

A Study on the Use of Vocab Detectives: Pictorial Vocab Learning Mission Pack to Enhance Form 3 ESL Learners' Vocabulary Learning

Armeen Iskandar bin Suhar[#], Noraini binti Zulkepli*, Siti Shuhaida binti Shukor[#], Intan Safinas binti Mohd Ariff Albakri[#], Tan Hooi Syn[#]

[#]Faculty of Languages and Communication, University Pendidikan Sultan Idris

*Corresponding Author

DOI: <https://dx.doi.org/10.47772/IJRISS.2025.910000709>

Received: 02 November 2025; Accepted: 10 November 2025; Published: 21 November 2025

ABSTRACT

This study intends to investigate the effectiveness of Vocab Detectives, a pictorial vocabulary learning mission pack to enhance vocabulary learning among ESL learners. A quantitative research design was employed; with 30 form 3 ESL learners selected through purposive sampling. The data for this study were collected using vocabulary tests administered before and after the intervention, followed by a survey questionnaire collecting learners' perceptions of the intervention in terms of explicit vocabulary lesson, personal experiences, and teacher's instruction. Inferential statistics of the pre- and post-test scores obtained using t-test suggest that the learners improved by 28.67% in their average total score, from 61.67% in the pre-test to 90.33% in the post-test. The findings show that the intervention used in the study has the potential to improve ESL learners' vocabulary acquisition. Similarly, a descriptive analysis of the learners' perceptions of the intervention indicates an overall positive perception, with a high degree of agreement ($M > 3.668$) across all items in the survey questionnaire. Based on the findings, it can be concluded that Pictorial Vocab Learning Mission Pack is effective to help ESL learners' vocabulary acquisition. The implication of this study is it extends the potential of applying the pictorial vocabulary approach to transform English language lessons into an excitement-filled, interactive and practical learning environment.

Keywords— vocabulary learning, ESL learners, vocabulary acquisition, English language teaching, learners' perception

INTRODUCTION

Past empirical studies have proven the relationship between vocabulary acquisition and successful second language learning. This provides convincing evidence of the importance for learners to develop a strong foundation in vocabulary, as it directly impacts their overall learning experience, language proficiency and academic performance. However, [5] state that many ESL learners in Malaysia face difficulties enhancing their vocabulary acquisition as they struggle with limited vocabulary exposure beyond the classroom.

Studies by [10], [14] both suggest that low vocabulary acquisition has a negative impact on learners' proficiency in all four language skills. In relation to this, researchers such as [9] and [15] emphasize on the importance of explicit teaching of vocabulary in the classroom, as implicit teaching might not yield the desired outcomes.

Teaching approaches in recent years have undergone a significant revolution with the advancement of digital technology [3]. This enables the incorporation of multimodal learning resources, such as images, visual aids, audio and video elements to enhance the teaching and learning experience. The shift from traditional schooling to online education due to the COVID-19 pandemic [7] made virtual and digital learning even inevitable for the majority of learners and educators worldwide. With that, teachers can now maximise the utilisation of digital tools for vocabulary learning, as they provide various ways for learners to learn and practice using the new words, while also allowing for an interactive and personalised learning experience [2].

Various past studies have explored the potential of gamification in vocabulary learning using the pictorial vocabulary approach. It involves triggering existing knowledge through the use of images, icons, or illustrations to link the new vocabulary with learners' prior knowledge [16]. Reference [7] demonstrated the effectiveness of the pictorial vocabulary learning model in improving vocabulary range among Malaysian lower secondary ESL learners. However, its gamified application in the form of active mission-based learning remained possible for further exploration.

While past studies have highlighted the importance of vocabulary acquisition and the effectiveness of pictorial vocabulary learning, there is limited empirical evidence on their effectiveness when approached in the form of active mission-based classroom learning. For that reason, this study intends to address this gap by investigating the impact of the Vocab Detective pictorial vocab mission pack on vocabulary acquisition among ESL learners.

