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Perceptions of Malay Language Teaching Challenges and Digital Game Integration Among Primary School Teachers in Malaysia

Koo Lee Feng[*1], Wong Tze Jin[1,2], Fatin Hana binti Naning Zin[1], Farah Hanim binti Mohd Yusof[3]

[1]Faculty of Humanities, Management and Science, Universiti Putra Malaysia Bintulu Campus.

[2]Institute for Mathematical Research, Universiti Putra Malaysia.

[3]Sekolah Kebangsaan Pasir Raja, Pasir Raja, 23000 Dungun, Terengganu, Malaysia.

[*]**Corresponding author:**

Koo Lee Feng

Email ID: leefeng@upm.edu.my

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ABSTRACT

Teachers' perceptions of the challenges faced by students in learning the Malay language and their attitudes toward the integration of digital game-based learning tools were explored. A quantitative study design is employed to collect the data via a Likert-scale questionnaire distributed to 400 teachers from urban and suburban schools in Malaysia. A purposive sampling technique was used to ensure participants had relevant expertise, while random selection was utilized within this cohort to enhance representativeness. Descriptive analysis revealed that teachers identified several persistent challenges in students' language acquisition, including limited vocabulary, low confidence in speaking, and difficulties with writing and reading. Notably, student motivation was reported as the lowest among key domains. Despite these challenges, teachers expressed strong support for incorporating digital game-based learning to enhance vocabulary retention and student engagement. However, multiple linear regression analysis indicated no statistically significant relationship between teachers' perceptions of student challenges and their support for digital tools, suggesting that external factors—such as institutional policy or digital literacy—may play a larger role in shaping teachers' readiness to adopt technology. Further, teachers ranked grammar and vocabulary as the most two important components for integration into Game-Based Learning (GBL) environments. Comparisons with a similar Arabic language study revealed alignment in instructional priorities, particularly regarding the foundational role of vocabulary and grammar. These findings underscore the need for pedagogically grounded, tech-enhanced learning solutions that directly address core language challenges while aligning with broader educational strategies.

Keywords: *teachers' perceptions, game-based learning, digital literacy, student engagement, digital literacy.*

1. INTRODUCTION

Game-Based Learning (GBL) is recognised as an innovative pedagogical approach that utilises the motivational, immersive, and interactive qualities of games to enhance student engagement and educational outcomes. Rooted in constructivist learning theories, GBL fosters active participation, improved cognitive processing, and collaborative problem-solving through structured play (Prensky, 2001; Gee, 2003). Initially used in higher education and professional training, GBL has increasingly gained traction in primary and secondary education, aligning effectively with children's developmental needs and inherent inclinations for play-based learning.

The Malaysian Ministry of Education acknowledges the significance of GBL in foundational education through the Malaysia Education Blueprint 2013–2025, which underscores the development of 21st-century competencies, digital fluency, and learner-centred pedagogies—principles aligned with game-based instruction (Ministry of Education Malaysia, 2013). GBL provides primary-aged children with a distinctive opportunity to integrate educational goals with their natural propensity for play, facilitating exploratory, experiential, and contextualised learning in areas such as language, mathematics, and science (Granic et al., 2014; Plass et al., 2015).

From a medical and developmental standpoint, early schooling is crucial in influencing neurocognitive development, language acquisition, and emotional regulation—essential indicators of long-term health and welfare (Shonkoff & Phillips, 2000; World Health Organization, 2012). Language competence is intricately linked to executive functioning and social-emotional development, rendering early language training a focal point in both schooling and infant and newborn health. In this perspective, GBL is not merely an educational innovation; it provides a developmental support framework for children, especially in resource-constrained environments where conventional teaching approaches may inadequately meet varied learning requirements.

A growing corpus of research highlights the efficacy of GBL in language acquisition. Idris et al. (2020) revealed that gamified tools like Kahoot! markedly enhanced grammar proficiency and learning motivation in Malaysian ESL (English as a Second or Foreign Language) primary students. Likewise, Guan et al. (2024) recognised cognitive stimulation and intellectual problem-solving as the most reliable effects in GBL research focused on early learners. Nevertheless, obstacles to effective implementation—such as inadequate teacher preparation, limitations in digital resources, and insufficient institutional preparedness—persist in developing educational systems.

