

Enhancing Vocabulary Acquisition among Year 1 Pupils in Rural Schools through Blended Learning Strategies

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ABSTRACT

Vocabulary acquisition is fundamental in early English language learning, particularly for pupils in rural primary schools where exposure to English is limited. This study examined the effectiveness of blended learning strategies in enhancing vocabulary acquisition among Year 1 pupils in a rural Malaysian primary school. A quasi-experimental design was employed involving 30 pupils divided into an experimental group and a control group. The experimental group received vocabulary instruction through blended learning strategies integrating face-to-face teaching with digital learning materials, while the control group was taught using traditional methods. Data were collected through vocabulary pre-tests and post-tests as well as classroom observations. Quantitative data were analysed using descriptive statistics and t-tests, while qualitative data were analysed thematically. The findings showed a significant improvement in vocabulary scores within the experimental group. Although the experimental group achieved higher post-test mean scores than the control group, the difference was marginal, possibly due to limited technological access and the short duration of the intervention. Classroom observations indicated higher engagement and participation among pupils exposed to blended learning. The study concludes that blended learning has positive potential for enhancing vocabulary acquisition among young learners in rural contexts when adequately supported and implemented over a sustained period.

Keywords: Blended learning; Vocabulary acquisition; Young learners; Rural education

INTRODUCTION

Background of the Study

Developing a rich vocabulary is crucial for young children's language and literacy growth, especially during their initial years of formal education. A robust vocabulary underpins reading comprehension and enables effective communication, aligning with the objectives of the Malaysian primary English curriculum (Zucker, Cabell, & Pico, 2021). While vocabulary can be learned through both structured teaching and incidental experiences, pupils in rural schools often have fewer opportunities for incidental exposure to English. As a result, classroom instruction becomes the primary avenue for these learners to develop their vocabulary (Wasik & Hindman, 2020).

In Malaysian rural schools, traditional teaching methods such as rote memorisation and drills are still widely used. Although these methods can help pupils memorise words in the short term, they often fail to engage learners or promote meaningful, long-term vocabulary retention (Salim et al., 2020). The lack of technological infrastructure and limited English exposure outside of school exacerbate the challenges faced by rural pupils (Yunus, Lau, Mohd Khair, & Mohd Yusof, 2020). These conditions contribute to a persistent gap in English language achievement between rural and urban learners.

Blended learning, which combines conventional face-to-face instruction with digital tools and online resources, has emerged as a promising strategy to enhance vocabulary teaching (Shehzadi & Umaid, 2023). This approach enables more interactive and engaging learning experiences, allowing pupils to practise vocabulary beyond the classroom and at their own pace. The Malaysian Ministry of Education has recognised the potential of blended

learning through initiatives such as the National Digital Education Policy and the CEFR-aligned Roadmap for English Language Education 2015–2025, which call for integrating technology in language teaching to improve learner outcomes.

While studies conducted in urban and secondary school settings have demonstrated the benefits of blended learning on language acquisition (Lim & Stapa, 2023), there remains a lack of empirical evidence on its effectiveness in rural primary schools, particularly at the Year 1 level. Therefore, this study aims to examine how blended learning strategies can support vocabulary acquisition among Year 1 pupils in a rural Malaysian school context.

Problem Statement

Vocabulary development is a fundamental aspect of early literacy and language learning, as it directly influences young learners' reading comprehension and overall communication skills (Zucker et al., 2021). However, many Year 1 pupils in Malaysian rural schools struggle to acquire an adequate vocabulary base. Limited proficiency at this stage can hinder their ability to engage with the English language curriculum and negatively affect their long-term academic achievement (Wasik & Hindman, 2020).

This issue arises from several contributing factors. In rural classrooms, teaching is still largely dominated by traditional methods like rote memorisation and repetitive drills, which often do not engage pupils or cater to their varying learning styles (Salim et al., 2020). Beyond school, rural pupils generally lack chances to practise English because of socio-economic limitations and minimal exposure to English-rich settings (Yunus et al., 2020). Consequently, their vocabulary development through incidental learning is constrained, making classroom teaching even more crucial to bridge this gap.

Blended learning offers a potential solution by integrating traditional teaching with digital tools that can extend learning beyond the classroom and cater to individual learning preferences (Shehzadi & Umaid, 2023). Research has shown that technology-supported instruction can improve engagement and retention of vocabulary among young learners (Lim & Stapa, 2023). Nevertheless, most studies in Malaysia have focused on secondary schools or urban settings, leaving a gap in understanding how blended learning strategies might benefit Year 1 pupils in rural schools.

This study seeks to address this gap by investigating the effectiveness of blended learning in enhancing vocabulary acquisition among rural Year 1 pupils. By doing so, it aims to provide empirical evidence that can inform teaching practices and support the implementation of blended approaches in early language education within rural Malaysian contexts.

Research Objectives :

1. Evaluate the effectiveness of blended learning strategies in enhancing vocabulary acquisition among Year 1 pupils in a rural Malaysian school.
2. Compare the vocabulary gains between pupils taught using blended learning strategies and those taught using traditional methods.

Research Questions :

1. How effective are blended learning strategies in enhancing vocabulary acquisition among Year 1 pupils in a rural Malaysian school?
2. Is there a significant difference in vocabulary acquisition between pupils taught through blended learning strategies and those taught through traditional methods?

Significance of the Study

This study offers valuable insights for key stakeholders, such as teachers, curriculum developers, and policymakers in early language education. By presenting evidence on how blended learning strategies perform in rural primary classrooms, the findings can support teachers in implementing more engaging and effective

vocabulary teaching approaches. Additionally, the outcomes may guide teacher training programmes by highlighting practical ways to incorporate technology into classroom practice.

For curriculum designers, the findings can serve as a basis for creating teaching and learning materials that effectively combine traditional and digital resources to support vocabulary development among Year 1 pupils. Additionally, policymakers can utilise the insights from this study to support initiatives under the National Digital Education Policy and the CEFR-aligned Roadmap for English Language Education, both of which emphasise the integration of technology in enhancing language learning outcomes.

By addressing the specific challenges of rural school contexts, this study also contributes to narrowing the achievement gap between rural and urban pupils, aligning with national education goals of providing equitable and quality education for all learners.

Scope of the study

This study focuses on examining the effectiveness of blended learning strategies in enhancing English vocabulary acquisition among Year 1 pupils in a rural Malaysian primary school. The participants consisted of 30 pupils from one national primary school in Kota Tinggi, Johor, divided equally into an experimental group and a control group.

The scope of the study is limited to vocabulary acquisition, specifically the pupils' ability to recognise, identify, and use selected English vocabulary items aligned with the CEFR-based Year 1 English language curriculum. Other language skills, such as reading comprehension, grammar, or speaking fluency, are beyond the scope of this research.

The findings of this study are context-specific and reflect the experiences of Year 1 pupils in one rural school setting. Therefore, while the results provide useful insights for similar educational contexts, they may not be generalisable to all schools, particularly those in urban areas or with different socio-economic conditions.

Limitation of the study

This study has several limitations that should be acknowledged. First, the research was conducted in a single rural primary school, which may limit the generalisability of the findings to other contexts, particularly urban schools or schools with different socio-economic backgrounds.

