increasingly crucial as blended learning practices continues to play a predominant position in higher education settings. Therefore, Al-Ayed & Al-Tit (2021) concluded that identifying the important elements regarding encouraging or hindering blended learning practices has significant implications as it assists educational institutions evaluate the teaching-learning process in the future.

Research Methodology

This study implemented a meta-analysis design, represented as a secondary study approach, wherein the researchers identified, explored, and interpreted all relevant studies to a topic area in order to develop an overall effect estimate for a large number of studies in the population (Webster & Watson, 2002; Davis et al., 2014; Çoğaltay & Karadağ, 2015). In order to narrow the scope of previous studies on blended learning practises in Malaysia higher education, one database was chosen, namely Google Scholar, since it had the potential to enhance the chances of identifying relevant literature. As Gusenbauer (2019) indicates, Google Scholar consists of 389 million data represented as the most extensive academic search engine presently. Keywords such as "blended learning in Malaysia higher education" were used to search the relevant articles. The following criteria were used in selecting the papers for analysis are (i) identifying the area of blended learning practices in higher education; and (ii) research data collection among higher education students. Consequently, a total of ten articles that matched the established criteria were discovered. A list of research articles relevant to blended learning practises in Malaysian higher education that has been thoroughly reviewed to address predetermined research questions is shown in Table 1.

Table 1: Summary of Research Articles related to Blended Learning Practices in Malaysia's Higher Education

Researchers/ Year	**Journal/Proceedings/Issues**	**Target groups**	**Sample Size**
Thang et al. (2013)	International Education Studies	Undergraduate students	198
Khodabandelou et al. (2014)	Contemporary Educational Technology	Undergraduate students	348
Win & Wynn (2015)	Journal of Institutional Research South East Asia	Undergraduate students	51
Masrom et al. (2019)	Universal Journal of Educational Research	Undergraduate students	317
Zakaria et al. (2019)	Universal Journal of Educational Research	Undergraduate students	205
Adams et al. (2020)	Malaysian Journal of Learning & Instruction	Undergraduate and Postgraduate students	462
Lim et al. (2020)	International Journal of Learning and Teaching	Undergraduate students	497
Rahman et al. (2020)	Universal Journal of Educational Research	Undergraduate students	6

Sidek et al. (2020)	Universal Journal of Educational Research	Undergraduate students	168
Mohd Nasir et al. (2021)	Asian Journal of University Education	Undergraduate students	70

Findings

The study's findings were divided into four parts, each of which addressed a different research question. The first section describes the characteristics of research themes in Malaysia higher education related to blended learning practices. The second section determines the type of universities that have been chosen for the research of blended learning practices in Malaysia higher education. The third section explores the research methods used to research blended learning practices in Malaysia higher education. Lastly, the main findings of the relevant research are presented in the final section.

Research Question 1: What are the main themes of studies related to blended learning practices in Malaysia's higher education?

The analysis revealed three themes in the studies related to blended learning practices in Malaysia higher education, including determining the effectiveness of blended learning, identifying students' engagement levels, exploring antecedents and consequences of blended learning, and exploring the relationship between variables. Table 2 depicts the relevant themes of the studies.

Table 2: Themes and Frequency of Study

Themes	**Frequency**	**Studies**
Determine the effectiveness of blended learning	4	Thang et al. (2013)**;** Win & Wynn, (2015)**;** Zakaria et al. (2019)**;** Rahman et al. (2020)
Identifying student's engagement levels	1	Adams et al. (2020)
Exploring antecedents and consequences of blended learning	2	Masrom et al. (2019)**;** Mohd Nasir et al. (2021)
Exploring relationships between variables	3	Khodabandelou et al. (2014)**;** Lim et al. (2020)**;** Sidek et al. (2020)

Research Question 2: What types of higher education institutions have been chosen to research blended learning engagement in Malaysian higher education?

According to the research findings, only two types of higher education institutions were included: private universities and public universities. Furthermore, four samples selected private universities as the sampling frame for their study, whereas five out of ten samples chose public universities as the sampling frame for their research. Last but not least, only one sample chose the private and public universities as the sampling frame. Table 3 lists the various sorts of higher education institutions that have taken part in the research.

Table 3: Types of Higher Education Institutions Involved in the Studies

Types of Universities	Frequency	Studies
Private Universities	4	Win & Wynn, (2015); Masrom et al. (2019); Lim et al. (2020); Mohd Nasir et al. (2021)
Public Universities	5	Khodabandelou et al. (2014); Zakaria et al. (2019); Rahman et al. (2020); Sidek et al. (2020)
Private and Public Universities	1	Adams et al. (2020)

Research Question 3: What are the research methods that have been used to research blended learning practices in Malaysia Higher Education?

According to the analysis conducted, two research approaches were used: quantitative and qualitative. Regarding the study's design, the questionnaire served as the major research instrument with nine samples involved, while one sample chose semi-structured interviews in their data collection process. Table 4 shows the approaches and designs of the studies.

