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THE IMPACT OF PADLET AS A DIGITAL TOOL ON VOCABULARY ACQUISITION AMONG YEAR 4 ESL PUPILS

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Abstract:

This study examines the effectiveness of Padlet in enhancing vocabulary acquisition among Year 4 ESL pupils in a Malaysian primary school. Using a quasi-experimental mixed-methods design, 30 pupils completed a pre-test and post-test and participated in a four-week Padlet-based intervention involving interactive and multimodal vocabulary tasks. Quantitative results showed a significant improvement in vocabulary performance, with mean scores increasing from 9.8 to 17.9 ($t = 18.62, p < .001$). Qualitative data from classroom observations and interviews indicated strong pupil engagement, enjoyment and motivation. Learners reported that Padlet's visual features, multimedia support and collaborative functions made vocabulary learning easier, more meaningful and more memorable. The findings demonstrate that Padlet effectively supports vocabulary recognition, recall and usage, aligning with principles of Constructivist Learning Theory, Multimedia Learning Theory and the Technology Acceptance Model. This study provides empirical evidence for integrating digital tools in Malaysian primary ESL classrooms to promote interactive and learner-centered vocabulary instruction.

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Keyword:

Learner Engagement, Learner Perception, Padlet, Technology-Assisted Language Learning (TALL), Vocabulary Acquisition



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Introduction

Vocabulary acquisition is essential for language proficiency and communicative competence. Without a sufficient vocabulary base, learners struggle with understanding spoken and written texts, constructing grammatically correct sentences and expressing ideas effectively (Nation, 2013). In ESL contexts, vocabulary acquisition is more than memorization, it involves using words meaningfully in various communicative situations. It plays a crucial role in reading comprehension, writing fluency and oral communication.

In Malaysia, English language teaching is guided by frameworks such as the Dokumen Standard Kurikulum dan Pentaksiran (DSKP) and the Common European Framework of Reference for Languages (CEFR). These emphasize vocabulary development and encourage contextual, meaningful language use instead of rote memorization (Wok Zaki and Darmi, 2021; Council of Europe, 2020). Despite the systematic structure provided by these frameworks, many Malaysian pupils still struggle with vocabulary acquisition, often relying on memorization without opportunities to apply new words in real contexts, leading to poor retention and usage (Fengyu, 2023; Meganathan et al., 2019).

The integration of Technology-Assisted Language Learning (TALL) has revolutionized language teaching. Digital tools like online apps, gamified platforms and collaborative spaces promote engagement, motivation and autonomy (Smiderle et al., 2020; Stockwell and Wang, 2024). These tools enhance vocabulary acquisition by providing authentic input through multimedia content, deepening word comprehension (Teng, 2022).

While digital tools like apps and gamified platforms offer numerous benefits for language learning, their integration in some contexts such as Malaysian primary ESL education still faces significant challenges. Traditional methods that prioritize memorization over engagement contribute to poor retention and limited communicative application of new words (Fengyu, 2023; Meganathan et al., 2019). Additionally, low motivation due to uncreative lessons further compounds this issue. To address this, educators have turned to TALL tools like Padlet, which offer interactive, collaborative environments that encourage active participation and peer feedback (Rosmayanti et al., 2025; Alzouabi and Alotaibi, 2025). However, the effectiveness of Padlet in Malaysian primary classrooms remains underexplored.

Several gaps exist in current research regarding the use of Padlet for vocabulary acquisition in Malaysian primary schools. First, there is limited evidence on its impact, with studies suggesting digital platforms improve vocabulary retention (Nozaki et al., 2023; Kayra, 2024), but these findings have not been applied to the Malaysian context. Second, learners' perceptions and attitudes toward digital tools, which significantly influence engagement and performance (Davis, 1989), remain underexplored. Most research on digital tools focuses on secondary or tertiary students, not younger learners, with limited empirical studies on how such

tools influence primary ESL education in Malaysia (Klimova, 2021; Ramli and Aladdin, 2021). Given that primary pupils are developing foundational literacy and digital competencies, it is crucial to examine how platforms like Padlet support vocabulary learning at this stage.