Second, the sample size was relatively small, involving only 30 Year 1 pupils, which may affect the robustness of the statistical analyses and the ability to generalise the results to a larger population.

Third, the intervention period was limited to three weeks. A longer intervention might have provided a more comprehensive picture of the long-term effects of blended learning on vocabulary acquisition.

Lastly, while efforts were made to control external variables, factors such as pupils' home learning environments and individual motivation levels could have influenced their learning outcomes and were beyond the researcher's control.

Definition of Terms

Table 1: Definition of Terms

Key words	Conceptual Definition	Operational Definition
Vocabulary Acquisition:	Vocabulary acquisition refers to the process by which learners understand, internalize, and use new words in meaningful contexts as part of language development (Dixon et al., 2020).	In this study, vocabulary acquisition is measured by the number of targeted English words that pupils correctly identify and use in the researcher-developed vocabulary test administered before and after the intervention.

Blended Learning:	Blended learning is an instructional approach that integrates face-to-face teaching with digital or online learning components to enhance engagement and learning outcomes (Shehzadi & Umaid, 2023).	In this study, blended learning refers to a combination of classroom-based vocabulary instruction and home-based digital activities, such as the use of audio word recordings and QR code-linked content..
Year 1 Pupils:	Year 1 pupils are children in the first year of formal primary education, typically aged between six and seven years old, as defined by the Malaysian national education system.	In this study, Year 1 pupils refer to the 30 students selected from a rural primary school in Malaysia who participated in the vocabulary intervention.
Rural Schools:	Rural schools are educational institutions situated in non-urban areas, often characterised by limited infrastructure, lower access to technology, and distinct socio-economic challenges (Yunus et al., 2020).	In this study, rural schools refer specifically to national primary schools located in geographically remote areas with limited digital infrastructure, such as SK Bandar Easter.
Pre-Test and Post-Test	Pre-tests and post-tests are assessment tools used to measure learners' knowledge before and after an instructional intervention.	In this study, the pre-test and post-test are vocabulary assessments developed by the researcher to evaluate pupils' understanding and retention of selected English vocabulary items before and after the blended learning programme.

LITERATURE REVIEW

Introduction

This chapter reviews key literature related to vocabulary acquisition, blended learning, and their application in early childhood education, particularly within rural school contexts. It also identifies gaps in previous research that this study aims to address, and outlines the theoretical foundations that inform the study's conceptual framework.

Vocabulary Acquisition in Early Education

Vocabulary development is a fundamental aspect of young children's literacy and overall language proficiency. A strong vocabulary is essential for reading comprehension, effective communication, and academic success, making it a central component of early language education (Zucker, Cabell, & Pico, 2021). Research highlights the importance of intentional, structured instruction in building vocabulary, particularly for children from disadvantaged or low-literacy backgrounds who may have limited opportunities to acquire new words through incidental exposure (Wasik & Hindman, 2020).

Children typically develop vocabulary through a combination of direct teaching and everyday experiences. However, in rural settings where exposure to English outside of school is limited, classroom instruction plays an even more critical role. It is therefore necessary for teachers to adopt effective strategies that actively engage young learners and foster meaningful vocabulary growth, laying the foundation for their future academic achievement.

Blended Learning in Early Language Education

Blended learning combines conventional face-to-face instruction with digital resources to create more engaging and flexible learning experiences. This approach enables pupils to practise at their own pace, revisit content beyond the classroom, and benefit from multimodal presentation of language input. Studies in early education settings have shown that digital storytelling, interactive games, and multimedia tools improve both vocabulary retention and learner motivation (Salim et al., 2020).

In Malaysia, blended learning aligns with national educational initiatives such as the Roadmap for English Language Education (2015–2025), which promotes differentiated instruction and learner-centred approaches to meet CEFR standards. The CEFR-based curriculum introduced in Malaysian schools emphasises communicative competence and vocabulary development starting at the early stages of schooling. Furthermore, the National Digital Education Policy (2021) encourages the integration of technology into classroom practices to improve digital literacy and enhance learning outcomes. Applying blended strategies in early language education not only addresses pupils' needs but also supports these broader policy objectives.

Vocabulary Instruction in Rural Schools

In rural contexts, vocabulary instruction takes on added importance given the additional challenges faced by pupils in these settings. Rural schools often lack sufficient resources, face shortages of qualified English teachers, and offer limited exposure to English outside the classroom (Yunus, Lau, Mohd Khair, & Mohd Yusof, 2020). These factors contribute to slower vocabulary development compared to pupils in urban schools.

Traditional approaches such as rote memorisation and drills remain widely used in rural classrooms but have been criticised for failing to engage learners effectively or accommodate diverse learning preferences (Lim & Stapa, 2023). Research suggests that more interactive, contextually meaningful methods — such as storytelling, picture-word associations, and the use of visual and audio materials — are more effective in promoting vocabulary acquisition among young learners (Salim et al., 2020). Even in resource-constrained environments, innovations like audio recordings, flashcards, and take-home storybooks have proven to complement classroom learning effectively. These practices align with the principles of blended learning, which extend learning beyond the classroom and foster greater learner autonomy despite infrastructural constraints (Shehzadi & Umaid, 2023).

Theoretical Framework

This study is guided by two complementary theories: Mayer's Cognitive Theory of Multimedia Learning and Vygotsky's Social Constructivist Theory. Together, they provide a foundation for understanding how blended learning can enhance vocabulary development among young learners.

1. Mayer's Cognitive Theory (2005)

Mayer's (2005) theory emphasises that learners understand and retain information more effectively when it is presented through both visual and auditory channels. Using multimedia materials that integrate text, images, and sound supports deeper cognitive processing and improves retention. The blended learning activities designed in this study reflect these principles by incorporating pictorial representations, recorded audio, and written text.

2. Vygotsky's Theory (1978)

Vygotsky's (1978) Social Constructivist Theory highlights the role of social interaction and scaffolding in supporting cognitive development. According to this perspective, learning is most effective when pupils are guided within their Zone of Proximal Development (ZPD) by more knowledgeable others, such as teachers or parents. In this study, teacher-led classroom instruction and family-supported home activities work together to create an environment that fosters both independent and collaborative learning, consistent with Vygotsky's principles.

Conceptual Framework

The conceptual framework of this study builds on the theoretical foundations outlined above, depicting the interaction between instructional strategies, pupil engagement, and vocabulary learning outcomes. It illustrates how blended learning, through the integration of traditional and digital components, addresses the challenges of vocabulary instruction in rural settings. The framework reflects both Mayer's multimedia principles and Vygotsky's emphasis on scaffolding and social interaction.