In STEM disciplines, GBL has demonstrated varying degrees of implementation. Low et al. (2023) indicated that although Malaysian secondary school physics educators shown considerable enthusiasm for GBL, only a minority effectively integrated these methodologies into their instructional frameworks, attributing this shortfall to constraints such as insufficient time, knowledge, and administrative backing. Hussein et al. (2019), in a systematic review of digital game based learning (DGBL) in science education, stated that additional rigorous longitudinal research are necessary to establish its enduring cognitive effects and advocated for larger integration in non-English language educational contexts.

Collectively, these findings indicate that although GBL presents significant potential—especially for early cognitive and language development—its effective implementation in Malay language education depends on a comprehensive understanding of classroom-level limitations, including educators' perceptions of student difficulties and their willingness to embrace digital technologies. In resource-limited educational environments, where learning challenges frequently coincide with wider developmental risks, utilising GBL could act as a cost-efficient and scalable method for enhancing early childhood educational results, potentially benefiting long-term health and social pathways.

2. RESEARCH PROBLEM AND OBJECTIVES

Despite progress in digital education and a favourable national policy environment, numerous Malaysian primary school pupils still face challenges in acquiring the Malay language. Fundamental challenges encompass restricted vocabulary retention, diminished speaking confidence, and insufficient persistent desire. Such deficiencies may impede early cognitive and social development, particularly in socioeconomically disadvantaged populations, hence indirectly sustaining health and developmental inequities.

DGBL has demonstrated potential in mitigating these challenges by providing immersive, engaging, and diverse educational environments. Nevertheless, the empirical evidence about its application and effectiveness—particularly in the context of the Malay language—remains scarce. There is a deficiency in understanding regarding teachers' perceptions of the linguistic obstacles encountered by their students and the capacity of DGBL to alleviate these issues. In resource-limited environments, especially in rural or underprivileged areas of Malaysia, such technology pedagogies may provide scalable remedies to systemic educational disparities that impact child development and, consequently, long-term health. Therefore, investigating the potential of DGBL to enhance early developmental interventions holds significance in both educational and medical contexts. This study intends to

1. investigate primary school teachers' perspectives regarding the problems encountered by children in acquiring the Malay language.
2. investigate educators' perspectives on the incorporation of DGBL technologies in Malay language curriculum.

3. RESEARCH METHODOLOGY

3.1. Research Design

The study employed a quantitative research design to examine the perceptions of primary school teachers in Malaysia regarding the challenges students face when learning the Malay language. A Likert-scale questionnaire, adapted from previous research by Ghalib et al. (2016) and Sahrir et al. (2017) served as the primary data collection instrument. The scale ranged from 1 (strongly disagree) to 5 (strongly agree) and was designed to measure the level of agreement among participants on various items related to language learning difficulties and recommendations for GBL content.

3.2. Research Sample

The questionnaire was administered to 400 primary school teachers from across Malaysia. A purposive sampling technique was applied to ensure that the participants possessed relevant expertise in teaching the Malay language. Within this targeted group, participants were randomly selected to enhance the representativeness of the sample while maintaining the focus on

those with appropriate teaching experience. The sample included teachers from both urban and suburban schools and was diverse in terms of gender, teaching experience, and exposure to educational technology. This sampling strategy aimed to collect well-informed insights from educators directly involved in language instruction.

3.3. Data Analysis

The data collected from the completed questionnaires were analysed using quantitative methods. Descriptive statistics, including means and standard deviations, were used to summarize participants' responses for each item. A demographic analysis was also conducted to categorize the sample based on factors such as location, gender, years of teaching experience, and familiarity with smartphones. In addition to descriptive analysis, multiple linear regression was conducted to determine whether instructors' perceptions of the challenges faced by students in learning the Malay language could significantly predict their level of support for the integration of digital tools, particularly GBL, in language instruction. This inferential analysis provided deeper insights into the relationship between perceived student difficulties and teachers' readiness to adopt digital pedagogies.