Table 4: Approaches and Design of the Research Studies

Methodology	Design	Frequency	Studies
Qualitative	Semi-structured interview	1	Rahman et al. (2020)
Quantitative	Questionnaire	9	Thang et al. (2013); Khodabandelou et al. (2014); Win & Wynn, (2015); Masrom et al. (2019); Zakaria et al. (2019); Adams et al. (2020); Lim et al. (2020); Sidek et al. (2020); Mohd Nasir et al. (2021)

In terms of the study sample, three sample groups were chosen from relevant research, namely pre-university students, undergraduate students, and postgraduate students. Two study samples were selected from pre-university students. Seven samples of the study chose from

undergraduate students. Only one was selected from undergraduate students and postgraduate students, as depicted in Table 5 below.

Table 5: Sample of the study

Sample	Frequency	Studies
Pre-university students	2	Masrom et al. (2019); Zakaria et al. (2019)
Undergraduate Students	7	Thang et al. (2013); Khodabandelou et al. (2014), Win & Wynn, (2015); Lim et al. (2020); Rahman et al. (2020); Sidek et al. (2020); Nasir et al. (2021)
Undergraduate and Postgraduate Students	1	Adams et al. (2020)

Research Question 4: What are the main findings from the studies on blending learning practices in Malaysia's higher education?

Table 6: Main Findings and Research Objectives of the Related Studies

Studies	Research objective	Main findings
Thang et al. (2013)	This research determined the application of blended learning strategies in teaching English for academic purposes to nine classes of students at the University Kebangsaan Malaysia's Faculty of Social Sciences.	The results indicated that students favoured this strategy, despite having difficulty connecting to the internet due to slow internet access.
Khodabandelou et al., (2014)	This research investigated the moderating effects of gender on the association between the community of inquiry and perceived learning in blended learning educational contexts in Malaysian higher education institutions.	The findings revealed statistically significant differences between the two classes of undergraduate students (males and females).
Win & Wynn, (2015)	This research investigates the students' perceptions about blended learning practices implemented in their classrooms and provides information on a wide range of learning and teaching initiatives	The results indicated the majority of students were uncomfortable with online activities and still favoured conventional classrooms, despite the fact that blended learning has shown the

	utilized in engineering and law subjects.	ability to increase the efficacy and efficiency of constructive learning experiences.
Masrom et al., (2019)	This research examines the satisfaction among students in the blended learning approach at one of the institutions in Malaysia using a survey study.	The findings discovered that students were satisfied with the blended learning approach used at their institution.
Zakaria et al., (2019)	This research investigates the effectiveness of learning through MOOCs in blended learning environments and conventional classrooms among undergraduate students.	The results indicated that both types of teaching, particularly MOOCs as part of blended learning and regular classrooms, benefitted students' academic accomplishments.
Adams et al. (2020)	This research examines students' cognitive, emotional, and behavioural involvement in a blended learning style of education and evaluates their engagement according to demographic parameters in Malaysian higher education institutions.	Their cognitive, emotional, and behavioural engagement mechanisms indicated high engagement levels in students' blended learning activities in local and private higher education institutions.
Lim et al., (2020)	This research determined whether students' SRL abilities significantly impact their online learning satisfaction in blended learning courses and whether there are differences in online learning satisfaction across different academic disciplines.	The findings revealed a statistically significant difference in OLS level between students in the Health & Medical science discipline and students in the Innovation & Technology discipline.
Rahman et al., (2020)	This research aims to investigate the perceived advantages of blended learning in the context of writing learning among university students in Malaysia.	The results concluded that the students' written communication capabilities, self-esteem, and enthusiasm for writing are all improved as a result of the blended learning approach.
Sidek et al. (2020)	This research identifies several variables that might impact student acceptance of MOOCs in terms of	The results concluded that joy, control, perceived usefulness (PU), and curiosity were all shown to be significantly

	immersion (IM) and intention to use (BIU) using HMSAM.	associated with IM. In addition, BIU was shown to be significantly associated with PU, joy, and curiosity.
Mohd Nasir et al. (2021)	This research identifies several factors such as perceived ease of use (PEOU), facilitating conditions and interaction that correlate with students' satisfaction with using a learning management system (LMS) - UNIEC Virtual in blended learning courses at UNITAR.	The findings concluded a statistically significant relationship between facilitating conditions, perceived ease of use, and interaction on students' satisfaction with using a learning management system (LMS).

Discussion

This research revealed four major themes that emerged from the studies related to blending learning practices in Malaysia higher education. The themes were to determine the effectiveness of blended learning, identify student engagement levels, explore antecedents and consequences of blended learning, and explore the relationship between variables. As for the type of university involved in the studies, five samples have chosen public universities as the sampling frame for data collection such as Thang et al. (2013), Khodabandelou et al. (2014), Zakaria et al. (2019), Rahman et al., (2020) and Sidek et al., (2020). While four samples collected their data from private universities such as Win & Wynn (2015), Masrom et al. (2019), Lim et al. (2020) and Nasir et al. (2021), and only one sample from Adams et al. (2020) have chosen both public universities and private universities as the sampling frame for data collection. The finding also revealed that most past studies employed a quantitative approach rather than a qualitative approach. Only one sample used a qualitative approach, whereas nine samples used a quantitative research methodology to study blended learning practices in Malaysia higher education. One study that used a qualitative approach was Rahman et al. (2020). In contrast, the nine studies that used a quantitative were recorded as Thang et al. (2013), Khodabandelou et al. (2014), Win & Wynn (2015), Masrom et al. (2019), Zakaria et al. (2019), Adams et al. (2020); Lim et al. (2020); Sidek et al. (2020) and Mohd Nasir et al. (2021).