Conceptual Framework for Vocabulary Acquisition through Blended Learning

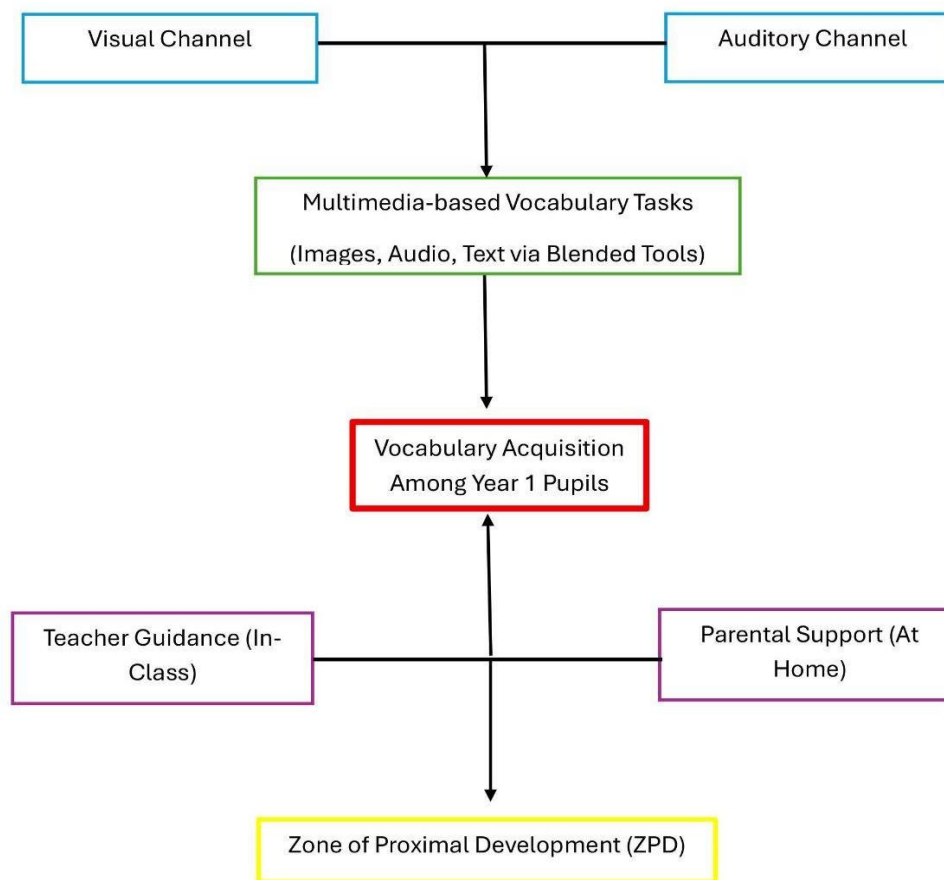


Diagram 1: Conceptual Framework for Vocabulary Acquisition through Blended Learning

Summary

This chapter reviewed literature related to vocabulary acquisition, blended learning, and vocabulary instruction in rural school settings, with a focus on early childhood education in Malaysia. The discussion also outlined the theoretical underpinnings of the study, drawing on Mayer's Cognitive Theory of Multimedia Learning and Vygotsky's Social Constructivist Theory to justify the use of blended learning approaches. While existing research has demonstrated the benefits of blended learning in language education, studies focusing on Year 1 pupils in rural Malaysian schools remain scarce. This study aims to fill that gap by evaluating the impact of blended learning strategies on vocabulary acquisition among this underserved group of learners.

RESEARCH METHODOLOGY

Methodology

This chapter outlines the methodology used to investigate the effectiveness of blended learning strategies in enhancing vocabulary acquisition among Year 1 pupils in a rural Malaysian primary school. It presents the research design, participants, sampling method, instruments, procedures, data analysis techniques, and ethical considerations. The chosen methodology aimed to ensure that the study findings are valid, reliable, and contextually meaningful.

Research Design

This study employed a quasi-experimental design with a mixed-methods approach, combining quantitative and qualitative data collection to evaluate the effectiveness of blended learning on vocabulary acquisition. The

design allowed for the comparison of outcomes between an experimental group (blended learning) and a control group (traditional instruction), as well as the collection of observational data to supplement quantitative findings.

Participants and Setting

The participants were 30 Year 1 pupils from a national primary school in Kota Tinggi, Johor, who were selected through convenience sampling. Pupils were divided equally into experimental and control groups. This sampling method was chosen due to its practicality in school-based research, where random sampling is often not feasible (Creswell & Creswell, 2018). All participants had similar socio-economic backgrounds and limited exposure to English outside of school, making them suitable for the study's objectives.

Sampling Method

Convenience sampling was used to select the participants, a non-probability technique where subjects are chosen based on availability, accessibility, and willingness to participate (Creswell & Creswell, 2018). This method was appropriate given the logistical and administrative constraints commonly encountered in educational research. The use of convenience sampling allowed the researcher to conduct an in-depth, context-specific study within the available setting and resources, though it is acknowledged that this may limit the generalizability of the findings.

Instruments

This study employed two main research instruments: a vocabulary assessment and an observation checklist. These instruments were selected to measure both the cognitive and behavioural outcomes of the blended learning intervention in a way that is appropriate for young learners (Wasik & Hindman, 2020; Zucker et al., 2021). The vocabulary assessment provided quantitative data on pupils' acquisition of targeted English words, while the observation checklist captured qualitative data on their engagement and participation during lessons. Together, these tools allowed for triangulation of findings, thereby strengthening the study's validity (Creswell & Creswell, 2018).

Vocabulary Pre-Test and Post-Test

The vocabulary test was developed by the researcher and adapted from established early vocabulary teaching frameworks (Zucker et al., 2021; Wasik & Hindman, 2020). It was administered twice: once before the intervention as a pre-test and again after the intervention as a post-test, using the same set of items to ensure consistency. The test consisted of three sections:

Picture-word matching	Pupils match pictures with the correct vocabulary word.
Word Identification	Pupils select or say the correct word when shown an image.
Simple Sentence Completion	Pupils choose the correct word to complete a sentence with picture support, where applicable.

The items were aligned with the CEFR-based Year 1 English language curriculum to ensure curriculum relevance. To establish content validity, the instrument was reviewed by two English language educators experienced in early childhood literacy. Their feedback was incorporated to refine the wording and clarity of test items. Test results were scored quantitatively, with the total scores used to analyze vocabulary gains over the intervention period.

Observation Checklist

An observation checklist was used to document pupils' engagement and participation throughout the vocabulary lessons, both in traditional and blended learning sessions. This instrument was adapted from engagement rubrics developed by Cabell and Hwang (2020) for young learners. The checklist included seven behavioural indicators, each rated on a 5-point Likert scale (1 = Not Observed, 5 = Consistently Observed).

The indicators focused on key aspects of classroom engagement, such as:

1. Attention and focus during learning activities
2. Willingness to participate in vocabulary tasks
3. Use of vocabulary in classroom communication
4. Interaction with digital or printed materials

The researcher used the checklist to record observable differences between the control and experimental groups. The qualitative data obtained from these observations supplemented the quantitative findings by providing contextual insights into how pupils engaged with the blended learning activities.

Procedure

The intervention spanned three weeks and followed a structured schedule. In the first week, the researcher briefed pupils and their teacher about the study's purpose and procedures, and obtained consent from parents or guardians. Participants were assigned to either the experimental group, which received blended learning instruction, or the control group, which followed the standard curriculum.

