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Integrating TPACK and CBAM Frameworks in Understanding Substitute Blended Learning (SBL) Implementation in Malaysian Higher Education

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Abstract

Substitute Blended Learning (SBL) was introduced by the Ministry of Higher Education as a post-pandemic alternative approach that flexibly integrates face-to-face and online instruction. Although this approach has gained increasing acceptance in higher education institutions, its implementation remains inconsistent, particularly among full-time and part-time lecturers who possess differing needs, competencies, and levels of institutional support. This paper aims to examine the implementation of SBL among full-time and part-time lecturers by synthesising existing theoretical and empirical insights to understand key challenges, adaptation needs, and support mechanisms. The Technological Pedagogical Content Knowledge (TPACK) framework is employed to examine lecturers' competence in integrating technology, pedagogy, and subject content, while the Concerns-Based Adoption Model (CBAM) is used to trace lecturers' concerns and levels of acceptance toward changes in teaching practices. Guided by the Technological Pedagogical Content Knowledge (TPACK) framework and the Concerns-Based Adoption Model (CBAM), this paper adopts a conceptual approach to analyse pedagogical, technological, and change-related dimensions of SBL implementation. This paper contributes to a deeper understanding of the dynamics of SBL implementation among full-time and part-time lecturers and to propose more inclusive support strategies, particularly in professional training and digital capacity building. In addition to enriching the educational technology literature, this study contributes theoretically through the integration of pedagogical and behavioural dimensions in lecturers' readiness, and practically by informing more inclusive digital policy implementation toward sustainable and impactful higher education.

Keywords: Substitute Blended Learning, TPACK, CBAM, Lecturer Readiness, Academic Staff Development

Introduction

The post-pandemic transformation of higher education has accelerated the integration of digital strategies in teaching and learning worldwide. In Malaysia, this transformation is institutionalised through policy-driven initiatives aimed at ensuring continuity, flexibility, and resilience in higher education delivery. One such initiative is Substitute Blended Learning (SBL), introduced by the Ministry of Higher Education (MOHE) as a structured approach that integrates face-to-face and online learning in a flexible yet regulated manner (MOHE, 2021).

SBL represents more than a technical adjustment to teaching modes; it requires lecturers to redesign pedagogical practices, rethink instructional strategies, and integrate technology meaningfully within disciplinary contexts. Effective implementation therefore depends not only on infrastructure availability but also on lecturers' technological competence, pedagogical decision-making, and readiness to adapt to instructional change. These demands highlight the relevance of Technological Pedagogical Content Knowledge (TPACK) as a framework for understanding how lecturers integrate technology, pedagogy, and content knowledge in practice (Mishra & Koehler, 2006).

At the same time, the introduction of SBL constitutes a form of educational innovation that inevitably generates varying levels of concern, resistance, and acceptance among lecturers. The Concerns-Based Adoption Model (CBAM) provides a complementary lens by explaining how individuals experience and respond to change through different stages of concern and levels of use (Hall & Hord, 2019). While both frameworks have been applied independently in prior studies, their combined use offers a more holistic understanding of instructional change by integrating professional knowledge with behavioural and emotional responses.

Despite the nationwide implementation of SBL, emerging evidence suggests that its enactment at the institutional level remains uneven. Preliminary observations at a higher education institution in Selangor indicate notable differences in SBL practices between full-time and part-time lecturers, particularly in terms of technology use, digital instructional design, and access to professional support. Part-time lecturers, who play a substantial role in curriculum delivery, often experience limited access to structured training and institutional resources, potentially affecting the quality and consistency of student learning experiences.

Although existing studies have examined blended learning readiness and digital teaching practices in Malaysia, most focus on full-time lecturers or adopt a descriptive approach that treats readiness as a static attribute. There remains a lack of in-depth qualitative research that explores how lecturers' readiness evolves through experience, concern, and adaptation—especially when comparing full-time and part-time lecturers. Moreover, empirical studies that integrate TPACK and CBAM within the Malaysian higher education context are still limited.

Accordingly, this study seeks to explore the lived experiences and actual practices of full-time and part-time lecturers in implementing Substitute Blended Learning. By employing

TPACK and CBAM as sensitising frameworks within a qualitative embedded case study design, the study aims to provide a nuanced understanding of lecturers' competencies, challenges, and support needs in navigating pedagogical change in post-pandemic higher education.

Research Objectives

This study is guided by three research objectives (ROs):

RO1: To explore the TPACK skills of full-time and part-time lecturers in implementing Substitute Blended Learning (SBL).

