Assessing Institutional Readiness for Blended Learning Management and Implementation in Malaysian Higher Education

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Abstract

This paper aimed to examine the readiness of Malaysian Higher Education Institutions (HEIs) to improve teaching and learning activities in Higher Education Institutions (HEIs) by emphasizing on the practice of good governance by Ministry of Higher Education (MOHE) by emphasizing on the practice of good governance by Ministry of Higher Education (MOHE) through the deployment of National E- Learning Policy (DePAN 2.0). The policy incorporates six domains: infrastructure and infostructure, governance, e-content, blended learning, professional development and enculturation through a strategic e-learning framework to facilitates HEIs towards globalised online learning. The discussion is further broadened into exploring the four concepts of good governance: accountability, participation, persistency, transparency and its governing influence towards the application of six domains from DePAN 2.0 as the mechanism to constantly monitor and assess the effectiveness of blended learning management and implementation in HEIs. A comparative analysis approach is used to study existing literatures, models and conceptual frameworks involving blended learning and governance in Malaysian Higher Education context contributing to key findings suggesting student acceptance and lecturer adoption significantly impact institutional readiness in blended learning implementation and effective governance is critical for promoting greater student acceptance and faculty adoption of blended pedagogies. This study findings have profound impacts for policymakers and higher education institutions (HEIs), emphasizing the necessity for strategic interventions to enhance governance practices, support faculty development, and foster a conducive learning environment to fully leverage the benefits of blended learning in Malaysia's higher education landscape.

Keywords: Higher Education Institutions, corporate governance, blended learning management and implementation

Abstrak

Kertas kerja ini bertujuan untuk mengukur tahap kesediaan institusi dalam melaksanakan pembelajaran bersepadu bagi meningkatkan aktiviti pengajaran dan pembelajaran di Institusi Pengajian Tinggi (IPT) dengan menekankan amalan tadbir urus yang baik oleh Kementerian Pengajian Tinggi (KPT), dalam penggunaan Dasar Pembelajaran e-Negara (DePAN 2.0). DePAN 2.0 merangkumi enam domain iaitu infrastruktur dan infostruktur, tadbir urus, kandungan e-pembelajaran, pembelajaran bersepadu, pembangunan profesional dan penghayatan bagi mengawal selia dan memantau IPT melalui rangka kerja pembelajaran e-strategik ke arah pembelajaran dalam talian global.

Perbincangan seterusnya diperluaskan untuk mengenal pasti empat konsep tadbir urus yang baik iaitu akauntabiliti, penyertaan, ketekalan, ketelusan dan pengaruhnya terhadap penggunaan enam domain daripada DePAN 2.0 sebagai mekanisma untuk sentiasa memantau dan menilai keberkesanan pelaksanaan pembelajaran bersepadu. Jelaslah bahawa penerimaan pelajar dan penerimagunaan pensyarah menyumbang kepada kesediaan institusi dalam pelaksanaan pembelajaran bersepadu untuk meningkatkan aktiviti pengajaran dan pembelajaran di kalangan IPT di Malaysia. Oleh itu, amalan tadbir urus yang baik berdasarkan garis panduan enam domain daripada DePAN 2.0 adalah penting untuk memastikan peningkatan penerimaan pelajar terhadap pembelajaran bersepadu dan penerimagunaan pensyarah dalam penggunaan pembelajaran bersepadu untuk tujuan pengajaran.

Kata kunci: *Amalan tadbir urus, Institusi Pengajian Tinggi, pengurusan dan implementasi pembelajaran bersepadu*

INTRODUCTION

The launch of Malaysian Higher Education Blueprint 2015 – 2025 certainly has inspired the Higher Learning Institutions in Malaysia to initiate the implementation of blended learning through its 9th shift which has clearly stated the need for globalised online learning (MEB, 2012). Malini (2016) opinionated that MOHE discovered the most suitable approach to face the 21st century challenges is through extreme and intense technology advancement in teaching and learning activities. In fact, the rapid changes and constant rising of competition in higher education be it globally or at neighbouring countries had intensified the need for Malaysia to cater the right resources for students and staffs, administrative and academicians through cutting edge technologies for teaching and learning purposes, creating new platform for an access into higher education opportunities and to address the disadvantage equity gap in community.

Fundamentally, blended learning is an integration of conventional face to face learning and e-learning approach through selected and appropriate learning models. (Horn 2011; Kaur, 2013). Blended learning enables students to engage in self-directed learning through online platforms, thereby reducing the necessity for face-to-face interactions with lecturers. As a result, the physical presence of lecturers is no longer always required, allowing for greater flexibility in instructional delivery. On the other hand, Guzer & Caner (2014) believes that blended learning mode incorporates the best features between classroom and online interaction in a most profound way as this platform alleviates personalised learning and encouraged thoughtful reflection. It has also been found that many HEIs in Malaysia have implemented blended learning as an effective learning approach (Haron, 2013), nonetheless previous studies have proved that the adoption rate is still low among the academicians which affects the effectiveness of those implementations on a great deal because if the lectures themselves refuse to incorporate blended learning as one of the active teaching tools; it is almost impossible for the students to be encouraged, moved or motivated to do so.