The experimental group engaged in classroom-based vocabulary lessons supplemented with home-based digital activities, such as listening to recorded word lists and accessing QR-linked materials. The control group received only classroom-based vocabulary lessons using traditional methods. At the start and end of the intervention, both groups completed a researcher-developed vocabulary test. Weekly classroom observations were conducted to document pupils' engagement and participation throughout the study.

The intervention was carried out according to the schedule shown in Table 3.1.

Table 3.1: Procedure

3.4.1. Pre-Intervention Phase (Week 1)	During the first week, the researcher provided a briefing to the headmaster, teachers, and parents about the study's objectives, ethical considerations, and research methods. School officials and parents were given consent papers. To determine their beginning vocabulary proficiency, the students subsequently completed a pre-test. Picture-word matching, word identification, and sentence completion tasks that were modified from CEFR-aligned Year 1 English content included in the assessment (Zucker et al., 2021). Later on, the same test would be used as the post-test for comparison.
3.4.2. Intervention Phase (Weeks 2–5)	During this phase, both the experimental group and the control group received vocabulary lesson, but through different delivery methods: 1. Experimental Group (Blended Learning): Pupils received instruction that combined traditional face-to-face methods with digital tools. Activities included: ● Multimedia presentations (images and audio) ● Short videos vocabulary tasks ● At-home practice using mobile audio files (delivered via WhatsApp or QR codes) ● Teacher-guided flashcard games and picture-based quizzes These activities were adapted based on approaches from Katasila & Poonpon (2022) and Salim et al. (2020), who emphasized technology-enhanced engagement for young learners. 2. Control Group (Traditional Learning): Pupils received the same target vocabulary instruction using traditional methods such as textbook exercises, teacher explanation,

	and printed flashcards with no digital components involved. Each group received lessons three times per week during their scheduled English period. Each session lasted approximately 30 minutes.
3.4.3. Post-Intervention Phase (Week 6)	Both groups were given a post-test of the same vocabulary assessment that was used in the pre-test at the conclusion of the intervention. The test results were gathered and documented for further review. The researcher also used the observation checklist (see Appendix A) to conduct observations in classrooms. Throughout the learning sessions, the observations were focused on language usage, participation, and behavioral participation. The test results would be supported by this qualitative data, which would provide insights on how the students participated in and responded to the teaching methods.

The experimental group participated in vocabulary lessons that integrated classroom-based instruction with supplementary digital activities, including listening to recorded word lists and accessing QR code-linked materials at home. The control group received standard vocabulary lessons based on the existing syllabus and teacher-directed instruction. Structured observations of both groups were conducted weekly during classroom sessions. At the end of Week 3, all pupils completed the vocabulary post-test.

Data Collection

Data for this study were collected using two instruments: a researcher-developed vocabulary test and a structured observation checklist. Quantitative data were obtained from the pupils' scores on the pre-test and post-test, which assessed their acquisition of targeted vocabulary items. The same test was administered before and after the intervention to both groups, ensuring consistency of measurement. Scores were recorded and tabulated for statistical analysis.

Qualitative data were collected through classroom observations conducted during the intervention period. The researcher used an observation checklist adapted from Cabell and Hwang (2020) to document pupils' engagement, participation, and use of target vocabulary in both traditional and blended learning sessions. The checklist included seven indicators rated on a 5-point Likert scale, and observations were conducted once per week for each group.

All data were anonymized to maintain participant confidentiality and securely stored for analysis. This systematic collection of both quantitative and qualitative data ensured that the study findings were robust and triangulated.

Vocabulary Tests (Pre-Test and Post-Test)

The vocabulary test was developed by the researcher, drawing on established frameworks for assessing young learners' vocabulary knowledge (Zucker et al., 2021; Wasik & Hindman, 2020). The same test was administered as a pre-test and a post-test to measure gains in vocabulary knowledge.

Picture-word matching	Pupils match pictures with the correct vocabulary word.
Word Identification	Pupils select or say the correct word when shown an image.
Simple Sentence Completion	Pupils choose the correct word to complete a sentence with picture support, where applicable.

The test content was aligned with the CEFR-based Year 1 English curriculum, and its validity was reviewed by two experienced English language educators. Scores from the tests were analysed to assess differences between groups and over time.

Classroom Observations

Classroom observations were conducted weekly to collect qualitative data on pupil engagement, participation, and vocabulary use during lessons. An observation checklist adapted from Cabell and Hwang (2020) was used,

consisting of seven behavioural indicators rated on a 5-point Likert scale (1 = Not Observed, 5 = Consistently Observed).

The observations captured aspects such as attentiveness, willingness to participate, use of target vocabulary, and interaction with learning materials. Data from the checklist complemented the quantitative test results by providing descriptive insights into pupils' behaviour during the intervention.

Data Analysis

Both quantitative and qualitative data analysis methods were applied to address the research objectives. Quantitative data from the pre-test and post-test scores were analysed using IBM SPSS software to identify significant differences within and between groups. Qualitative data from classroom observations were analysed thematically to identify patterns in pupil engagement and participation.

Triangulation was employed to enhance the validity of findings by combining insights from both data sources (Creswell & Creswell, 2018).

Quantitative Data Analysis

Quantitative data were derived from the pupils' scores on the vocabulary pre-test and post-test. The scores were analysed using IBM SPSS software to determine the effectiveness of blended learning strategies on vocabulary acquisition.

Descriptive statistics were first computed to summarise the mean, standard deviation, and score distributions for both the experimental and control groups. Inferential statistics were then applied to test for significant differences:

- A **paired-sample t-test** was used to compare the pre-test and post-test scores within each group, assessing the improvement over time due to the instructional approach (Zucker et al., 2021).
- An **independent-sample t-test** was conducted to compare the post-test scores between the experimental and control groups, determining whether the blended learning intervention led to greater vocabulary gains compared to traditional instruction (Katasila & Poonpon, 2022).

The level of statistical significance was set at $p < 0.05$ for all tests.

Qualitative Data Analysis

Qualitative data were collected through structured classroom observations documented with the observation checklist. The observation notes were analysed thematically to identify recurring patterns and behavioural indicators of engagement and participation.

Thematic analysis involved grouping the observed behaviours under key themes, such as attentiveness, active participation, vocabulary use, and responsiveness to instructional materials. These themes provided deeper insights into how pupils interacted with both the blended and traditional learning environments, complementing the quantitative findings (Cabell & Hwang, 2020).

Ethical Considerations

The study adhered to ethical research standards. Approval was obtained from the school administration, and informed consent was secured from parents or guardians. Participants were assured that their involvement was voluntary and that their identities would remain confidential. Data collected were anonymised and used solely for academic purposes.

Validation of Instruments

Both the vocabulary test and observation checklist underwent expert validation by two English language educators to ensure content appropriateness, alignment with the Year 1 CEFR-based curriculum, and suitability for the pupils' proficiency level. Revisions were made based on their feedback to enhance clarity and validity.

Summary

This chapter has outlined the study's research design, participants, procedures, instruments, data analysis methods, ethical considerations, and instrument validation process. The methodology was designed to ensure rigour, reliability, and relevance to the research objectives. The next chapter presents and analyses the findings from the collected data.