To achieve the aim, the research objectives are:

1. To find out the effectiveness of Vocab Detectives Pictorial Vocab Learning Mission Packs to enhance Form 3 ESL learners' vocabulary learning.
2. To explore Form 3 ESL learners' perception of the use of Vocab Detectives Pictorial Vocab Learning Mission Packs to enhance their vocabulary learning.

Following the outlined objectives, the research questions are:

1. How does the use of Vocab Detectives Pictorial Vocab Learning Mission Packs enhance Form 3 ESL learners' vocabulary learning?
2. What are the Form 3 ESL learners' perceptions of the use of Vocab Detectives Pictorial Vocab Learning Mission Packs to enhance their vocabulary learning?

This study will offer meaningful insights for ESL educators looking to improve vocabulary teaching and learning approaches. By presenting the effectiveness of the pictorial vocabulary approach and mission-based vocabulary activities, it adds to the expanding research on visual and gamified approaches in ESL learning. Not just that, the study also provides practical suggestions on the incorporation of interactive and learner-centred tools that can be used in ESL classrooms to enhance classroom engagement and an impact-driven vocabulary learning experience among ESL learners.

LITERATURE REVIEW

Several past studies have investigated and found evidence of the effectiveness of pictorial-based approaches in enhancing vocabulary acquisition among ESL learners. For example, [6] employed the Malaysian-based Pictorial Vocabulary Learning Model and found that learners' performance on the post-test increased significantly by 141.05%, exemplifying the effectiveness of the pictorial vocabulary approach in enhancing learners' vocabulary acquisition. Meanwhile, [11] found that learners improved their vocabulary retention by 44.07% upon exposure to associating new words with pictures, aided by a self-made picture dictionary. This study highlights the effectiveness of visual aids in enhancing learners' vocabulary retention and making English learning more engaging.

Similarly, [13] developed the English Vocabulary with a Picture (EVP) application and discovered that learners using the application outperformed their counterparts in the post-test, supporting their claim that the EVP can be a good supplementary tool for vocabulary learning. In another study, [4] demonstrated the effectiveness of the pictorial vocabulary approach as the study aimed to investigate the effects of the Oxford Picture Dictionary on 50 learners' vocabulary expansion. The results not only showed that the learners improved their vocabulary scores, but they also improved their pronunciation, reading and speaking skills.

Reference [7] addressed the issue of learners possessing limited vocabulary knowledge by implementing a pictorial-based vocabulary learning module and received positive results from learners' improvement in vocabulary knowledge. Reference [8], on the other hand, studied the effect of providing explicit vocabulary instructions on learners' vocabulary learning using 10 different techniques and found that the participating

learners improved significantly in their post-test performance ($p < 0.05$), illustrating the effectiveness of explicit vocabulary learning instruction and the importance of directly addressing vocabulary to the learners. Collectively, these studies have highlighted that the pictorial vocabulary strategies are proven effective in improving retention, motivating learners and improving their English language learning experience.

RESEARCH METHODOLOGY

A quantitative research design was employed as the research approach in this study to investigate the impacts of Vocab Detectives in enhancing vocabulary learning among a group of lower secondary school ESL learners. This research approach is selected because it enables the researcher to collect accurate and measurable findings through numerical data [12], making the results empirical and statistically presentable. Using purposive sampling, thirty Form 3 ESL learners were selected to take part in the study.

Two research instruments were employed in the present study. The first research instrument, which was intended to obtain data on the effectiveness of the intervention, is a pre and post-tests. The second research instrument i.e. a questionnaire was used to find out the learners' perceptions of the intervention. The questionnaire comprises three parts: vocabulary lesson, personal experience, and teacher's instruction, with each section consisting of statements to help participants provide their feedback on the intervention using a five-point Likert scale. To ensure the reliability of the questionnaire, the Cronbach's Alpha test was conducted. From the test, the items recorded an excellent Cronbach's Alpha coefficient of 0.87. This score, which is higher than 0.8, suggests effectiveness and a high degree of internal consistency.