RO2: To examine the challenges and constraints faced by full-time and part-time lecturers during SBL implementation.

RO3: To identify the forms of support and improvement required to strengthen the effectiveness of SBL implementation in higher education institutions.

Research Questions

Based on the stated objectives, this study seeks to address the following research questions:

RQ1: How do full-time and part-time lecturers apply TPACK skills when implementing SBL?

RQ2: What challenges and constraints are faced by full-time and part-time lecturers in implementing SBL?

RQ3: What forms of support and improvement are required to assist lecturers in implementing SBL more effectively?

Significance of the Study

This study holds significant value in strengthening the implementation of Substitute Blended Learning (SBL) in higher education institutions, particularly in understanding the knowledge, skills, and experiences of full-time and part-time lecturers. As SBL is one of the primary approaches outlined by the Ministry of Higher Education to enhance post-pandemic learning (MOHE, 2021), gaining an in-depth understanding of its implementation from lecturers' actual practices is crucial. The success of SBL implementation depends not only on technological infrastructure but also on lecturers' ability to integrate pedagogy, content, and technology effectively (Mishra & Koehler, 2006; Daniela, 2021).

From a theoretical perspective, this study contributes to the enrichment of literature related to the application of TPACK and CBAM frameworks in the Malaysian higher education context. The findings are expected to explain how TPACK dimensions are applied in SBL implementation and how lecturers' concerns and patterns of technology use align with CBAM (Hall & Hord, 2015). Empirical studies integrating both frameworks remain limited in Malaysia, thus positioning this research as a potential contribution to theory development in educational technology.

Practically, this study offers a holistic portrayal of the realities of SBL implementation among full-time and part-time lecturers—two groups that often face different needs and constraints. It explores how lecturers adapt teaching approaches, select technologies, and manage digital instructional design according to their capacities. Recognising these differences is essential to ensure targeted, equitable, and efficient improvements.

Furthermore, the findings are expected to assist institutional leaders and policymakers in designing more relevant support strategies, particularly in providing professional training,

digital pedagogical guidance, and equitable access to technological resources for all lecturer categories. This is especially important as part-time lecturers, despite their significant role in curriculum delivery, often receive less attention in teaching policy implementation and professional training (Adel & Dayan, 2021; Nadiah, 2022).

Finally, this study aligns with the aspirations of the National Digital Education Policy, which emphasises accessibility, equity, and quality in higher education. It serves as a reference for institutions aiming to strengthen SBL policies in a more sustainable, inclusive, and lecturer- and student-centred manner.

Literature Review

Introduction

This literature review focuses on the implementation of Substitute Blended Learning (SBL) by examining two main theoretical frameworks: TPACK and CBAM. It also critically discusses the roles of full-time and part-time lecturers in SBL implementation and identifies research gaps that need to be addressed in the Malaysian higher education context.

TPACK and CBAM Theoretical Frameworks

The TPACK framework proposed by Mishra and Koehler (2006) emphasises the integration of technological, pedagogical, and content knowledge in effective teaching. In the context of SBL, lecturers must master not only subject content and pedagogy but also technology as a mediator for meaningful learning experiences (Mishra & Koehler, 2006; Daniela, 2021).

Meanwhile, the Concerns-Based Adoption Model (CBAM) by Hall and Hord (2019) explains the process of change in teaching practices by focusing on individuals' concerns and levels of innovation use. This framework is essential in understanding lecturers' responses and support needs during SBL implementation. Both frameworks are used as sensitising concepts rather than fixed theories, guiding the development of interview protocols and early understanding of the research phenomenon.

Although models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) have been widely employed to explain technology acceptance in educational contexts, both frameworks tend to focus primarily on cognitive aspects such as usage intention and perceived effectiveness. However, they provide limited insight into the complex affective and pedagogical dimensions inherent in teaching practices. Consequently, the integration of TPACK and CBAM is considered more comprehensive, as it combines professional knowledge (TPACK) with the emotional and behavioural processes associated with change (CBAM). This synergy enables an analysis of SBL implementation that not only evaluates lecturers' competencies but also deepens the understanding of change dynamics and concerns related to the adoption of instructional innovations.

Previous Studies on SBL Implementation

Previous studies such as Rasheed et al. (2020), Wittmann and Olivier (2021), and Adel and Dayan (2021) highlight that effective SBL implementation depends on lecturers' digital literacy, instructional design, and institutional support including training and infrastructure.

However, many studies focus primarily on students or full-time lecturers, with limited attention given to part-time lecturers.