FINDINGS

Introduction

This chapter presents the findings of the study which investigated the effectiveness of blended learning strategies in enhancing vocabulary acquisition among Year 1 pupils in a rural Malaysian primary school. The findings are based on both qualitative data collected through classroom observations and quantitative data obtained by vocabulary pre-tests and post-tests. The findings are organized in line with the research questions and objectives in Chapter 1.

The participants were divided into two groups: an experimental group (P01–P15) which are taught blended learning instruction, and a control group (P16–P30) which received traditional vocabulary instruction.

Descriptive Statistics of Vocabulary Test Scores

The vocabulary assessment consisted of three sections which is picture-word matching, word identification, and sentence completion. The total score of 15 marks. Descriptive statistics were calculated to examine pupils' performance before and after the intervention.

Table 4.1 Descriptive Statistics of Vocabulary Pre-Test and Post-Test Scores

Group	N	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD
Experimental	15	9.47	2.03	10.67	1.45
Control	15	8.93	1.67	9.60	1.64

N = number of pupils; SD = standard deviation.

Descriptive statistics were calculated to examine pupils' vocabulary performance before and after the intervention. As shown in Table 4.1, the experimental group recorded a pre-test mean score of 9.47 (SD = 2.03), which increased to 10.67 (SD = 1.45) in the post-test. On the other hand, the control group showed a smaller improvement, with mean scores increasing from 8.93 (SD = 1.67) to 9.60 (SD = 1.64).

According to the descriptive findings, pupils who were exposed to blended learning strategies showed higher vocabulary improvements than students who were taught using traditional approaches. This suggests that blended learning may be useful in helping young learners acquire vocabulary.

Paired-Sample t-Test (Within Groups)

Paired-sample t-tests were conducted to examine whether there was a statistically significant difference between pre-test and post-test scores within each group.

Table 4.2 Paired-Sample t-Test Results for Vocabulary Scores

Group	N	Mean Difference	t	df	p
Experimental	15	1.20	3.15	14	0.007
Control	15	0.67	2.09	14	0.055

A paired-sample t-test was conducted to compare pupils' vocabulary scores before and after the intervention. Results presented a statistically significant improvement in the experimental group, $t(14) = 3.15$, $p = .007$. This suggests that the blended learning intervention significantly enhanced pupils' vocabulary acquisition.

In contrast, the control group did not show a statistically significant improvement, $t(14) = 2.09$, $p = .055$, indicating that traditional instruction alone did not result in meaningful vocabulary gains.

Independent-Sample t-Test (Between Groups)

Table 4.3 Independent-Sample t-Test Comparing Post-Test Scores

Group	N	Mean	SD
Experimental	15	10.67	1.45
Control	15	9.60	1.64

t	df	p
1.89	27.58	0.069

An independent-sample t-test was conducted to compare post-test vocabulary scores between the experimental and control groups. Although the experimental group achieved a higher mean score ($M = 10.67$, $SD = 1.45$) than the control group ($M = 9.60$, $SD = 1.64$), the difference was not statistically significant, $t(27.58) = 1.89$, $p = .069$.

The higher mean scores in the experimental group indicate that blended learning may have improved vocabulary acquisition, even though this was not statistically significant. The short intervention period and small sample size could be contributing factors to this result.

Classroom Observation Findings

Throughout the intervention period, classroom observations were carried out using a structured observation checklist to assess students' participation, engagement, and use of the target vocabulary. Behavioural indicators including attentiveness, willingness to participate, interaction with learning materials, and the use of vocabulary during learning activities were the main focus of the observations.

The results revealed that the experimental and control groups' learning behaviors differed significantly. During vocabulary lessons, students in the experimental group showed higher levels of interest and focus, especially when multimedia components like pictures, audio files, and QR-linked items were used. These students were more eager to actively participate in both individual and group activities, respond to teacher instructions, and attempt pronouncing the target word. Similar findings were reported by Lim and Stapa (2023), who discovered that young learners' interest and involvement in vocabulary acquisition were enhanced by digital technologies.

In addition, pupils in the experimental group showed greater independence and confidence when engaging with vocabulary tasks. Several pupils were observed checking over vocabulary items during follow-up activities and attempting to use target words without direct teacher assistance. This aligns with findings by Shehzadi and Umaid (2023), who reported that blended learning environments provide repeated exposure and scaffolding that support vocabulary retention and learner autonomy.

On the other hand, students in the control group showed more passive learning behaviors. Their engagement was mainly restricted to repetition-based activities like vocal responses, despite the fact that they often followed teacher instructions and completed tasks as assigned. There was little usage of vocabulary and a strong dependence on guidance from teachers. Textbooks and printed flashcards were the only learning resources available for interaction, providing limited opportunities for extended practice. Salim et al. (2020) and Yunus et al. (2020) have noted similar trends of low involvement in typical rural classroom settings.

Although the experimental group showed greater vocabulary proficiency and increased engagement, certain quantitative measures showed only slight differences between the groups. This could be explained by a number of contextual factors, such as the intervention's short duration, inconsistent internet availability, and restricted access to digital devices. According to earlier research, infrastructure limitations frequently prevent rural schools from fully implementing blended learning methodologies, which has an impact on learning outcomes (Donald & Hashim, 2025; Zulkflee et al., 2022). Additionally, studies indicate that brief interventions might not be enough to generate statistically significant differences, especially for young learners who need extended

exposure to solidify their vocabulary (Wasik & Hindman, 2020; Zucker et al., 2021).

Overall, despite environmental limitations, the results of the classroom observations support the quantitative findings by demonstrating how blended learning improved student motivation, engagement, and participation. Even though there were only slight statistical differences between the groups, these qualitative insights may justify the reason the experimental group showed greater vocabulary acquisition.

Summary of Findings

This chapter presented the findings of the study on the effectiveness of blended learning strategies in enhancing vocabulary acquisition among Year 1 pupils in a rural Malaysian primary school. Quantitative data from vocabulary pre-tests and post-tests, together with qualitative data from classroom observations, were analysed to address the research objectives and research questions.

The descriptive analysis showed that pupils in the experimental group revealed higher improvement in vocabulary scores compared to the control group. Paired-sample t-test results showed a statistically significant increase in vocabulary performance among pupils exposed to blended learning, while the improvement observed in the control group was not statistically significant. These findings suggest that blended learning strategies were effective in supporting vocabulary acquisition over the intervention period (Lim & Stapa, 2023; Zucker et al., 2021).

However, the independent-sample t-test comparing post-test scores between the experimental and control groups revealed only a marginal difference. Although the experimental group achieved higher mean scores, the difference was not statistically significant. This outcome may be attributed to environmental limitation such as limited access to digital technology, infrastructural challenges in rural schools, and the short duration of the intervention, which have been identified as factors influencing the effectiveness of blended learning implementation (Donald & Hashim, 2025; Zulkflee et al., 2022; Wasik & Hindman, 2020).

In addition to the quantitative data, qualitative findings from classroom observations provided new perspectives. Compared to the control group, students in the experimental group showed higher levels of interest, engagement, and active participation in vocabulary acquisition activities. These findings support earlier studies showing how interactive learning settings and multimedia materials can improve young learners' engagement and vocabulary use (Salim et al., 2020; Shehzadi & Umaid, 2023).