Through her paper also, Haron (2013) has identified some factors influencing the adoption of blended learning for teaching purposes to provide insights on the attitude of academicians towards adopting of blended learning in their teaching activities. Thus, the problem of low adoption in blended learning among the lecturers must be addressed as it will impact institutions' readiness on implementation of blended learning to improve teaching activities in HEIs. According to the data provided in the Malaysian Higher Education Blueprint 2015-2025 (2012), internet usage in Malaysia has increased to 67%, positioning the country as the 7th highest in Asia. This high connectivity level has catalysed the adoption of online learning as a tool to enhance access and diversify teaching and learning activities in HEIs.

Recent studies have further documented the evolving practices of blended learning in Malaysian Higher Education, foregrounding the importance of robust infrastructure and innovative pedagogical strategies (Chan et al., 2022). DePAN was first introduced in April 2011, as an initiative to support a strategic and quality e-learning framework in national HEIs and expected to operate in three separate phases; 1st (2015), followed by the 2nd phase (2016-2020) and the 3rd one (2021-2025) which were to be concurrent with the implementation phases of Malaysian Higher Education Blueprint 2015-2025. Later, the revised and updated DePAN 2.0 (2021), appeared to be more orchestrated towards supporting and achieving the vision and mission of globalised online learning; while the original one in 2011 focused primarily on the quality of education delivery, the current one has branched out to education innovation, branding of

Malaysian education and minimizing the cost in teaching and learning. Both the Higher Education Blueprint and the National E-Learning Policy 2.0 can only be made to success and reality with a systematic implementation and efficient monitoring through a proper governance approach. Ideally, when the topic of governance gets involved then it is only fair to further understand its concept and application in the context of HEIs in Malaysia.

The transformation of HEIs in Malaysia have taken progressive steps since the introduction of Industrial Master Plan 3 (IMP) in 2006 whereby it was noticeable back then itself that the sector of higher education in Malaysia will engineer the future of economic growth and development of the country by 2020 (Anuar 2015). He further explained that the number of international student enrolment in Malaysia can be predicted to reach 200,000 by 2020 and it is possible if the respective HEIs enrich themselves with cutting edge technologies to become quality higher education providers. One of the strategies would be the embedment of blended learning in teaching and learning activities to produce quality and initiative-taking learners. While there are various models for the implementation of blended learning across the world, the success of any models is very much dependent on the preparedness and acceptance of the students. As such, students' acceptance of blended learning will influence the institutions' readiness on implementation of blended learning to improve learning activities in HEIs.

Despite all the collective efforts made or to be made by the HEIs, without a proper exercise of good governance through National E- Learning Policy (DePAN 2,0) and its six domains as the mechanism to constantly monitor and assess the effectiveness of blended learning management and implementation among the higher education institutions in Malaysia, the globalised online learning can never be a reality. This research adds value to the existing literature by focusing on the measurement of institutional readiness for implementing blended learning in Malaysian Higher Education Institutions (HEIs). It specifically examines this readiness through the lens of good governance, as mandated by the Ministry of Higher Education's (MOHE) National E-Learning Policy (DePAN 2.0).

A comprehensive governance approaches involves introduction, implementation and revision of numerous policies and establishing the right mechanism is crucial to continuously monitor and evaluate the compliance and adherence of the involved parties. While the governance approach in academia varies across geography and culture however a common factor for any educational governance practice to be effective is through academic output that is much complex and wider. As said by Henkel (2017), governance is shared and shaped through the various relationship between the states, market and academic institution and as such; the deterioration of academic autonomy and the rising of academic privatisation; HEIs literally have turned into either partial or full corporate entities. The governance of public and private higher education in Malaysia is a dual system since they are bounded under two different legislations respectively. While public universities are typically federal statutory bodies; semi-entities with some level of autonomy and under the purview of MOHE, and are also expected to comply to the circulars, directives, policies and regulations from all other relevant ministries in Malaysia; on the other hand all Private Higher Education (PHEIs) in Malaysia are established under Companies Act 1965 within the governance of MOHE but via Private Higher Education Institution Acts 1996 (Act 555). Notwithstanding PHEIs are also govern by Malaysian Qualification Agency (MQA) for their institutions and academic programmes approval, monitoring, accreditation, and audit.