4. RESULTS AND DISCUSSION

Table 1. Respondents' Demographics

Num.	Item	*n*	%
1	Location		
	Urban	260	65
	Sub urban	140	35
2	Gender		
	Male	156	39
	Female	244	61
3	Teaching experience		
	Less than 5 years	312	78
	6-10 years	40	10
	11-15 years	12	3
	16-20 years	16	4
	21-25 years	10	2.5
	26-30 years	5	1.25
	Above 31 years	5	1.25
4	Smart phone operating systems		
	Android	310	77.5
	Apple iOS	30	7.5
	Windows	21	5.25
	Others	39	9.75
Total		400	100

A demographic breakdown of a 400-person sample is provided in Table 1, which is based on a variety of variables. 65% of the respondents were from urban areas, while 35% were from sub-urban areas, suggesting a predominately urban sample in terms of location. A higher representation of women, which is prevalent in the education sector, was indicated by the gender

distribution, which showed that 61% of the participants were female and 39% were male. Most respondents (78%) had less than five years of teaching experience, which implies that the sample was predominantly composed of early-career educators. A smaller percentage of respondents reported having 6–10 years (10%), 11–15 years (3%), 16–20 years (4%), 21–25 years (2.5%), 26–30 years (1.25%), and over 31 years (1.25%) of experience. In terms of smartphone usage, 77.5% of respondents utilised Android devices, followed by 7.5% who used Apple iOS, 5.25% who used Windows, and 9.75% who used other systems. This suggests that Android is the most prevalent platform among the respondents, which may be attributed to its affordability and accessibility.

Table 2: Teachers' Perceptions of Students' Learning Challenges and Technology Integration in Malay Language

No.	Item	Mean (*M*)	Standard Deviation (SD)
1	Lack of student attention in Malay language classes	3.30	1.069
2	Difficulty in memorizing Malay vocabulary	3.50	0.950
3	Low motivation to learn the Malay language	3.00	1.105
4	Low confidence in speaking Malay	3.53	0.980
5	Difficulty reading Malay texts	3.35	1.026
6	Difficulty writing in Malay	3.60	1.002
7	Limited student-instructor interaction in Malay	3.70	1.001
8	Students are interested in using technology for Malay learning	4.00	0.715
9	Digital games help expand Malay vocabulary	4.00	0.631
10	Digital games enhance student interest and engagement in Malay	4.29	0.620

The analysis of educators' perceptions regarding students' acquisition of the Malay language in Table 2 uncovers a dual narrative of ongoing obstacles and increasing opportunities. Instructors expressed moderate worries in numerous essential language areas, including writing ($M = 3.60$), student–teacher interaction ($M = 3.70$), and speaking confidence ($M = 3.53$). Further difficulties were noted in vocabulary memory ($M = 3.50$) and reading comprehension ($M = 3.35$). The lowest mean ($M = 3.00$) was recorded in motivation to learn Malay, indicating a persistent problem of low student involvement. The findings indicate that students' restricted vocabulary and diminished confidence are fundamental causes of their overall challenges in speaking, writing, and reading. Educators' views underscore a deficiency in active classroom engagement, potentially attributable to linguistic constraints and disinterest. These issues align with the existing literature, which underscores vocabulary acquisition as a fundamental obstacle in second language learning.

Despite these challenges, there exists considerable optimism for the incorporation of technology into language education. Most educators contended that DGBL may significantly augment student engagement ($M = 4.29$) and facilitate vocabulary acquisition ($M = 4.00$), while students expressed enthusiasm for using digital resources to aid their learning ($M = 4.00$). These beliefs align with national educational objectives, such as the Malaysia Education Blueprint 2013–2025, which emphasises the enhancement of digital fluency among educators and learners, as well as heightened student participation through technology and blended learning. This trend is also apparent in prior studies, including that of Yunus & Azman (2019), which highlighted the effectiveness of gamified tools like Kahoot! and Quizizz, and Ma et al. (2024), which identified the significance of educator support for technology-enhanced learning when adequate infrastructure and training are available.