Overall, the findings indicate that blended learning strategies positively influenced vocabulary acquisition and learner engagement among Year 1 pupils in a rural school context. Despite marginal statistical differences between groups, the combined quantitative and qualitative evidence suggests that blended learning has strong potential as an instructional approach for vocabulary development when environmental limitations are addressed and sufficient instructional time is provided.

DISCUSSION

Introduction

This chapter discusses the findings of the study in relation to the research objectives and research questions. The discussion integrates relevant theoretical perspectives and latest research with the quantitative and qualitative findings presented in Chapter 4. In addition, the chapter summarizes the study's weaknesses, provides suggestions for further research, and underlines the findings' significance for teaching English in rural primary schools.

Discussion of Findings Based on Research Questions

Research Question 1: How effective are blended learning strategies in enhancing vocabulary acquisition among Year 1 pupils in a rural Malaysian school?

The results indicate that the blended learning techniques improved Year 1 students' vocabulary development. The experimental group's vocabulary scores improved by a significant margin from the pre-test to the post-test,

indicating that the use of digital resources in conjunction with live instruction helped students' vocabulary development. This improvement could be credited to students' regular exposure to vocabulary items using multimedia components like audio recordings, images, and QR-linked materials, which enabled them to practice vocabulary outside of the classroom.

These results are in line with recent research revealing that blended learning settings enhance young learners acquire language by providing flexible learning opportunities and multimodal input (Katasila & Poonpon, 2022; Lim & Stapa, 2023). By providing instructional support outside of school hours, blended learning may compensate for the lack of incidental opportunities for learning in early language acquisition contexts, particularly in rural areas where English exposure is limited (Law & Aziz, 2022).

Research Question 2: Is there a significant difference in vocabulary acquisition between pupils taught through blended learning strategies and those taught through traditional methods?

According to the findings, students in the experimental group exceeded those in the control group in terms of post-test mean scores. However, there was only a slight and insufficiently significant difference between the two groups. Although this might seem like a limitation at first, it represents actual contextual difficulties that are frequently encountered in rural learning environments.

The insignificant results could have been due to a number of factors. First, students' participation in home-based digital activities may have been challenged by restricted access to digital devices and inconsistent internet availability. Infrastructure limitations have been repeatedly pointed out in research as an important barrier to the successful adoption of blended learning in rural schools (Donald & Hashim, 2025; Zulkflee et al., 2022). Second, young learners, who usually need prolonged and repeated exposure to develop solid word knowledge, could not have had enough time for significant vocabulary consolidation due to the short intervention length (Wasik & Hindman, 2020; Zucker et al., 2021).

Despite these limitations, the higher mean scores and positive engagement observed among the experimental group suggest that blended learning holds potential for improving vocabulary acquisition when implemented over a longer period and supported by adequate resources.

Discussion in Relation to Theoretical Framework

The results of this study provide strong support for Mayer's Cognitive Theory of Multimedia Learning, which argues that when information is provided through both visual and auditory channels, learners process it more efficiently. In this study, students were able to acquire vocabulary input via an array of modalities due to the blended learning approach's combination of images, audio recordings, and short videos. For young learners who benefit from realistic visual representations, this multimodal exposure probably reduced cognitive strain and enabled improved encoding of new vocabulary items (Mayer, 2020; Lim & Stapa, 2023).

Additionally, Mayer's theory highlights the significance of coherence and redundancy principles, which state that learning materials should be easy to comprehend and targeted to prevent overburdening students. In line with guidelines for teaching vocabulary to young children, the blended learning activities used in this study were purposefully made to be concise, repeated, and visually supported. Despite environmental limitations such as restricted digital access, this design may be responsible for the notable improvement noticed in the experimental group (Zucker et al., 2021; Wasik & Hindman, 2020).

The results also support Vygotsky's Social Constructivist Theory, which emphasizes the importance of scaffolding and social interaction in cognitive development. During the intervention, teachers provided scaffolding for classroom instruction, while parents or guardians provided scaffolding for at-home digital activities. Through guided practice, feedback, and reinforcement of vocabulary use, these interactions helped students learn within their Zone of Proximal Development. Such organized learning environments are especially helpful for young learners in rural settings, where independent exposure to English is restricted, according to recent studies (Shehzadi & Umaid, 2023; Yani et al., 2023).

Despite the small statistical differences between groups, blended learning had a positive effect on vocabulary

acquisition and engagement, which can be explained by these theoretical perspectives considered together. According to the concepts', blended learning has the potential for creating improved educational results if it is implemented consistently and with sufficient resources.

Implications of the Study

The results of this study have a number of significant implications for the development of curriculum, policy implementation, and educational practice. The study shows that advanced or expensive technology is not necessary for blended learning to be effective for English language instructors, especially those working in rural elementary schools. Simple tools such as audio recordings, QR codes, and visual aids can significantly enhance vocabulary learning and pupil engagement when used strategically (Lim & Stapa, 2023; Yunus et al., 2020).

Instead of implementing blended learning to replace traditional instruction, teachers are encouraged to incorporate it as an additional strategy. Students are given greater opportunities to practice vocabulary on their own by integrating teacher-led lessons with digital reinforcement. This is crucial in circumstances when students have limited exposure to English outside of the classroom. This approach also supports differentiated learning, as pupils can revisit materials at their own pace according to their learning needs (Law & Aziz, 2022).

The results emphasize the importance for curriculum developers to create educational resources that maintain a balance between traditional pedagogy and technological support. Particularly for early primary learners, curriculum materials should provide instructions on how to use digital resources in a relevant way to support vocabulary development. According to Zulkflee et al. (2022) and Donald & Hashim (2025), the study offers empirical support for national initiatives like the National Digital Education Policy, while also emphasizing the necessity of equitable access to technology in rural schools to ensure their successful implementation.

Limitations of the Study

This study has a number of limitations that need to be acknowledged despite its beneficial effects. First, the results are not as broadly applicable as they might seem because the study was limited to a single rural primary school with a small sample size. Although the findings offer insightful information on the efficacy of blended learning in this particular setting, they might not accurately reflect other rural or urban school environments with differing infrastructure.

Second, the duration of the intervention was rather short. Acquiring vocabulary is a lengthy procedure that calls for frequent practice and long-term exposure, especially for young learners. Given that longer implementation periods have been proven to create improved learning results, the short length of the intervention may have contributed to the marginal difference between the experimental and control groups (Wasik & Hindman, 2020; Zucker et al., 2021).

Third, external factors such as pupils' access to digital devices, internet connectivity, and home learning support varied among participants and were beyond the researcher's control. These factors may have influenced the extent to which pupils engaged with the blended learning activities, particularly during home-based practice (Donald & Hashim, 2025).

Recommendations for Future Research

Based on the limitations and findings of this study, several recommendations are proposed for future research. Future studies should involve a larger sample size across multiple rural schools to improve the generalisability of findings and allow for more thorough statistical analysis. Extending the duration of the intervention is also recommended to examine the long-term effects of blended learning on vocabulary acquisition and retention.