The four basic elements of good governance chose to be discussed in this paper was introduced by Asian Development Bank (2005); (i) accountability, (ii) participation, (iii) predictability and (iv) transparency which was extracted from online. Accountability: When the public officials or the person in charge were the representative who is responsible and responsive on behalf of the entity or government body they represent and in measuring the performance of the people and the policies implemented to ensure the standard were adhered and complied. Participation: The activities created or executed in order to enhance the purpose of the policies, programmes and structures which has been introduced and implemented; and review, revise, upgrade those policies, programmes and structure to ensure it benefits all stakeholders. Predictability: Where a fair, consistent, well-defined and well- understood of rules, regulation, policies and laws are applied and imposed to all HEIs; notwithstanding legal and regulatory framework, consistent public policies and good practices to ensure uncertainty is not prevalent in

governance practice. In case of changes, a proper responsive framework is established to portray a consistent and careful governance practice, with a very minimal modification or novel approaches, steps and solutions. Transparency: To ensure accurate and timely information are made available to public and stakeholders on the outcome or changes of existing government rules, regulations and decisions or implementation of new, future policies, rules and decisions which is crucial for stakeholder's decision making.

While previous studies have examined blended learning adoption and governance separately (e.g., Haron, 2013; Kaur, 2013), this study integrates both perspectives by analysing how governance structures impact institutional readiness for blended learning in Malaysian HEIs. Unlike prior work that focuses primarily on technological infrastructure or student attitudes, this research provides a governance-oriented framework that considers policy compliance, faculty adoption, and student engagement holistically. By aligning our findings with the six domains of DePAN 2.0 (2021), we offer a structured approach for policymakers and educators to enhance blended learning implementation through improved governance mechanisms.

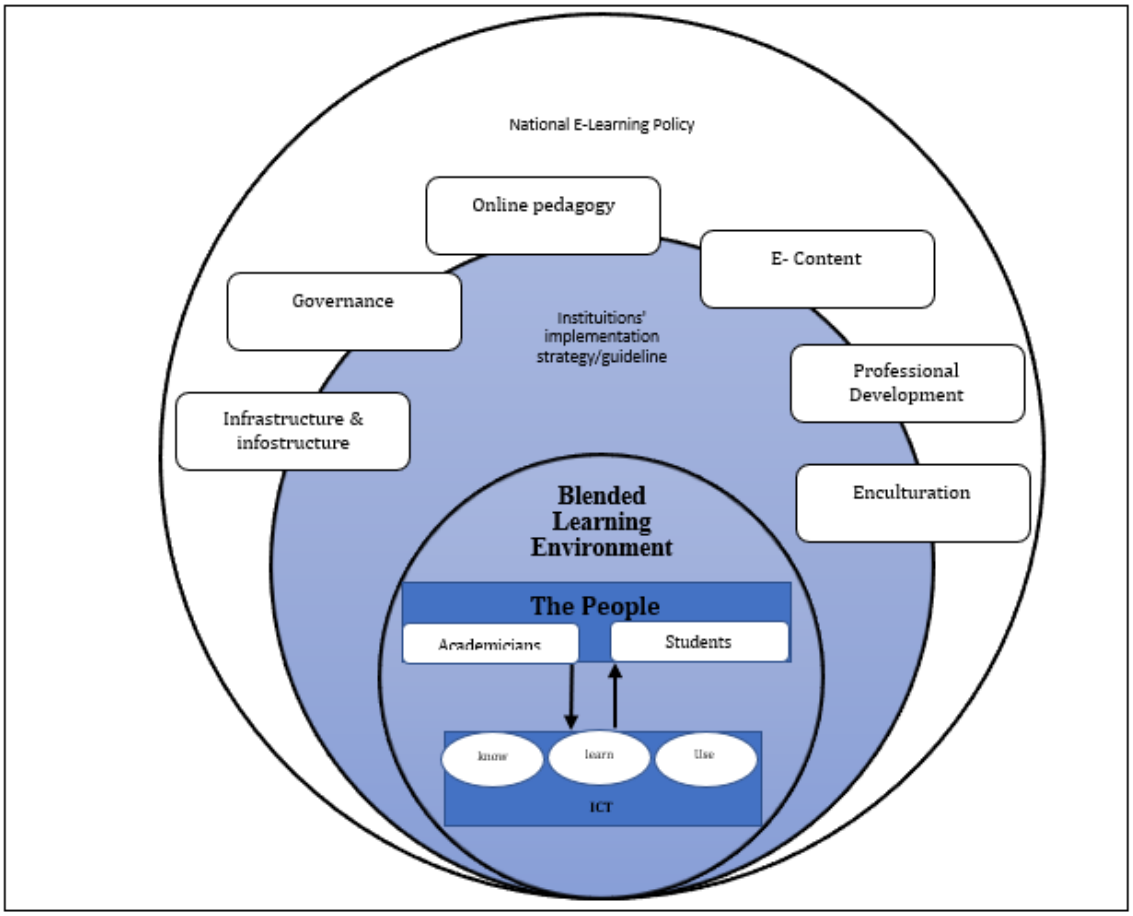


Figure 1: Conceptual Model of blended learning illustrating the governance of National E – Learning Policy to improve teaching and learning activities (modified from Anuar Yosuf et.al (2015)