Furthermore, most previous studies targeted undergraduate students as the research sample, followed by pre-university students as well as undergraduate and postgraduates students in higher education institutions. Seven studies utilized undergraduate students as a sample of higher education institutions, namely Thang et al. (2013), Khodabandelou et al. (2014), Win & Wynn (2015), Lim et al. (2020), Rahman et al. (2020), Sidek et al. (2020) and Nasir et al., (2021), this was followed by two research studies using a sample of higher education institutions pre-universities students which were Masrom et al. (2019) and Zakaria et al. (2019). In comparison, only Adams et al. (2020) employed undergraduate and postgraduates students as a research sample throughout the studies. Both researchers, such as Thang et al. (2013) and Rahman et al. (2020), discovered that blended learning in English learning languages has

significantly improved students' learning experiences while also addressing their linguistic and behavioural requirements. The students believe that this strategy has provided them with the opportunity to study in a flexible and supportive learning environment, which has positively impacted their writing skills. As a teaching and learning instrument, Zakaria et al. (2019) found that MOOCs have the potential to be more effective than conventional classroom settings for today's generation, which is comprised of digitally aware natives. This finding can be contended by Win & Wynn (2015), who indicated that most students felt uncomfortable with online activities and preferred conventional classrooms, despite the fact that blended learning has shown a capability to enhance the efficacy and efficiency of learning experiences.

The findings also revealed that all previous studies related to blended learning practices in Malaysia higher education have achieved their education objectives. Masrom et al. (2019) highlighted a few critical considerations who discovered that student satisfaction with all factors was relatively high across the range. In addition, the research also found that students were dissatisfied with both the lecturer interaction and the information they received throughout the blended learning study. This is most probably due to the educators' lack of expertise and experience in implementing blended learning strategies. Adams et al. (2020) further pointed out that students in both public and private higher education institutions demonstrate a high level of engagement in blended learning initiatives, as shown by their cognitive, emotional, and behavioural engagement processes. Several factors such as perceived ease of use, facilitating conditions and interaction consist of positive monotonic association towards the students' overall satisfaction with LMS throughout the blended learning practices, which in turn had a significant impact on their satisfaction with blended learning courses (Mohd Nasir et al., 2021). Therefore, it is critical to understand student satisfaction in order to complement course elements and create a more favourable blended learning environment.

The study of Khodabandelou et al. (2014) revealed that although there was consist of statistically significant differences between the two categories of undergraduate students, the proportion of the difference between the groups was insufficient to moderate the relationship between community of inquiry (CoI) components and perceived learning in undergraduate blended learning environments. Sidek et al. (2020) further study MOOCs' acceptance factor and effectiveness in the blended learning environment for Computer Architecture and Organization course at UPSI. It discovered that the variables of joy, control, perceived usefulness, and curiosity were all significantly associated with immersion (IM). Similar results were obtained using the same bivariate correlation study, which revealed that perceived usefulness, joy, and curiosity were all significantly associated with intention to use (BIU). Consequently, MOOCs are an effective platform for blended learning, but their efficiency depends on the optimal learning distribution between online and face-to-face modes. From the practical perspective of Lim et al. (2020), the students' self-regulated learning (SRL) was found to affect students' online learning satisfaction in blended learning courses. Therefore, higher education should be improved facilities and infrastructure in both traditional and virtual learning settings, ultimately resulting in improved quality of blended learning delivery.

Conclusion and Recommendation

In conclusion, the meta-analysis results indicated that studies related to blended learning practices in Malaysia higher education are still limited compared to foreign studies and other study disciplines in Malaysia. As the adoption of blended learning practices in Malaysia higher education has progressed rapidly with the primary objective of enhancing teaching and learning outcomes. Blended learning is characterized by a transformative perspective that allows institutions to embrace technology while simultaneously supporting a community of inquiry and facilitating active learning for educators, students, and higher education institutions. Future studies should consider mixed-method research design to obtain a new understanding from respondents to strengthen the research outcome. Second, more future studies in private universities, college universities, and colleges could be involved to refine the blended learning practices and fully comprehend this approach in more extensive settings. Furthermore, existing research has only been based on cross-sectional data; thus a longitudinal study would be sufficient for gaining new insight into the subject. Finally, future meta-analyses for blended learning practices study should also consider other databases such as Science Direct in journal selection to minimize the possibility of failing to identify all published journals in the related area.

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