Future studies could also examine how blended learning affects other aspects of language development, such as speaking skills, listening skills, and reading comprehension. Evaluating how parents and teachers perceive the implementation of blended learning may also offer insightful information on the practical difficulties and support systems needed for successful adoption in rural settings (Yani et al., 2023; Law & Aziz, 2022).

Conclusion

In conclusion, this study demonstrates that blended learning strategies positively influence vocabulary acquisition and learner engagement among Year 1 pupils in a rural Malaysian primary school. Although the difference between blended learning and traditional instruction was marginal, the overall findings indicate that blended learning offers meaningful instructional benefits, particularly in contexts where exposure to English is limited.

The study highlights that the depth of learning results can be impacted by environmental limitations such as restricted access to technology and brief intervention times. However, blended learning has the potential to improve early vocabulary development and reduce educational gaps between rural and urban learners when accompanied by suitable scaffolding, multimodal input, and consistent implementation. These results highlight how crucial it is to keep funding digital infrastructure and teacher assistance in order to optimize the advantages of blended learning in rural primary school.

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APPENDIX

Appendix A : Materials for Vocabulary Test

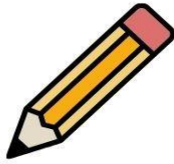
Vocabulary Test Worksheet

Name: _____

Group: _____

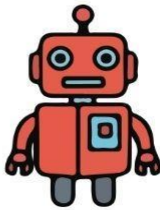
Section A: Picture-Word Matching

Circle the correct answer according to the picture.



1. What is this?

- A) Pen B) Pencil C) Ruler



2. What is this?

- A) Toy Robot B) Car C) Monster



3. What is this?

- A) Cake B) Peanut C) Pizza



4. What is this?

- A) Ice B) Ice Cream C) Lolipop



5. What is this?

- A) Lion B) Zebra C) Tiger

Vocabulary Test Worksheet

Name: _____

Group: _____

Section B: Word Identification

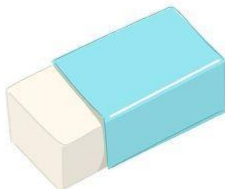
Look at the picture and write the correct word.



1. What is this?



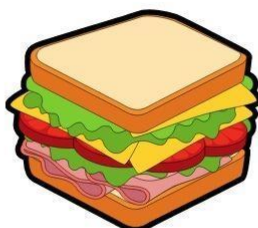
2. What is this?



3. What is this?



4. What is this?



5. What is this?

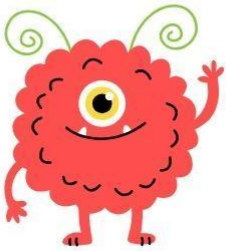
Vocabulary Test Worksheet

Name: _____

Group: _____

Section C: Sentence Completion

Fill in the blank with the correct word.



1. This is a ____ colour ____.



2. This is a ____.



3. This is a toy ____.



4. This is a ____ colour ____.



5. This is a ____ colour ____.

Appendix B: Pre- Test Score Sheet

This score sheet is used to record pupils' performance in the vocabulary pre-test

Each pupil's score is based on three sections: Picture–Word Matching (5 marks), Word Identification (5 marks), and Sentence Completion (5 marks). The total score is 15 marks.

Pupil's Name	Picture–Word Matching (Pre-Test) /5 Marks	Word Identification (Pre-Test) /5 Marks	Sentence Completion (Pre-Test) /5 Marks	Total (Pre-Test) /15 Marks	Remarks
P01	3	2	2	7	
P02	4	2	2	8	
P03	3	3	2	8	
P04	2	2	3	7	
P05	5	3	3	11	
P06	5	4	4	13	
P07	5	5	3	13	
P08	3	2	3	8	
P09	4	3	3	10	
P10	4	3	2	9	
P11	5	4	2	11	
P12	5	2	3	10	
P13	4	2	3	9	
P14	5	4	2	11	
P15	3	1	3	7	
P16	4	3	3	10	
P17	4	4	3	11	
P18	3	3	2	8	
P19	3	3	2	8	
P20	2	3	3	8	
P21	1	2	3	6	
P22	4	4	3	11	
P23	5	4	2	11	
P24	4	3	2	9	
P25	5	2	3	10	
P26	3	2	2	7	
P27	4	3	2	9	
P28	2	2	3	7	
P29	1	3	4	8	
P30	4	3	4	11	

Appendix C: Post- Test Score Sheet

This score sheet is used to record pupils' performance in the vocabulary pre-test

Each pupil's score is based on three sections: Picture–Word Matching (5 marks), Word Identification (5 marks), and Sentence Completion (5 marks). The total score is 15 marks.

Pupil's Name	Picture–Word Matching (Post-Test) /5 Marks	Word Identification (Post-Test) /5 Marks	Sentence Completion (Post-Test) /5 Marks	Total (Post-Test) /15 Marks	Remarks
P01	4	3	3	10	
P02	4	2	4	10	
P03	4	3	3	10	
P04	3	2	4	9	
P05	5	4	3	12	
P06	5	3	4	12	
P07	5	4	3	12	
P08	4	3	3	10	
P09	4	4	3	11	
P10	4	3	3	10	
P11	5	3	2	10	
P12	5	3	4	14	
P13	4	3	4	11	
P14	5	2	4	11	
P15	4	1	3	8	
P16	4	3	4	11	
P17	4	4	3	11	
P18	3	3	2	8	
P19	4	4	4	12	
P20	3	3	3	9	
P21	2	2	3	7	
P22	4	3	4	11	
P23	3	4	2	11	
P24	3	3	2	8	
P25	4	2	3	9	
P26	3	3	2	8	
P27	3	4	3	10	
P28	2	3	4	9	
P29	1	3	4	8	
P30	4	4	4	12	

Appendix D: Post - Test of Vocabulary Test Worksheet (Google Form)



Vocabulary Test Worksheet

This tests consists **3 sections**. Answer all the sections.