Part-time lecturers are frequently marginalised in the planning and implementation of training initiatives, despite their critical role in curriculum delivery. Studies by Gilbert (2013), Caruth and Caruth (2013), and Adel and Dayan (2021) indicate that part-time lecturers often have limited access to professional training, career development opportunities, and equitable technological support. In addition, differences in teaching workload and time constraints further impede their ability to implement SBL effectively (Nadiah, 2022).

Research by Nor Fatin Jassni and Yunus (2024) highlight that lecturers who are not provided with consistent digital pedagogical support are at risk of producing uneven learning experiences among students. The literature also suggests that full-time lecturers generally have greater access to institutional resources and pedagogical guidance compared to part-time lecturers, thereby creating a gap in the effectiveness of SBL implementation between these two groups.

Most previous studies discuss lecturers' readiness for digital learning in a descriptive manner, without sufficiently explaining how such readiness develops or evolves over time. This approach tends to conceptualise readiness as a static attribute rather than as a developmental construct that can be shaped through training and experience. This paper argues that digital readiness should be understood as a dynamic process that evolves alongside lecturers' levels of concern and stages of innovation use (CBAM), as well as their technological–pedagogical knowledge (TPACK). Such a perspective offers a more comprehensive understanding of the human dimension in the digital transformation of education.

Research Gap

The majority of previous studies have not examined in depth the differences between the experiences and pedagogical practices of full-time and part-time lecturers in the implementation of Substitute Blended Learning (SBL). Similarly, research that empirically integrates both the TPACK and CBAM frameworks remains limited within the context of Malaysian higher education. This gap highlights the need for more in-depth and contextualised studies to understand how these two categories of lecturers adapt SBL implementation in terms of technological–pedagogical knowledge and change-related support.

Methodology

Research Design

This study adopts a qualitative single embedded case study design, as recommended by Yin (2018), to explore the implementation of Substitute Blended Learning (SBL) among full-time and part-time lecturers at a higher education institution in Malaysia. This approach enables the researcher to develop an in-depth and contextualised understanding of the SBL phenomenon based on the authentic experiences of the participants.

Qualitative Approach and Case Selection

A qualitative approach was selected as this study seeks to holistically understand lecturers' perspectives, practices, and experiences (Merriam & Tisdell, 2016; Creswell & Poth, 2018). The case was purposively selected and involved an institution that has actively implemented Substitute Blended Learning (SBL). The embedded case design enables a comparative examination of two primary sub-units of analysis, namely full-time and part-time lecturers.

Participant Selection

Participants were selected purposively based on the following criteria:

3.3.1 Full-time or part-time lecturers who were actively employed at the institution.
3.3.2 Directly involved in the implementation of Substitute Blended Learning (SBL).
3.3.3 Possessing a minimum of two years of teaching experience in subjects delivered through the SBL mode.
3.3.4 Having utilised educational technologies (such as learning management systems, interactive videos, and online quizzes) in SBL instruction.
3.3.5 Providing voluntary informed consent and demonstrating willingness to participate in in-depth interviews.

This study involved ten participants who met the selection criteria. In qualitative research, sample size is not determined statistically but is guided by information richness and data saturation (Merriam, 2009; Patton, 2015). According to Creswell and Poth (2018), qualitative case studies typically involve between five and twenty-five participants, depending on the complexity of the phenomenon and the analytical strategy employed. The sample size in this study was therefore deemed sufficient to generate rich, meaningful findings and to represent diverse experiences within the context of SBL implementation at the institution.

Data Collection Methods

This study employed two primary methods for qualitative data collection, namely semi-structured interviews and semi-structured observations. The selection of these methods was intended to generate rich, in-depth, and contextualised data, consistent with an interpretive qualitative research approach that emphasises participants' subjective experiences and the meanings they construct.

Semi-structured interviews – The interview protocol was developed based on the constructs of the TPACK framework (Mishra & Koehler, 2006) and the Concerns-Based Adoption Model (CBAM) (Hall & Hord, 2015). The protocol underwent expert review and a pilot study to ensure clarity, relevance, and alignment with the research objectives.

To enhance data dependability and strengthen the triangulation strategy, classroom observations and document analysis were also conducted as supplementary data collection methods to support the findings derived from the semi-structured interviews. This approach is consistent with the recommendations of Lincoln and Guba (1985) for ensuring credibility and trustworthiness in qualitative research through the use of multiple data sources. In this study, observations and document analysis were specifically employed to address the first research objective, which explores the TPACK skills of full-time and part-time lecturers in implementing Substitute Blended Learning (SBL).