To analyse the data, results from the pre-test and post-test were analysed using inferential statistics by running a t-test using the Statistical Package for the Social Sciences (SPSS) to calculate the mean, standard deviation, t-value and p-value. Apart from that, results from the survey questionnaire were analysed using descriptive statistics by calculating the mean and standard deviation to assess and present the learners' perception towards the use of the intervention.

FINDINGS

Table 1 Indicators for Mean Score Interpretation

Mean	Level
3.668 - 5.000	High
2.334 - 3.667	Medium
1.000 - 2.333	Low

To interpret the mean score obtained from each item in the Learner Feedback Survey Questionnaire responses, this study adopts the mean score interpretation by Nugent et al. (2001), as cited by [9].

Table 2 Findings for The Pre-Test and Post-Test Results

Item	Mean (M)	Standard Deviation (SD)	Average (%)
Pre-Test (N = 30)	12.333	2.905	61.67
Post-Test (N = 30)	18.167	1.552	90.33

Table 2 presents the statistics for the pre-test scores ($n = 30$), which revealed a mean score of 12.333 with a standard deviation (SD) of 2.905 and a 61.67% average score, which showcases a moderate level of vocabulary knowledge before the intervention, with some variability in the learners' performance. For the post-

test (n=30) a mean score of 18.167 with a standard deviation (SD) of 1.552 and an average percentage score of 90.33% obtained by the learners following the intervention. These results reflect a substantial improvement in vocabulary performance, and the reduction in score variability indicates a more consistent performance among the learners.

Table 3 Comparison of Pre-Test and Post-Test

Item	Mean (M)	Standard Deviation (SD)	t	df	p-value	M Difference (M2 – M1)	Total Improvement (%)
Pre-Test (N = 30)	12.333	2.905	-14.638	29	< 0.001	5.83	61.67

The figures presented in Table 3 serve to compare the mean scores of the pre-test and post-test to highlight the differences in learners' performance following the intervention. The mean score difference of 5.83 highlights a visible improvement in learners' overall scores in the post-test as compared to the pre-test. This can also be translated to a 28.67% improvement in the learners' average total score, rising from 61.67% in the pre-test to 90.33% in the post-test, based on the full mark of 20. Besides, the noticeable reduction of standard deviation from 2.905 (pre-test) to 1.552 (post-test) signifies a clear improvement in the consistency of learner performance after the intervention.

Additionally, a paired-sample t-test was conducted to find out whether the difference between the pre-test and post-test scores was statistically significant. The analysis produced a t-value of -14.638 with 29 degrees of freedom (df) and a p-value less than 0.001 ($p < 0.001$). According to [1], a p-value of <0.05 was considered statistically significant, which implies that such an improvement is unlikely to have occurred by chance.

Table 4 Part 1 - Vocabulary Lessons

No.	Item	Mean	SD
1.	The vocabulary tasks are appropriate and match my level of English proficiency.	4.11	0.45
2.	The instructions are clear and easy to follow.	4.21	0.50
3.	The vocabulary lessons are appropriately challenging and help me learn better.	4.14	0.46
4.	The vocabulary lessons are interesting.	4.17	0.41
5.	The vocabulary tests reflect the words I learned in class.	4.14	0.49

The first part of the survey questionnaire aimed at identifying learners' feedback on the vocabulary lesson where the intervention was carried out. Based on the analysis of learner feedback presented in Table 4, item 2 obtained the highest mean score ($M = 4.21$; $SD = 0.50$), suggesting that learners appreciate clear and easy instructions, which enable them to understand the lesson and participate in the lesson activities. However, while item 1 obtained the lowest mean score ($M = 4.11$; $SD = 0.45$), which implies that some learners may feel that the tasks are either too difficult or too easy for them, the mean score of 4.11, which is greater than 3.668, still indicates positive feedback from the majority of learners. Generally, these figures illustrate that learners responded positively to the vocabulary lesson overall and highlight the effectiveness of the intervention in promoting active classroom participation and facilitating vocabulary learning.