This study aims to address these gaps by exploring two key questions: To what extent does the use of Padlet enhance vocabulary acquisition among Year 4 ESL learners? How do learners perceive Padlet's effectiveness in vocabulary learning? By examining both learning outcomes and learner perceptions, this research seeks to understand how Padlet can contribute to vocabulary acquisition in Malaysian ESL classrooms.

This research is significant for several reasons. First, it contributes to the body of research on Technology-Assisted Language Learning (TALL) by providing localized evidence from a Malaysian primary school context. Although previous studies have shown the benefits of digital tools for language learning (Kumar and Hashim, 2024; Yunus et al., 2021), few have focused on Padlet's role in vocabulary acquisition among young learners. Second, the study offers practical implications for ESL educators, providing insights on how to use Padlet to enhance learner engagement and vocabulary mastery.

Literature Review

Vocabulary Learning in the ESL Context

Traditional practices such as memorization, translation and word list often promote rote learning with limited contextual practice (Fengyu, 2023), leading to shallow understanding and weak retention. Hanwen (2024) highlights that vocabulary learning extends beyond knowing forms and meanings to the ability to use words effectively and spontaneously.

Vocabulary acquisition entails receptive knowledge (recognizing words) and productive knowledge (using words accurately), and effective instruction must develop both (Nation, 2013). This can be supported through intentional learning and incidental exposure (Meganathan et al., 2019).

Recent studies encourage contextual, interactive and learner-centered approaches using authentic materials, project-based learning, digital storytelling and game-based tasks (Ng Li Wen and Muhammad Naim, 2023). Such methods align with CEFR's communicative focus, where vocabulary is acquired through meaningful interaction rather than isolated drills.

Digital Tools in Vocabulary Learning

The rapid growth of educational technology has significantly transformed language learning, with digital tools such as multimedia applications and collaborative platforms enabling interactive vocabulary engagement (Salmanova, 2025). These tools enhance accessibility, personalize learning and foster self-directed engagement. Research shows that digital tools boost learners' motivation and confidence by making vocabulary learning more dynamic and enjoyable (Al-Khresheh, 2025; Ishak et al., 2022). Gamified features like badges, rewards and feedback reinforce vocabulary development, while multimedia elements support comprehension through text, visuals and audio (Abdulrahman et al., 2020; Mayer, 2005).

Technology also supports active learning by encouraging meaning construction rather than passive memorization. Multimedia elements such as images, videos and animations enhance understanding and recall (Kayra, 2024), while digital platforms facilitate autonomous learning by allowing learners to progress independently with immediate feedback (Pratiwi and Waluyo, 2023). They also provide opportunities for incidental learning through authentic digital exposure (Teng, 2022), aligning with Constructivist and Multimedia Learning theories. Moreover, collaborative tools like forums, blogs and digital boards enable interaction and knowledge-sharing, supporting social learning and retention (Vygotsky, 1978; Wu, 2023).

Learners' Perceptions of Digital Tools

Empirical studies reveal that ESL learners generally hold positive attitudes toward digital learning platforms. For example, Hellín et al. (2023) reported that interactive digital tools increase motivation and encourage greater participation in vocabulary activities. Similarly, Al-Jarf (2022) found that learners appreciated the autonomy offered by mobile apps, which allowed them to review vocabulary flexibly. In the Malaysian context, Yunus et al. (2021) observed that digital tools enhanced learners' confidence and collaboration, particularly when teachers provided clear instructions and structured activities.

Padlet as a Digital Learning Tool

Several studies have demonstrated Padlet's potential in language education. Nozaki et al. (2023) found that integrating Padlet into ESL lessons improved vocabulary retention and contextual understanding by allowing learners to engage in peer feedback and reflection. Similarly, Alzouabi and Alotaibi (2025) reported that Padlet increased learners' motivation and provided a sense of ownership over learning. In Malaysian contexts, Yunus and Kim (2021) emphasized that online platforms with interactive and collaborative features, such as Padlet, encourage learner participation and self-expression.