Section A: Picture-Word Matching

Section B: Word Identification

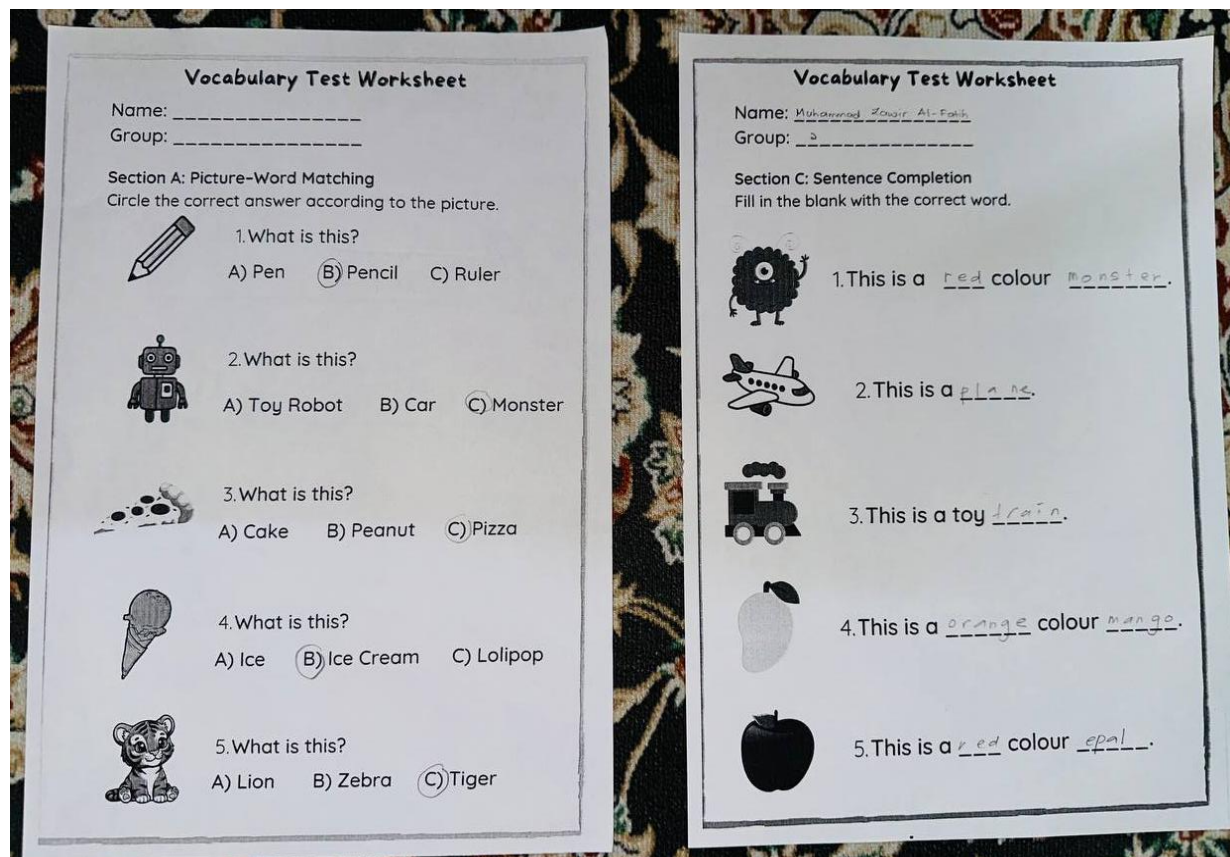
Section C: Sentence Completion

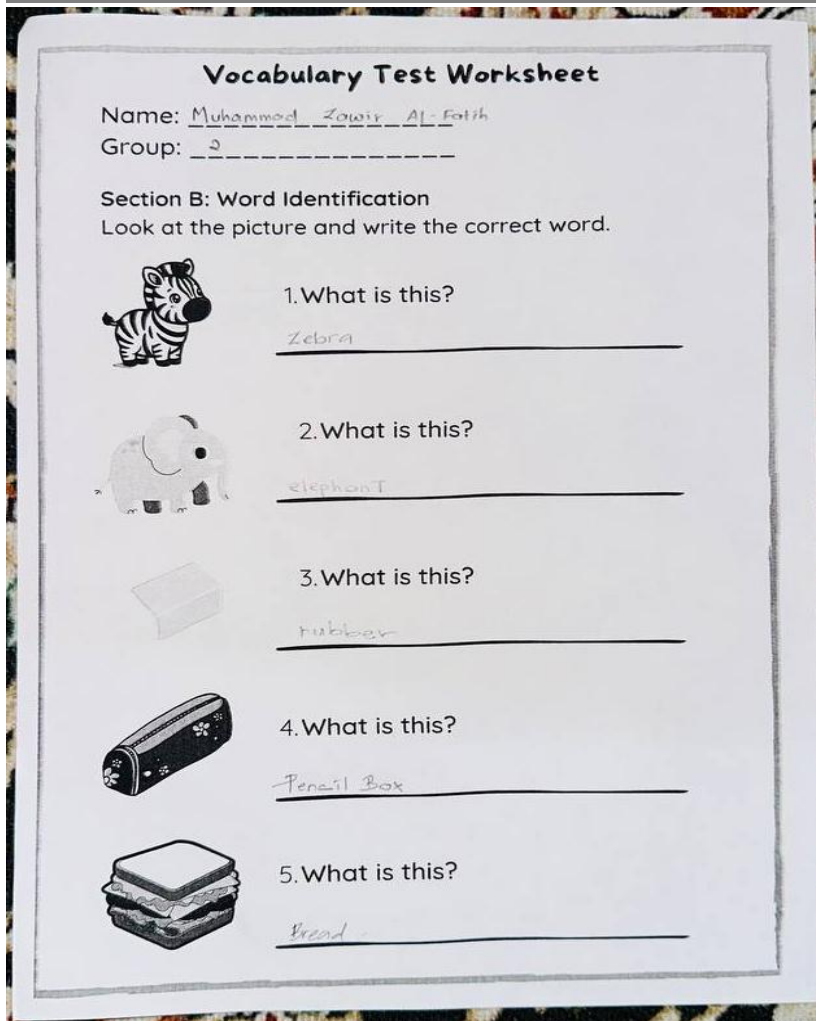
* Indicates required question

Name: *

Your answer

Appendix E: Pre - Test of Vocabulary Test Worksheet (Worksheet)





Appendix F: Brief Intervention Outline for Vocabulary Instruction

Instructional Aspect	Traditional Instruction (Control Group)	Blended Learning Instruction (Experimental Group)
Teaching Approach	Conventional face-to-face classroom instruction	Combination of face-to-face instruction and digital learning
Mode of Delivery	Fully classroom-based	Classroom-based instruction supplemented with home-based digital activities
Vocabulary Introduction	Teacher explanation using textbook and board	Teacher explanation using picture flashcards and oral modelling
Learning Activities	Pronunciation drills, repetition of words, worksheet-based exercises (e.g. matching words, filling in blanks)	Guided classroom practice followed by digital reinforcement activities
Use of Teaching Materials	Textbooks and printed worksheets only	Printed materials, audio recordings, and QR code-linked digital resources
Out-of-Class Learning	No additional learning outside class	Pupils review vocabulary at home using audio recordings and QR code materials with parental support
Learner Engagement	Teacher-directed with limited learner autonomy	Increased learner autonomy through self-paced digital practice
Target Vocabulary	Same set of Year 1 vocabulary items aligned with the curriculum	Same set of Year 1 vocabulary items aligned with the curriculum
Purpose of Instruction	To teach vocabulary through traditional methods	To enhance engagement and reinforce vocabulary learning through multimodal exposure

Appendix G: Observation Checklist

This checklist is designed to record pupils' engagement, participation, and interaction during vocabulary lessons. It will be used to compare behavioural indicators between traditional and blended learning sessions.

Indicator:

1 = Not Observed

2 = Rarely

3 = Sometimes

4 = Often

5 = Consistently

Pupil pays attention during activities					
Pupil willingly participates in vocabulary tasks					
Pupil uses target vocabulary when prompted					
Pupil interacts with digital tools (tablet/QR/audio)					
Pupil interacts with printed materials (flashcards, worksheets)					
Pupil shows enthusiasm and motivation					
Pupil collaborates with peers during activities					
Pupil responds positively to teacher feedback					
Pupil remains on task without frequent distractions					
Pupil demonstrates confidence when using new vocabulary					