Table 5 Part 2 – Personal Experience

No.	Item	Mean	SD
1.	I have improved my English vocabulary through these lessons.	4.31	0.42
2.	I can remember new words better after each lesson.	4.20	0.42
3.	I understand how to use new words in context.	4.20	0.48
4.	I feel more confident using new words in my writing and speaking.	4.33	0.37
5.	These lessons help me learn vocabulary more effectively than usual methods	4.24	0.34
6.	I find the pictorial vocabulary tasks motivating.	4.24	0.34
7.	The mission-style vocabulary activities make learning fun.	4.10	0.44
8.	I am more interested in learning English vocabulary because of these lessons.	4.29	0.45
9.	I feel proud when I complete each vocabulary mission.	4.21	0.50
10.	These lessons encourage me to learn vocabulary on my own outside the classroom.	4.16	0.58

For the second part, the items included in the questionnaire aimed at identifying learners' feedback on their personal learning experience after the lesson where the intervention was executed. The data analysis reveals that item 4, which states, 'I feel more confident using new words in my writing and speaking', displays the highest mean score ($M = 4.33$; $SD = 0.37$) among the 10 items of this section. This data indicates that learners reported feeling more confident using the new vocabulary in their writing and speaking activity, and suggests that the intervention not only effectively taught vocabulary, but also increased their confidence in applying the new vocabulary in real-life situations.

On the other hand, item 7, which states, 'The mission-style vocabulary activities make learning fun' obtained the lowest mean score ($M = 4.10$; $SD = 0.44$). From this data, we can infer that although the score is still within the highly positive range (>3.668), which indicates that the majority of the learners agree with the statement, some learners may not find the gamified approach of vocabulary learning enjoyable or engaging as others. This may be due to the learners' personal learning style and preferences, as some learners might prefer the traditional or structured learning approach. In general, the results from this section indicate that the majority of the learners had a positive perception in terms of their personal learning experience with the execution of the intervention, with all items recording mean scores of above 4.0, reflecting high levels of agreement.

Table 6 Part 3 – Teacher's Instruction

No.	Item	Mean	SD
1.	The teacher gives clear explanations of new vocabulary.	4.19	0.48
2.	The teacher uses helpful examples to explain word meanings.	4.09	0.48
3.	The teacher checks if I understand the new vocabulary.	4.03	0.49
4.	The teacher supports me when I face difficulty with	4.15	0.43

	vocabulary tasks.		
5.	The teacher encourages me to use new vocabulary in class.	4.23	0.40

The final part of the survey questionnaire aimed at identifying the learners' perception of the intervention in terms of the teacher's instruction during the execution of the intervention. From the data analysis, we can observe that the item receiving the highest mean score ($M = 4.23$; $SD = 0.43$), which states 'The teacher encourages me to use new vocabulary in class', implies that learners feel supported and motivated by the teacher throughout the lesson, which encourages them to apply the new vocabulary actively. Meanwhile, item 3 of this section obtained the lowest mean score ($M = 4.03$; $SD = 0.49$). This indicates that although the teacher checked if learners understood the new vocabulary, there is a potential area for improvement. A possible reason for this is some learners may feel that the guidance and understanding checks may not be adequate for them. Hence, the teacher needs to ensure that understanding checks are done consistently to improve learners' perception towards the intervention. Overall, the majority of learners involved expressed positive perceptions of the teacher's instruction in facilitating explicit vocabulary learning through this intervention, with the mean scores for all items exceeding 4.0.