LITERATURE REVIEW

During the last few decades, the growing interest in the concept of governance has been quite apparent and according to Tiihonen (2004) it integrates a long history of rules, laws, authoritative structures, hierarchical governing, and power. Interestingly the concept of governance is dynamic and worthy of analytical and systematic empirical study because it has three faces: the good, the bad and the ugly (Farazmand, 2012). It is so vague, yet identifiable as the secret of its own success (Schneider, 2004), whereby Kohler – Koch (2006) has stated that the effort to comprehend the concept of governance have always been a constant confusion. Richard (2002) referred government as a structure of bureaucracy, legislation, control, regulation, and dominance and governance as an instrument for non-regulatory policies which was designated to focus on proposed, developed, and implemented cooperation with the stakeholders (Jordan, 2003).

Governance was seen as an interactive mediation between structures, processes and traditions in ascertaining how power and responsibilities are employed, how decision making is done through the role of public and stakeholders (Graham, 2003). Thus, governance had always been as a platform to address issues and conflicts pertaining to the influences, decisions, responsibility and accountability. This eventually leads to the discovery of many governance theories and models which flows within the concept of accountability, participation, predictability, and transparency as found by Asian World Bank (2005). According to Farazmand (2015), putting in place the good governance is essential to facilitate an institution or any bigger context, its policy and guideline framework, their active and non-active stakeholders, and the implementation of the governing structure within the limits. Which means in this paper the practice of good governance through accountability, participatory, predictability and transparency of the National E-Learning Policy DePAN 2.0, (2021) will also be examine in measuring the institutions readiness on the implementation of blended learning in higher education.

It is important to look at each domain from DePAN 2.0 (2021) for its concept and perspectives to identify the mechanism in monitoring and accessing the institutions' readiness and effectiveness of blended learning management and implementation. The infrastructure and infostructure domain's requirement of standard good practice has formed the institution's readiness based on three different phases; whereby at least by 2020 (2nd phase) institutions should accommodate a 10Gbps broadband service with 90% WIFI coverage with an average of 2 Mbps for student, plus providing e-learning 2.0 platform with massive open online courses (MOOCs) and mobile technology made available. In this phase, 95% of students and 100% of lectures are expected to own a computer, notebook, tablet, or smartphones to be able to access or contribute the e-content development by 75%. Second domain, governance focused on policies updated by each HEIs according to the current demand, acts and laws pertaining to the use of recent technologies, ethics, and copyrights. To further discuss, E- learning domain means the use of internet technologies to enhance knowledge and performance based on three basic requirements; network, computer with internet connection and widest learning accesses (Rosenberg, 2001), while Shoniregun (2003) defended that e-learning will not materialize by just uploading any notes online, but with the teaching materials which adds value for the delivery of knowledge. This was completed by Agboola (2005) when it was concluded that e-learning is an act of using computers and internet connections to share knowledge with learners; expected to be effectively enhance the performance of both teacher and the learner through the information and communication technologies utilized for teaching and learning purposes.

Other significant aspects included comprehensive e-learning action plan, leadership, enhancement on latest skills for both institutional and national level, collaboration and people networking both locally and internationally plus an allocation of 1% from annual operating budget from respective institutions for the e-Learning. While the third domain, online pedagogy required 50% of all programmes offered in the institutions' to be controlled in the form of blended learning, at least 10% was to be dedicated for e-assessment; and MOOC was also made to be offered progressively. E- Content was interesting both as a domain and as a requirement under DePAN 2.0 whereby it requires all HEIs to develop original content for 25% of the courses offered and slowly progressed to 100% by 2025. On the professional development aspect, 75% of staffs needed to have knowledge in Technological Pedagogical Content Knowledge (TPCK),

a basic skill of e-learning to successful learning practitioners. At the same time, 15% of academic staff expected to have advanced e-Learning skills with 5% carrying out research and development related to e-learning plus 100% of students with the ability to control and use the content of e-learning. Finally, the last domain which is enculturation required 50% of lecturers and 25% of students as the contributors of e-learning contents with recognition at national level by MOHE and other external recognition.

Hence, this prompted to further understand blended learning and its evolution, with Masrom (2008) claiming that the concept of blended learning was predated by the web- based learning approach which focused on physical classroom based instructional via internet to improvised numerous modes of content and instructional delivery which were combined into e-learning and classified as 'blended learning'.