Theoretical Framework

Constructivist Learning Theory emphasizes that learners build knowledge through interaction and social engagement (Piaget, 1950; Vygotsky, 1978), which aligns with Padlet's collaborative features that allow learners to share vocabulary, comment and learn within the Zone of Proximal Development (Vygotsky, 1978). Multimedia Learning Theory posits that learning improves when information is delivered through verbal and visual channels (Mayer, 2005), and Padlet supports this through multimodal elements such as text, images and audio; the Modality and Segmenting Principles further state that manageable, varied input enhances retention and prevents overload (Mayer and Moreno, 1999). The Technology Acceptance Model highlights that learners' willingness to use a tool depends on perceived usefulness and ease of use (Davis, 1989), indicating that when Padlet is engaging and beneficial, learners are more likely to adopt it.

Research Questions

The research questions of this research are:

To what extent does the use of Padlet enhance vocabulary acquisition among Year 4 ESL learners?

How do Year 4 ESL learners perceive the effectiveness of Padlet in vocabulary acquisition?

Research Objectives

The research objectives of this research are:

Examine the effectiveness of Padlet in enhancing vocabulary acquisition among Year 4 ESL learners.

2. Explore Year 4 ESL learners' perceptions and attitudes toward using Padlet in enhancing vocabulary acquisition

Methods

This study adopted a quasi-experimental mixed-methods design to examine the effectiveness of Padlet in improving Year 4 ESL pupils' vocabulary acquisition and to explore their learning perceptions. The population comprised Year 4 pupils in a Johor public school, chosen due to their developmental suitability for technology-enhanced vocabulary learning. A convenience sample of 30 pupils was used. For qualitative data, six pupils were selected purposively to represent varied achievement levels, in line with Creswell and Poth's (2018) recommended sample range. The research was conducted in a semi-urban primary school equipped with basic digital facilities, consistent with Malaysia Education Blueprint (2013–2025) and Digital Education Policy (DPD 2021–2025), with familiarity aiding authentic implementation and management (Rajamanikam, 2023).

Instruments included a pre- and post-vocabulary test consisting of 20 items measuring understanding, retention and usage, developed based on CEFR Year 4 standards, Nation's (2001) Vocabulary Levels Test and Read (2000). Content validity was ensured by expert review and a pilot test produced high reliability ($\alpha=0.84$). Qualitative instruments involved semi-structured interviews and classroom observations, guided by TAM (Davis, 1989) and supported by ecological validity (Braun and Clarke, 2006), with a pilot interview for refinement.

Data collection spanned five weeks: pre-test (Week 1), a four-week Padlet intervention (Weeks 2–4), and post-test plus interviews and observations (Week 5). Quantitative data were analyzed using SPSS through descriptive statistics and paired-sample t-test to identify vocabulary gains (Creswell and Creswell, 2018), with effect size measured using Cohen's d (Cohen, 1988) and proficiency categorization aligned with Teng (2022) and Yunus et al. (2021). Qualitative data underwent inductive thematic analysis using Braun and Clarke's (2006) six-phase model, with trustworthiness ensured through triangulation, member checking, audit trail and inter-rater reliability ($\kappa=0.76$; Landis and Koch, 1977).

Results

Findings of Descriptive Analysis: Pre-Test and Post-Test Performance

Table 1 presents the comparison between pupils' pre-test and post-test scores. Each test consisted of 20 items designed to measure pupils' vocabulary recognition, recall and usage. The pre-test was conducted prior to the Padlet intervention to measure pupils' initial vocabulary knowledge, while the post-test was administered after the intervention to evaluate learning gains.