DISCUSSION

To answer the first research question on the effectiveness of using Vocab Detectives: Pictorial Vocab Learning Mission Packs to enhance Form 3 ESL learners' vocabulary learning; the results indicate that the use of Vocab Detectives Pictorial Vocab Learning Mission Packs is effective in enhancing Form 3 ESL learners' vocabulary learning. The following results, including the significant increase in learners' vocabulary test scores from a pre-test mean of 12.333 ($SD = 2.905$) to mean score of 18.167 ($SD = 1.552$) in the post-test, as well as the improvement of 28.67% in the learners' average total score, rising from 61.67% in the pre-test to 90.33% in the post-test, demonstrates not only the effectiveness of this intervention on enhancing the vocabulary learning of the targeted group of learners, but also the greater consistency in learners' outcomes. These results align with prior studies by [6], [8], [11], which reported remarkable improvements in learners' vocabulary post-test results, answering the question of whether the pictorial vocabulary approach effectively enhances learners' vocabulary acquisition.

With regard to the second research question, the learners demonstrated positive responses towards all items in the survey questionnaire comprising the aspects of the vocabulary lesson, learner's personal experience, and teacher's instructions. The positive attitudes can be discerned from the findings obtained through the survey questionnaire, which displayed that the majority of learners strongly agree with the statements such as 'The instructions are clear and easy to follow' ($M = 4.21$; $SD = 0.50$), which suggests the clarity of instructions leading to effective lesson delivery. 'I feel more confident using new words in my writing and speaking.' ($M = 4.33$; $SD = 0.37$), highlighting the success of the intervention in encouraging learners for a more active practical use of the newly learnt vocabulary. In general, the feedback obtained aligns with the feedback received in [7] where the majority of the learners agreed that the pictorial modules of vocabulary learning increased their confidence and interest in learning the English language.

Generally, the results of this study suggest that the explicit pictorial vocabulary learning approach is a significant option for vocabulary teaching and learning that can improve learners' vocabulary acquisition. The results also exemplify the possibility of a shift of academic exploration towards a more interactive and learner-centred vocabulary learning approach in the ESL context, especially in Malaysian classrooms.

CONCLUSIONS

This study demonstrated the effectiveness of using pictorial and mission-style vocabulary activities in enhancing ESL learners' vocabulary acquisition. The significant improvement in post-test scores, combined with positive learner feedback, indicates that the intervention was successful in increasing vocabulary knowledge, confidence, and engagement. Learners responded well to the visual and interactive approach, and the teacher's support further facilitated learning. These findings suggest that integrating gamified and visual

tools into ESL instruction can enhance learning outcomes and create a more engaging language learning experience.

ACKNOWLEDGEMENT

A heartfelt gratitude to all those involved in the completion of this manuscript.