Undeniably, many HEIs in Malaysia have been progressively embedding e-learning in their teaching and learning activities to substitute traditional learning for a modern and interesting learning approaches. In some studies, blended learning was defined as an integration of conventional classroom teaching with a combination of media, tools and teaching methods in web-based environment settings (Sabri at al., 2010). Even then, Zhang (2010) has discovered, blended learning is never a replacement to traditional face to face teaching and learning but rather an additional superior that holds the benefits of both traditional face-to-face classrooms learning with an exceptional online learning experience. In some studies, blended learning was defined as an integration of conventional classroom teaching with a combination of media, tools, and teaching methods in web-based environment settings (Sabri at al., 2010). Even then, Zhang (2010) has discovered, blended learning is never a replacement to traditional face to face teaching and learning but rather an additional superior that holds the benefits of both traditional face-to-face classrooms learning with an exceptional online learning experience. Garrison & Kanuka (2004) pointed in their study that blended learning is a new dimension for HEIs to revolutionize the teaching and learning experience to a higher and greater level but fail to understand that it is never going to be an effective learning if the students were not prepared, guided or anywhere near accepting the blended learning methods.

Besides, when Melton et al. (2009) observed increase of satisfaction level in students with blended learning in comparison to conventional face to face classroom learning; Guzer et. al. (2014) who agreed with the fact that blended learning increase students' critical thinking skills, but at the same time still confused with the information and learning experiences received during blended learning compared to the one received via conventional classroom learning. This obviously will reduce and affect the acceptance level of the students on the implementation for blended learning. Some of the drawback in blended learning which can cause loss of interest or low acceptance from students were discussed by Graham (2004) when he proposed that HEIs should not completely opt to online or blended learning but to maintain the conventional classroom setting so that students and lecturers are still connected as classroom community. In blended learnings, it's understandable if students cannot develop the sense of belonging and relate in a group identity due to non-physical appearance of the members. Likewise, Okaz (2015) also believed that student acceptance of blended learning can be affected due to the independent role it requires from them compared to when guided personally by lecturers in classroom settings and encouraged, motivated by peers.

Since blended learning requires continuous modification of course contents, lack of IT skills and technology deficiencies might affect the acceptance level of the students for blending learning. According to Okaz (2015), those might not only affect the interest of students to use blended learning, but it can also be a major estrangement on the adoption of blended learning among the lecturers. Sabri (2010), exposed those technical issues like slow internet accessibility and difficulties in managing, uploading, and downloading content might leads to high level of intolerance among students and lecturers contributing to not accepting or adopting blended learning. When it comes to academician's adoption on blended learning, literature observed some major barriers, like doubting the quality of the education when e-learning or blended learning is implemented (Inman, 1999), and some other similar issues encountered by the students, such as loss of connection and monitoring. Some attempt to further discover the adoption of blended learning among academicians revealed, that by making them understand the benefit behind teaching and learning via blended learning approaches the chances to encourage them to adopt it in their teaching is high.

Although numerous studies have explored blended learning adoption among students and faculty (Garrison & Kanuka, 2004; Okaz, 2015), limited research has examined the role of governance in ensuring institutional readiness. Previous research has largely focused on either the technological aspects (Masrom, 2008) or the pedagogical benefits of blended learning (Güzer & Caner, 2014), but there is a lack of empirical work that assesses how governance frameworks, such as DePAN 2.0 for example influence readiness. Furthermore, while governance models have been discussed in broader education policy studies (Henkel, 2007; Farazmand, 2015), their specific application to blended learning remains under-explored. This study addresses these gaps by providing an overview of how governance practices impact blended learning readiness in Malaysian HEIs.

While previous research has primarily focused on the adoption and effectiveness of blended learning, this study uniquely examines how the six domains of DePAN 2.0 interacts with key principles of good governance to influence successful implementation. In addition, it examines the critical roles of student acceptance and lecturer adoption in determining the success of blended learning initiatives and how these factors contribute to overall institutional readiness and underscores the necessity for targeted strategies to enhance both. Therefore, this paper is anchored in the specific context of Malaysian Higher Education Institutions (HEIs), offering valuable insights into the challenges and opportunities inherent within this national education system. In particular, the study directly examines the influence of policies and governance such expanding how these strategic frameworks shape the implementation of blended learning initiatives. It combines multiple theoretical frameworks, including the Asian Development Bank's definition of good governance and established models of blended learning, to construct a comprehensive conceptual model. This integrated approach provides a robust foundation for analysing the interplay between governance principles and blended learning practices. In essence, this paper contributes original insights by integrating the often-overlooked perspectives of good governance, student acceptance, and lecturer adoption within the context of blended learning management and implementation in Malaysian HEIs.

METODOLOGI

This paper employs a deductive approach, starting with established theories of good governance and blended learning to develop a conceptual model explaining HEIs readiness for blended learning implementation in Malaysia. A systematic literature review identifies key themes related to blended learning models, good governance principles in the Malaysian context; analysed using thematic analysis, identifying key factors and relationships. The resulting theoretical synthesis integrates the identified themes with the existing literature, creating a comprehensive framework for understanding HEIs readiness. While this approach provides a strong foundation for future empirical studies, limitations include a reliance on existing literature and the potential for biases in the selection and interpretation of sources exists.