Data Collection Procedures

Semi-structured interviews were employed as the primary method of qualitative data collection in this study. This approach allowed the researcher to maintain a structured framework based on interview protocols aligned with the TPACK and CBAM constructs, while also providing participants with the flexibility to articulate their views and experiences narratively (Merriam & Tisdell, 2016). The interviews were designed to explore in depth lecturers' capabilities, challenges, and support needs in implementing Substitute Blended Learning (SBL), thereby addressing all research objectives.

All interview sessions were conducted by the researcher and carried out face-to-face at the study institution, on dates and at times agreed upon based on participants' availability. Each interview session was expected to last between 45 and 60 minutes, depending on the flow of discussion and the depth of issue exploration facilitated through probing techniques. These probing techniques were applied reflectively to elicit further clarification, unpack meanings, and identify the rationale underlying participants' actions or perceptions.

In addition to classroom observations, the researcher also conducted document analysis of official materials used during SBL implementation to examine the alignment between enacted teaching practices and institutional policy documents as well as instructional planning. The documents analysed included SBL policy or guideline documents, class schedules, and instructional plans or lesson plans.

The combination of interview and observation protocols enabled the researcher to construct a comprehensive, reflective, and in-depth understanding of the experiences of full-time and part-time lecturers in implementing SBL. This structure also ensured that the data obtained were triangulated in nature, in line with the principles of trustworthiness proposed by Lincoln and Guba (1985).

Data Analysis Methods

Data were analysed using an inductive approach guided by thematic analysis as proposed by Braun and Clarke (2006). The analytical process involved six phases:

1. Familiarisation with the data through repeated reading.
2. Generation of initial codes.
3. Searching for themes.
4. Reviewing themes.
5. Defining and naming themes.
6. Producing the report.

NVivo software was utilised to support the systematic management and analysis of qualitative data.

Trustworthiness

To ensure trustworthiness (Lincoln & Guba, 1985), several strategies were implemented:

3.7.1 Member checking – Summaries of the interview data were shared with participants to verify the accuracy and representation of the information provided.

3.7.2 Audit trail – All coding processes, field notes, and analytical decisions were systematically documented to enhance transparency and dependability.

3.7.3 Methodological triangulation – Interview data were supported by observational data to enhance the consistency and credibility of the findings (Creswell & Poth, 2018).

Ethical Considerations

This study adhered to established research ethics guidelines as recommended by Merriam and Tisdell (2016). Written informed consent was obtained from all participants prior to data collection. Participants' identities were kept confidential, and all data were securely stored to safeguard confidentiality and maintain the integrity of the study.

Conclusion

This conceptual paper examines the implementation of Substitute Blended Learning (SBL) through an integrative perspective that combines the Technological Pedagogical Content Knowledge (TPACK) framework and the Concerns-Based Adoption Model (CBAM). By bringing these two frameworks together, the paper provides a comprehensive lens for understanding how pedagogical competence, technological integration, and change-related concerns intersect in lecturers' instructional practices within Malaysian higher education.

The conceptual integration highlights important differences in access, readiness, and institutional support between full-time and part-time lecturers, drawing attention to structural and organisational factors that shape the effectiveness of SBL implementation. Rather than viewing blended learning solely as a technical or instructional challenge, this paper emphasises the importance of institutional empathy, targeted professional development, and recognition of lecturers' diverse professional contexts.

From a social sciences perspective, this paper contributes to ongoing discourse on digital transformation in higher education by foregrounding the human-centred and organisational dimensions of pedagogical change. The integration of TPACK and CBAM is thus positioned not merely as a theoretical alignment, but as a reflective and socially informed approach that can guide future empirical research and support more inclusive and sustainable blended learning policies.

Novelty and Contribution

The novelty of this conceptual paper lies in its explicit integration of the Technological Pedagogical Content Knowledge (TPACK) framework and the Concerns-Based Adoption Model (CBAM) to examine Substitute Blended Learning (SBL) from a social sciences perspective. While existing studies often treat digital readiness and technology adoption as static or primarily technical phenomena, this paper reconceptualises blended learning implementation as a dynamic, human-centred process shaped by professional knowledge, emotional responses, and organisational contexts.

In terms of contribution, the paper extends social science discourse on higher education reform by foregrounding issues of professional equity, institutional support, and change management, particularly in relation to the differentiated experiences of full-time and part-time lecturers. Conceptually, it offers a transferable framework that can inform future empirical research, institutional policy design, and professional development strategies aimed at supporting sustainable and inclusive digital transformation in higher education.

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