REFERENCES

1. Bujang, M. A. (2025). The dilemma and wisdom in translating p values: A conceptual review. *BioMed Research International*. <https://doi.org/10.1155/bmri/6703756>
2. Fauziningrum, E., Sari, M. N., Rahmani, S. F., Riztya, R., Syafruni, S., & Purba, P. M. (2023). Strategies used by English teachers in teaching vocabulary. *Journal on Education*, 6(1), 674-679. DOI: <https://doi.org/10.31004/joe.v6i1.2981>
3. Haque, A., Ariansyah, M. R., Wiladyah, N. C., & Sari, R. N. (2024). Teaching vocabulary in a digital era: A study on tools and techniques for engaging English learners. *Indonesian Review of English Education, Linguistics, and Literature*, 2(2), 225-245. DOI:10.30762/ireell.v2i2.4433
4. Kara, S., & Kucuk, T. (2023). The effects of picture dictionaries in promoting vocabulary development of EFL learners at tertiary level. *Novitas-ROYAL (Research on Youth and Language)*, 17(2), 80–94. <https://doi.org/10.5281/zenodo.10015826>
5. Mohd Amir, M., & Sulaiman, N. A. (2024). Academic vocabulary knowledge among Malaysia ESL undergraduates. *International Journal of Academic Research in Business and Social Sciences*, 14(9), 181-192. DOI:10.6007/IJARBS/v14-i9/22468
6. Mohd Tahir, M. H., Hamsan, N. H., & Saputra, S. (2024, August). Implementing a Malaysian-based Pictorial Vocabulary Learning Model for ESL students in Penang [Paper presentation]. *International Conference on Languages and Communication (ICLC) 2024*, Universiti Sultan Zainal Abidin, Kuala Nerus, Terengganu, Malaysia.
7. Mohd Tahir, M. H., Mohamed Mokhtar, M., Zaini, M. F., & Mohd Ariff Albakri, I. S. (2024). Pictorial vocabulary module for virtual learning among lower secondary ESL students. *PUPIL: International Journal of Teaching, Education and Learning*, 8(2), 14-31. <https://doi.org/10.20319/pijtel.2024.82.1431>
8. Mohd Tahir, M. H., Mohd Ariff Albakri, I. S., Mohd Adnan, A. H., & Abd Karim, R. (2020). The effects of explicit vocabulary instructions on secondary ESL students' vocabulary learning. *3L: The Southeast Asian Journal of English Language Studies*, 26(2), 158-172. <http://doi.org/10.17576/3L-2020-2602-12>
9. Mohd Tahir, M. H., & Saputra, S. (2024, November). Developing an electronic Pictorial Vocabulary Tool (ePVT) for ESL secondary learners' vocabulary learning [Paper presentation]. *3rd International Conference on Teacher Education 2024*, Grand Riverview Hotel Kota Bharu, Kelantan, Malaysia. https://www.researchgate.net/publication/389216012_Developing_An_Electronic_Pictorial_Vocabulary_Tool_Epvt_For_ESL_Secondary_Learners'_Vocabulary_Learning
10. Nagodavithana, S., & Premarathne, K. (2021). A study of vocabulary learning strategies and their effect on vocabulary development. *Journal of English Language Teaching and Applied Linguistics*, 68-77. DOI:10.32996/jeltal.2021.3.2.7
11. Othman, M. S., Hosshan, H., Mohd Jamil, M. R., Arun, Y., Bahuruddin Setambah, M. A., Mohamad Hanapi, M. H., Shuib, T. R., Mohamad Hashim, A. T., & Md Zalli, M. M. (2022). Picture-vocab: Self-made picture dictionary to improve pupils' vocabulary retention in Malaysia. *International Journal of Evaluation and Research in Education (IJERE)*, 11(4), 2192-2199. <https://doi.org/10.11591/ijere.v11i4.23077>
12. Shruthi, S., & Aravind, B. R. (2024). Open-source tools in ESL learning: A quantitative study. *International Research Journal of Multidisciplinary Scope (IRJMS)*, 5(2), 762-777. <https://doi.org/10.47857/irjms.2024.v05i02.0636>
13. Suwanasilp, D., & Durongbhandhu, N. (2023). English vocabulary with a picture application for enhancing Thai EFL students' daily English vocabulary memorisation. *rEFlections*, 30(3), 712-734. DOI: <https://doi.org/10.61508/refl.v30i3.268078>

14. Tamil Selvam, V., Ponniah, T., Subramaniam, I., & Hashim, H. (2024). Exploring Vocabulary Learning Strategies (VLS) among primary ESL learners. *International Journal of Academic Research in Progressive Education & Development*, 13(3), 358-372. DOI:10.6007/IJARPED/v13-i3/21814
15. Zabidin, N., Nordin, N. A., Chumari, M. Z., Sharif, N. F. M., & Juned, A. M. (2024). Assessing Vocabulary Learning Strategies of ESL Undergraduate Students. *International Journal of Education, Psychology and Counselling*, 9(54), 474-483. DOI:10.35631/IJEPC.954035
16. Zhang, T., & Liang, L. (2024). Vocabulary learning strategies of English as a Foreign/Second Language [Paper presentation]. *International Conference on Global Politics and Socio-Humanities*. DOI:10.54254/2753-7048/45/20230216