The conceptual framework developed for this study is grounded in the governance of National E-Learning Policy (DePAN 2.0) to enhance the implementation of blended learning in Malaysian Higher Education Institutions (HEIs). The framework is originally adapted from Anuar Yusof et al. (2015) and integrates multiple dimensions influencing blended learning environments. The model systematically illustrates the interaction between governance mechanisms, institutional strategies, ICT integration, and stakeholder engagement to foster an effective blended learning ecosystem. Although the study does not explicitly adopt a single named framework, it employs an integrated conceptual model that combines:

(i) Good Governance Framework (Asian Development Bank, 2005): Aligning institutional governance with transparency, accountability, participation, and predictability to drive policy effectiveness.

(ii) Technology Acceptance Model (Davis, 1989): Implicitly integrated through the consideration of student acceptance.

(iii) Lecturer adoption of blended learning and Blended Learning Models: Drawing from existing blended learning theories to structure the interaction between pedagogy, technology, and governance.

By integrating these theoretical underpinnings, the conceptual framework provides a structured approach to evaluating institutional readiness for blended learning. It also offers policymakers and HEIs a governance-oriented lens to assess and enhance policy compliance, infrastructure development, faculty engagement, and student learning experiences.

The study also employs a Conceptual argument construction approach primarily to develop a governance-oriented framework for evaluating the readiness of Malaysian Higher Education Institutions (HEIs) in implementing blended learning. It is on the premise that effective governance is a critical determinant of blended learning success. While previous studies have examined governance and blended learning separately, this research constructs a theoretical model that aligns governance principles with blended learning implementation. This approach is particularly relevant to this study, as it enables the integration of governance principles with blended learning implementation strategies, thereby addressing key gaps in the literature.

FINDINGS & DISCUSSION

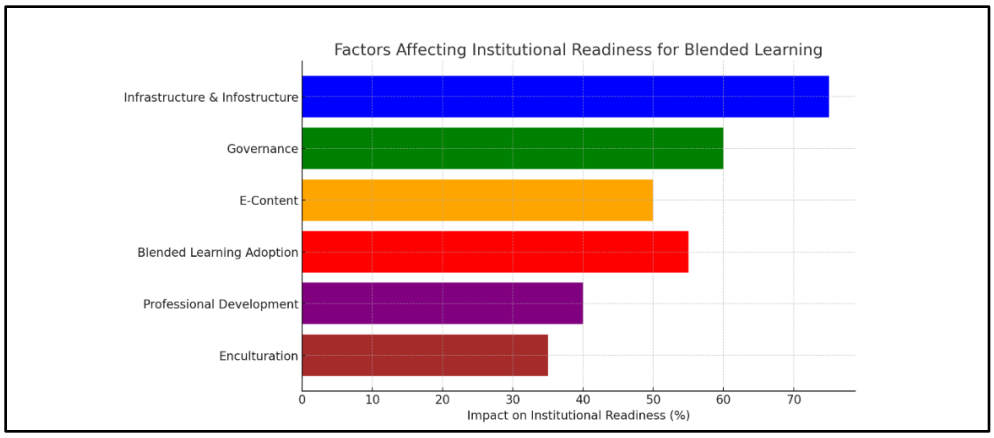
Based on the rigorous literature support, it is prevalent that the acceptance level of the students and adoption level of the academicians prove to play a vital role in influencing the readiness of institutions on implementation of blended learning in HEIs. It is important to mention here that the readiness of an institution in the implementation of blended learning does not only depend on the brick and stone which is basically the facilities, and the technology advancement needed to ensure that the fundamentals are adequately fitted. Regardless of the learning modes available recently from e-learning to MOOCs, learning has always been an unexplainable connection between lecturers, students and lastly followed by classroom or technology; as a linkage between instructor, learner, classroom and technology (Kim, 2007).

Thus, this paper must agree that the students' acceptance of blended learnings in their learning activities influences the institutions' readiness on implementing blended learning to improve teaching and learning activities in HEIs. Zhu (2009) has discovered that despite endless announcement and reminders there are still students who are less participative or does not participate at all in blended learning and the reason can be various from technical glitch to fear against new approaches or utter dislikeness towards new methods of learning exposures.

Table 1: Institutional Readiness for Blended Learning Management and Implementation

Readiness Factors	Description	Challenges Identified
Infrastructure & Infostructure	Availability of broadband, Wi-Fi, and MOOCs	Limited access in some institutions
Governance	Compliance with DePAN 2.0 policies	Inconsistent enforcement
E-Content	Development of digital learning material	Low contribution from lecturers
Blended Learning Adoption	Faculty and student participation rates	Resistance due to traditional teaching
Professional Development	Training for lecturers in digital pedagogy	Insufficient incentives for faculty
Enculturation	Acceptance and integration of blended learning	Cultural and institutional inertia

Table 2: Bar Chart representing the factors affecting institutional readiness for blended learning; shows the impact percentages of governance, infrastructure, e-content, professional development, and stakeholder engagement.