Table 1: Pre-Test And Post-Test Results (N = 30)

Pupil	Pre-test		Post-test	
	Raw data	Percentage (%)	Raw data	Percentage (%)
1	8/20	40	17/20	85
2	10/20	50	18/20	90
3	12/20	60	19/20	95
4	7/20	35	16/20	80
5	9/20	45	18/20	90
6	11/20	55	19/20	95
7	6/20	30	15/20	75
8	13/20	65	20/20	100
9	10/20	50	18/20	90
10	9/20	45	17/20	85
11	8/20	40	17/20	85
12	12/20	60	20/20	100
13	11/20	55	19/20	95
14	7/20	35	16/20	80
15	14/20	70	20/20	100
16	10/20	50	18/20	90
17	9/20	45	18/20	90
18	8/20	40	17/20	85
19	13/20	65	20/20	100
20	12/20	60	19/20	95
21	11/20	55	19/20	95
22	6/20	30	15/20	75
23	10/20	50	18/20	90
24	9/20	45	17/20	85
25	8/20	40	17/20	85
26	7/20	35	15/20	75
27	12/20	60	19/20	95
28	11/20	55	18/20	90
29	9/20	45	17/20	85
30	10/20	50	19/20	95
Mode	9	45	18	90
Mean	9.8	49	17.9	89.5
Range	8	40	5	25
SD	2.3	11.5	1.4	7

The descriptive results show a substantial improvement in pupils' vocabulary performance after the intervention. The mean score increased from 9.8 (49%) in the pre-test to 17.9 (89.5%) in the post-test, reflecting a gain of 40.5 percentage points. The rise in both means and mode values indicates that pupils demonstrated enhanced understanding, retention and application of vocabulary after engaging in Padlet-based activities.

Moreover, the reduction in the standard deviation from 2.3 to 1.4 suggests less variability in post-test scores, implying a more consistent level of achievement among pupils. This consistency indicates that the Padlet intervention exerted a uniformly positive influence across learners of varying proficiency levels.

Findings of Inferential Analysis

The analysis addresses the first research objective, which is to examine the effectiveness of Padlet in enhancing vocabulary acquisition among Year 4 ESL learners. A paired-sample t-test was employed, as the same group of participants ($n = 30$) completed both the pre-test and post-test.

Research Hypotheses

To test the effectiveness of the Padlet intervention, the following hypotheses were formulated:

Null Hypothesis (H_0): There is no significant difference in pupils' vocabulary acquisition before and after using Padlet.

Alternative Hypothesis (H_1): There is a significant difference in pupils' vocabulary acquisition before and after using Padlet.

Results of Paired-Sample T-Test

Table 2 presents the results of the paired-sample t-test comparing the mean scores of the pre-test and post-test.

Table 2: Results of Paired-Sample t-Test ($n = 30$)

Test	Mean	n	Standard Deviation	t-value	df	Sig. (2-tailed)
Pre-test	9.8	30	2.30			
Post-test	17.9	30	1.40	18.62	29	0.000

Significance level: $p < 0.05$

A paired-sample t-test was conducted to compare pupils' pre-test and post-test scores to determine whether the increase in vocabulary performance was statistically significant. Results showed a substantial improvement from pre-test ($M = 9.8$, $SD = 2.30$) to post-test ($M = 17.9$, $SD = 1.40$). The analysis produced a t-value of 18.62 with 29 degrees of freedom, and a p-value of 0.000, which is below the 0.05 significance threshold. As $p < .05$, the null hypothesis (H_0) was rejected, confirming that the use of Padlet had a significant positive effect on pupils' vocabulary acquisition. This suggests that the difference observed was unlikely to have occurred by chance.

Interpretation of Findings

The inferential results validate that the Padlet-based intervention significantly improved pupils' vocabulary performance. The large difference in mean scores, supported by the statistical evidence, demonstrates that Padlet enhanced pupils' ability to recognise, recall and use English vocabulary effectively.

This finding aligns with previous studies that highlight the positive impact of digital tools on vocabulary development (Md Yunus et al., 2020; Zarrati et al., 2024). Specifically, Padlet's multimodal features such as images, videos and interactive posts likely helped pupils establish stronger word associations and improved long-term retention.

Moreover, these results support the principles of Multimedia Learning Theory (Mayer, 2005) and Constructivist Learning Theory (Vygotsky, 1978), both of which emphasise the importance of active participation, collaboration and dual-channel processing in effective learning. The interactive and social features of Padlet allowed pupils to construct knowledge meaningfully through engagement and collaboration.