A multiple linear regression was conducted to determine if teachers' perceptions of student challenges (Items 1–7) predict their support of digital tools (measured by Items 9 and 10), thereby elucidating the factors that contribute to the favourable perspective on DGBL. The results indicated that the model revealed no statistically significant differences, with a $R^2 = 0.006, F(7, 392) = 0.33, p = 0.941$. This suggests that instructors' support for DGBL may not be directly influenced by the specific challenges students encounter in learning Malay, as none of the individual variables exhibited statistical significant difference ($p > 0.05$ for all), implies that the efficacy of digital tools may be more significantly impacted by external or systemic factors—such as individual pedagogical attitudes, institutional mandates, or familiarity with educational technologies—rather than solely by classroom observations. Consequently, future research should integrate supplementary variables, including institutional support, instructors' digital literacy, prior training in educational technology, and demographic factors (e.g., age, teaching experience). These improved models may offer a more comprehensive

understanding of the factors influencing educators' acceptance and integration of digital innovations in language instruction.

Table 3. Recommendations for Incorporating Malay Language Content into DGBL Environments

	Item	Mean	Rank
1	Vocabulary	4.16	1
2	Phrase	3.20	4
3	Grammar	4.12	2
4	Pronunciation	4.10	3

Table 3 demonstrates the recommendations for integrating Malay language content into digital learning settings. The findings indicate that the primary priorities for DGBL language materials were vocabulary (M = 4.16) and grammar (M = 4.12), followed by pronunciation (M = 4.10) and phrases (M = 3.20), as demonstrated by the responds of 400 participants in the Malay language study. A comparative study by Zainuddin et al. (2020) on Arabic language training, involving 463 respondents, yielded similar findings, underscoring the importance of vocabulary and grammar across linguistic contexts. The continual focus on these elements suggests that, regardless of the target language, digital tools should be designed primarily to improve learners' vocabulary and grammar skills, while also incorporating features that promote pronunciation and conversational use.

5. CONCLUSION AND FURTHER STUDY

This study investigated primary school teachers' views on the difficulties children have in learning the Malay language and their attitudes towards the incorporation of DGBL tools. Analysis demonstrates that children frequently encounter challenges in vocabulary acquisition, verbal fluency, and sustained motivation—domains that are not only educationally important but also essential for cognitive and socio-emotional growth in early infancy. Notwithstanding these ongoing obstacles, the educators involved expressed strong support for the implementation of DGBL to improve vocabulary acquisition and student engagement. Grammar and vocabulary were generally recognised as the most appropriate linguistic elements for gamified learning environments. The lack of a statistically significant correlation between teachers' perceptions of student difficulties and their support for DGBL indicates that external, non-pedagogical factors—such as digital competency, infrastructural support, and access to professional training—may be more influential in technology adoption. This underscores the significance of systemic preparedness in implementing digital interventions, particularly in underprivileged or rural areas where deficiencies in educational and digital infrastructure frequently reflect discrepancies in health and developmental results. The results indicate a crucial necessity for pedagogically sound, contextually relevant digital interventions that are both scalable and attuned to local educational conditions. In a wider developmental framework, augmenting early linguistic abilities via technology-assisted methods may lead to enhanced cognitive results, thereby linking educational advancements with enduring public health objectives, especially in resource-limited settings. Subsequent research ought to investigate these matters utilising mixed-methods designs to more effectively elucidate the intricate aspects affecting technology uptake among educators. Incorporating student perspectives, executing longitudinal studies on the efficacy of particular DGBL tools, and contrasting implementations across diverse linguistic, geographic, and socio-economic contexts will yield a more thorough comprehension of how digital technologies can facilitate foundational language acquisition. These ideas are particularly pertinent for formulating early developmental strategies that integrate educational and health outcomes in resource-constrained settings.

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