The bar chart illustrates the key factors influencing institutional readiness for blended learning, measured in terms of impact percentage. The six identified factors: Infrastructure & Infostructure, Governance, E-Content, Blended Learning Adoption, Professional Development, and Enculturation; play crucial roles in shaping the effectiveness of blended learning management and implementation in higher education institutions (HEIs).

Infrastructure & Infostructure demonstrates the highest impact on institutional readiness, reaching approximately 75%. This finding aligns with Ministry of Higher Education Malaysia (2021), which emphasizes the need for high-speed internet connectivity, advanced Learning Management Systems (LMS), and mobile-friendly platforms for successful blended learning adoption. Institutions must upgrade internet infrastructure and ensure technological accessibility to facilitate seamless digital learning experiences (Chan et al., 2022).

Governance, the second highest impact highlights the importance of regulatory frameworks and institutional policies. According to Ma'arop & Embi (2016), strong governance ensures compliance with accreditation standards, quality assurance, and faculty training policies, which are essential for sustainable blended learning implementation. Both Blended Learning Adoption and E-Content significantly impact institutional readiness at somewhat same level. Blended learning adoption requires faculty and student engagement, digital literacy programs, and structured orientation initiatives (Azizan, 2010). E-content development is equally critical, as well-structured digital learning materials enhance knowledge retention and student participation (Wong et al., 2016).

Professional development plays a key role in faculty preparedness for blended learning. Research by Goh & Wong (2014) suggests that continuous training in instructional design and digital pedagogy is essential for effective content delivery. Enculturation, the lowest-ranked factor reflects the cultural and organizational shift needed for blended learning integration, including faculty mindset transformation, student adaptability, and leadership commitment (Ministry of Higher Education Malaysia, 2011). While blended learning has been widely promoted, challenges such as faculty resistance remain significant barriers (Goh & Wong, 2014).

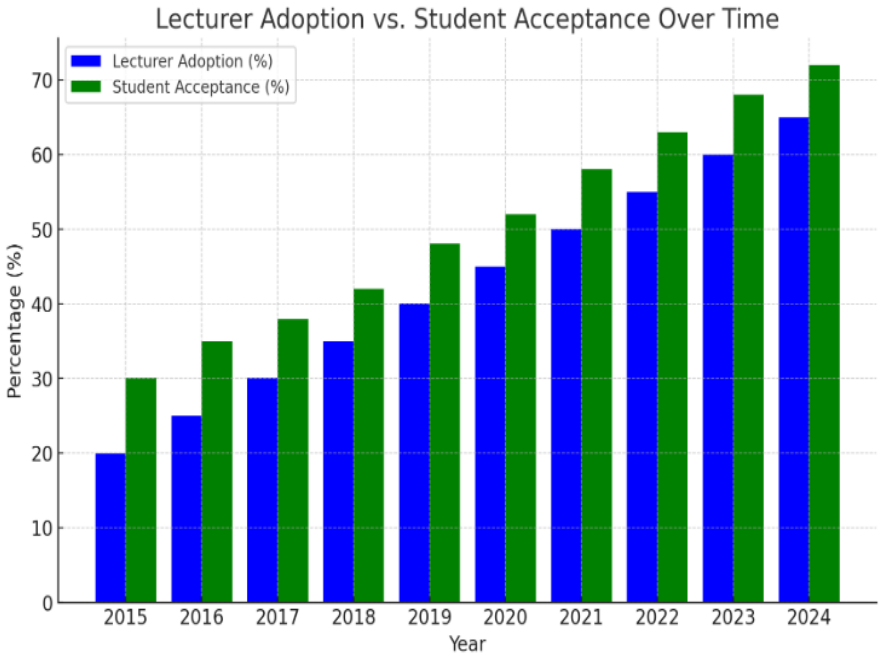
A study on the adoption of blended learning among Malaysian academicians conducted in 2011 revealed that one of its influencing factor is known as perceived usefulness which means they adopt blended learning when they could only see the personal and professional benefits of implementing it in their teaching and learning process, thus enforcement through policies and regulation shall do its policing here especially emphasizing on governance, professional development and enculturation. Apart from that it has also been discovered that another factor contributing to the adoption of blended learning in their teaching activities was the learning goal of individuals, whereby the adoption is set to fulfil the personal target in self- learning (Haron, 2009), supported by Paarsuraman (2000) who said that those who are ready for new technology

most likely would adopt the blended learning in teaching which can be encouraged further by more exposure towards the benefits of online pedagogy and e- content.

Table 3: Student Acceptance & Lecturer Adoption of Blended Learning

Stakeholder	Positive Factors	Challenges
Students	Flexibility, increased learning access	Technical issues, lack of motivation
Lecturers	Enhances teaching strategies, efficiency	Resistance to change, lack of IT skills

Table 4: Visualization highlighting the correlation between lecturer adoption rates and student acceptance levels over time.