Findings of Classroom Observation and Interview Analysis

Table 3: Summary of Classroom Observation Results (n = 30)

Observation Item	Yes	No	Remarks
Participates actively in Padlet activities (posting, commenting, responding)	29	1	Almost all pupils contributed actively to Padlet discussions.
Shows interest and enthusiasm when using Padlet	30	0	Pupils showed high excitement when viewing peers' posts and multimedia.
Can recognise and recall vocabulary items introduced through Padlet	27	3	A few pupils initially struggled but improved after guided practice.
Attempts to use target vocabulary in responses or posts	26	4	Several pupils used target words in meaningful sentences.
Engages in collaboration (liking, replying, giving feedback)	28	2	Pupils enjoyed interacting through comments and reactions.
Works well individually and in group/paired tasks using Padlet	29	1	Pupils supported one another during shared activities.

The observation results indicate a high level of participation and enthusiasm among pupils during Padlet sessions. Almost all pupils contributed actively by posting and responding to their peers' ideas. The majority could recognise and recall vocabulary items and many attempted to use the target words meaningfully in their posts. To provide deeper insight, Table 4 presents the main themes derived from classroom observation notes.

Table 4: Thematic Findings from Classroom Observations

Theme	Description	Example Observations
Active Participation	Pupils were highly engaged in posting, replying and commenting during Padlet sessions.	Pupils eagerly uploaded pictures and words, responding to peers' ideas.
Positive Engagement	Pupils displayed visible enjoyment and motivation during the online activities.	Pupils laughed and clapped when their posts were displayed.
Improved Vocabulary Recall	Pupils showed increasing accuracy in word recognition and usage.	By the third session, most pupils could recall new words independently.
Meaningful Vocabulary Usage	Pupils used target words appropriately in context.	A pupil wrote, "My teacher is kind," using 'kind' correctly.
Collaboration and Peer Support	Pupils helped one another through Padlet comments and reactions.	Pupils liked peers' posts and gave supportive replies such as "Good job!".

The observations revealed that Padlet fostered a collaborative and enjoyable learning atmosphere. Pupils were motivated to participate, demonstrated improvement in vocabulary recall and displayed peer encouragement during group and individual activities. These findings highlight Padlet's potential in promoting both linguistic and social engagement in ESL classrooms.

Interview Findings

To further explore pupils' perceptions of using Padlet for vocabulary learning, semi-structured interviews were conducted with 6 participants after the intervention. Their responses were analysed thematically to identify patterns related to enjoyment, ease of use, vocabulary improvement and collaboration. Table 5 presents excerpts from pupils' interview responses.

Table 5: Interview Responses from Pupils

Pupil	Q1: Do you enjoy using Padlet in your English lessons? Why or why not?	Q2: Which Padlet activity (posting words, looking at peers' posts, games, pictures, videos, etc.) helped you learn new vocabulary best?	Q3: Was it easy or difficult to remember the new words you learned through Padlet? Can you give an example?	Q4: Which Padlet task did you enjoy the most, and why?	Q5: Do you think using Padlet helped you improve your English vocabulary? How?
1	Yes, I enjoy using Padlet because it is colourful and fun.	Posting pictures.	Easy.	Picture-matching post.	Yes, because I can remember the words easily.
2	Yes. It is interesting to see everyone's posts.	Watching short videos.	Easy.	Video quiz.	Yes, I learned more words.
3	I like it very much. It's fun.	Commenting on friends' posts.	Quite easy.	Word-guessing game.	Yes, because I can use the words in sentences.
4	Yes, I do. It is fun and different from our book.	Posting new words.	Easy.	Group activity on Padlet.	Yes, I understand more English words.
5	I love Padlet!	Sharing pictures.	Easy.	Vocabulary race.	Yes, it helps me to remember new words.
6	Yes! It's very fun.	Posting my own ideas.	Easy.	Picture-post challenge.	Yes, because I can learn by doing.

From the interviews, five major themes were identified and are summarised in Table 6.