The graph presents lecturer adoption and student acceptance of blended learning from 2015 to 2024, measured as a percentage. The findings reveal a steady increase in both lecturer adoption (blue) and student acceptance (green) over time, with student acceptance consistently exceeding lecturer adoption rates in most years.

Trends in Lecturer Adoption and Student Acceptance shows that in 2015, lecturer adoption started at approximately 15%, whereas student acceptance was around 25%, indicating an early preference for blended learning among students. Both adoption and acceptance rates increased consistently over the years, with notable jumps in 2020 and beyond, likely due to the COVID-19 pandemic, which accelerated digital learning implementation (Dhawan, 2020). In recent years. lecturer adoption and student acceptance have tremendously increased demonstrating broad institutional integration and student readiness for blended learning.

The gradual increase in lecturer adoption aligns with findings from Ma'arop & Embi (2016), which highlight the importance of professional development, training, and technological support in encouraging faculty participation in blended learning.The availability of user-friendly Learning Management Systems (LMS) and institutional policies promoting blended learning have likely contributed to increased adoption

(Goh & Wong, 2014). Initial reluctance among lecturers may have stemmed from technological challenges, resistance to change, and workload concerns (Wong et al., 2016).

On the other hand, student acceptance has been consistently higher than lecturer adoption, indicating a strong preference for digital learning experiences among learners (Azizan, 2010). Increased exposure to online learning tools, flexibility, and interactive digital content have likely contributed to growing student acceptance (Chan et al., 2022). The trend aligns with global findings that students are more adaptable to online learning environments, especially post-pandemic (OECD, 2021). The widening gap between student acceptance and lecturer adoption in early years suggests that institutions should focus on bridging this divide through targeted faculty training and incentives. The sustained upward trajectory in both adoption and acceptance underscore the need for continued investment in digital infrastructure, pedagogical innovations, and policy support (Ministry of Higher Education Malaysia, 2021). Future research should explore the impact of blended learning on student performance, engagement, and faculty workload management to ensure sustainable implementation.

The data clearly demonstrates a positive trajectory in both lecturer adoption and student acceptance of blended learning, with student readiness consistently exceeding faculty participation. HEIs must strengthen governance, provide continuous professional development, and integrate more interactive digital tools to further enhance blended learning management and implementation success. To ensure the successful implementation of blended learning in Malaysian Higher Education Institutions (HEIs), institutions must address critical challenges related to governance, infrastructure, and pedagogy. A structured approach that enhances institutional readiness and revises key policies is essential for sustainable adoption (Ma'arop & Embi, 2016). A robust governance framework aligned with DePAN 2.0 is crucial to regulating blended learning effectively. Governance structures emphasizing accountability, transparency, participation, and predictability to optimize resource allocation and faculty training through Implementation of Task Force at HEIs can further ensure compliance and performance evaluation.

A study comparing public and private universities in Malaysia found that engagement in blended learning varies significantly due to institutional support and faculty training (Wong et al., 2016). Faculty development remains a cornerstone of effective implementation, requiring compulsory training in digital pedagogy, instructional design, and e-learning technologies. Incentivizing faculty engagement in e-content development can further enhance adoption among lecturers. Student participation can be strengthened through digital literacy programs, peer mentoring, and blended learning orientation initiatives to improve engagement and learning outcomes. Technological readiness is equally vital, necessitating upgraded broadband infrastructure (e.g., 10Gbps broadband, 90% Wi-Fi coverage) and the expansion of mobile-friendly learning platforms and Massive Open Online Courses (MOOCs).

Although DePAN 2.0 provides a structured governance framework, greater flexibility is needed for institutions to tailor policies based on their size, demographics, and technological capacity. Blended learning accreditation standards should also be strengthened by the Malaysian Qualifications Agency (MQA), ensuring that institutions report annually on adoption rates, faculty training progress, and student engagement. To support financial sustainability, the government should introduce funding incentives for infrastructure upgrades, faculty training, and technology investments. Collaborations with private sector partners can further facilitate research in digital pedagogy and e-content development. Moreover, standardizing faculty certification programs and requiring lecturers to complete a minimum of 10 hours of annual digital pedagogy training will enhance instructional quality and compliance.

CONCLUSION

Study indicates technological infrastructure and governance are the most critical enablers of blended learning readiness in HEIs. However, faculty development, digital content availability, and institutional culture must also be prioritized for a holistic and sustainable implementation **(**Ministry of Higher Education Malaysia, 2021**).** Policymakers should strengthen governance structures, invest in infrastructure, and encourage faculty participation to maximize the potential of blended learning in Malaysian HEIs. The good

practice of corporate governance, could play prime role in directing, enforcing and administering guideline to ensure the HEIs are to implementation of blended learning and contribute to Malaysia's vision, becoming of globalized online education**.**

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