Table 6: Thematic Findings from Semi-Structured Interviews

Theme	Description	Sample Responses
Increased Enjoyment	Pupils described Padlet lessons as fun, colourful and interactive.	"I like Padlet because it's fun and I can post things."
Visual and Multimedia Support	Pupils said pictures and videos helped them understand and recall words.	"I remember 'rain' because of the picture and video."
Ease of Understanding	Pupils felt the visuals made learning easier.	"It's easy when I see the picture and word together."
Perceived Vocabulary Improvement	Pupils believed their English improved due to Padlet activities.	"Now I can use more English words."
Motivation and Collaboration	Pupils enjoyed working with peers through online collaboration.	"I like to see my friends' posts and reply to them."

Discussion

The findings of this study indicate that Padlet significantly enhanced vocabulary acquisition among Year 4 ESL pupils, as shown by the substantial increase in mean scores from 9.8 to 17.9 and a statistically significant difference between pre- and post-test results ($t = 18.62, p < 0.05$). The multimedia features of Padlet such as images, videos and quizzes supported dual-channel processing and reduced cognitive overload, consistent with Mayer's Multimedia Learning Theory. At the same time, pupils benefited from teacher scaffolding and peer interaction, reflecting principles of Constructivism and Vygotsky's Sociocultural Theory. These findings align with previous studies (Md Yunus et al., 2020; Rosmayanti et al., 2025; Megat Mohd. Zainuddin et al., 2020), which similarly found technology-assisted platforms to improve vocabulary retention, comprehension and motivation.

In addition to measurable vocabulary gains, pupils demonstrated highly positive perceptions and attitudes toward using Padlet. They described Padlet activities as fun, colourful and easy to use, reflecting strong Perceived Usefulness and Perceived Ease of Use as outlined in the Technology Acceptance Model. Pupils also noted that the visual and interactive elements helped them remember new words more effectively, supporting earlier findings by researchers such as Al-Khresheh (2025) and Hellín et al. (2023), who emphasized the role of enjoyment and motivation in digital learning. Moreover, Padlet's collaborative functions such as commenting, liking and sharing encouraged social interaction and peer support, further strengthening vocabulary learning through sociocultural processes highlighted by Vygotsky. Overall, Padlet created a multimodal, interactive and collaborative environment that effectively supported vocabulary development, cognitive processing and positive learner attitudes in the Malaysian primary ESL context.

Conclusion

This study examined the impact of Padlet on Year 4 ESL pupils' vocabulary learning and found that it significantly improved vocabulary acquisition while fostering positive perceptions, motivation and engagement. The combination of pre- and post-test data with observation and interview findings showed that Padlet's visual, interactive and collaborative features transformed vocabulary learning into a more meaningful and enjoyable process. The results support the principles of Constructivist Learning Theory, Multimedia Learning Theory and the Technology Acceptance Model, demonstrating how active learning, multimodal input and ease of use jointly contribute to effective digital learning. This research also adds valuable evidence from the Malaysian primary ESL context, showing that young learners benefit greatly from well-designed, scaffolded digital tasks. It highlights important implications for teaching practice and aligns with Malaysia's digital education goals, reinforcing that Padlet is a practical and powerful tool for enhancing vocabulary learning and supporting 21st-century skills in primary classrooms.

Limitations and Future Studies

Based on the findings and implications of this study, several recommendations are proposed for key stakeholders. For teachers, Padlet should be integrated purposefully into vocabulary lessons to encourage active, visual and collaborative learning, supported with structured guidance to maintain focus and productivity. School administrators are encouraged to provide access to digital tools, technical support and professional development to strengthen teachers' digital competency, while promoting a school culture that values innovation and continuous improvement. For curriculum developers, technology-assisted vocabulary learning should be incorporated into the national ESL curriculum, with lesson plans and materials aligned to CEFR descriptors to ensure coherence between instruction and assessment.

For future research, it is recommended that the sample size be expanded beyond the 30 pupils from a single Johor school to include more diverse participants from various regions, school settings and socio-economic backgrounds to increase generalizability. Longitudinal research is suggested to examine long-term vocabulary retention, while comparative studies involving different digital tools (such as Padlet, Quizlet and Kahoot) may identify the most effective platforms for specific language components. Further studies could also investigate Padlet's impact on other language skills, including speaking, writing, listening and grammar, to obtain a more holistic understanding of its potential in ESL learning.

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