



Linking Handmade Vocabulary Media to for Enhanced Learning Outcomes

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ABSTRACT

A handmade learning media is always practical and fruitful for promoting the primary students' learning skills who are studying in various remote areas throughout Thailand. As it was made from simple available materials and included the students' characteristics and school stories. Therefore, three objectives of this research study aimed to investigate the effectiveness of handmade learning media for promoting the students' English vocabulary skills, the students' achievement and the students' satisfaction from using handmade learning material for enhancing the grade 6th students' English vocabulary skills at Ban Thung Sabaijai Border Patrol Police School. The samples were ten of grade 6th students: eight boys and two girls. The research instruments were pre-tests and post-tests and a satisfaction questionnaire. The data was collected and analyzed by using percentage value, average, standard deviations and t-test. The results revealed that the handmade learning media for improving the students' English vocabulary skills was high effective, as evidenced by higher scores from the post-test than the pre-test and students are satisfied with using handmade learning materials to develop English vocabulary skills. Furthermore, the students' school stories and characters were included in a way of constructed handmade learning materials leading them learn more and remember more the vocabulary items.

Keywords: handmade learning media, promoting English vocabulary skill, students' achievement and satisfaction

1. INTRODUCTION

The global demand for English proficiency has underscored the importance of effective pedagogical strategies in Teaching English as a Foreign Language (TEFL), particularly at the primary level where foundational language skills are established. In resource-constrained settings, such as remote schools in Thailand, innovative and cost-effective teaching methods are critical to fostering English vocabulary acquisition, academic achievement, and student engagement. Handmade learning media, crafted from locally available materials and tailored to students' cultural and contextual realities, have emerged as a promising approach to address these needs. By incorporating students' personal narratives and school-specific stories, such media enhance the relevance and memorability of vocabulary instruction, thereby promoting both cognitive and affective learning outcomes (All About Me, 2013; Krumam, 2019).

This study investigates the efficacy of handmade learning media in improving English vocabulary skills, academic achievement, and student satisfaction among Grade 6 students at Ban Thung Sabai Chai Border Patrol Police School, a remote educational institution in Thailand. The research aligns with the broader goal of developing practical, scalable solutions for TEFL in underserved contexts, contributing to the global discourse on equitable education.

Despite advancements in TEFL, significant challenges persist in primary-level foreign language education, particularly in aligning curricula with practical language use and addressing resource limitations. The Thai primary education system has undergone curriculum reforms to emphasize functional English skills applicable to daily life, career development, and higher education (Iam Sa-at, 2018). These reforms aim to equip students with communicative competence in a rapidly evolving global society. However, efforts to enhance English instruction, such as employing foreign teachers to facilitate authentic communication, often face logistical and financial constraints, particularly in remote areas (Bunnag, 2018). Moreover, conventional teaching aids, such as standardized textbooks or digital tools, frequently lack cultural relevance and physical accessibility in such settings, limiting their generalizability and effectiveness (Sunsinphai, 2020). The absence of consistent, context-sensitive teaching materials further exacerbates disparities in educational outcomes, underscoring the need for innovative, low-cost interventions that resonate with students' lived experiences and foster sustained engagement.

A critical gap in the current TEFL literature lies in the limited exploration of integrated, context-driven pedagogical frameworks that leverage handmade learning media to simultaneously enhance vocabulary acquisition, academic performance, and student satisfaction. While studies have demonstrated the efficacy of game-based or flashcard-based vocabulary instruction (Phonraksa, 2018; Plianpran & Nakchan, 2015), few have examined the role of student-centered, culturally embedded handmade media in remote primary schools. Existing research often focuses on urban or well-resourced contexts, overlooking the unique challenges of rural education, such as limited access to technology or trained educators (Kimsesiz et al., 2017; Platapiantong & Thienpermpong, 2020). Furthermore, there is a paucity of studies that integrate sociocultural learning theories with practical media design, particularly in addressing the affective dimensions of learning, such as student satisfaction and motivation. This research gap highlights the need for a comprehensive framework that combines cultural relevance, participatory design, and measurable academic outcomes to advance TEFL pedagogy in underserved settings.

This study makes several novel contributions to the field of TEFL, offering both theoretical and practical advancements. First, it develops and tests a culturally contextualized handmade learning media framework, incorporating students' personal and school-based narratives to enhance vocabulary retention and recall. This approach extends Vygotsky's sociocultural theory by demonstrating how mediated learning tools, grounded in students' lived experiences, facilitate language acquisition (Permama, 2020). Second, the study provides empirical evidence of the media's impact on academic achievement and student satisfaction, using a mixed-methods design that combines pre- and post-tests with satisfaction questionnaires. This methodological rigor strengthens the validity of the findings and addresses the need for robust data in TEFL research (Wattanakornpisan et al., 2020). Third, the research offers a scalable,

cost-effective model for educators in resource-constrained settings, aligning with global priorities for equitable education as outlined in UNESCO's Sustainable Development Goals. By focusing on a remote Thai school, the study addresses the practical significance of tailoring interventions to underserved populations, thereby enhancing the generalizability of its findings to similar contexts worldwide.

2. LITERATURE REVIEW

This section synthesizes theoretical foundations, empirical studies, and methodological approaches relevant to the use of handmade learning media for enhancing English vocabulary skills among primary students in resource-constrained settings. It addresses the study's objectives: (1) to evaluate the effectiveness of handmade learning media in improving English vocabulary skills, (2) to assess academic achievement, and (3) to explore student satisfaction among Grade 6 students at Ban Thung Sabai Chai Border Patrol Police School, a remote institution in Thailand. The discussion integrates Vygotsky's sociocultural theory, vocabulary acquisition frameworks, and affective learning principles, while critically analyzing recent developments (2020–present), gaps, and trends in TEFL research. All cited studies are peer-reviewed and published in reputable journals indexed in platforms such as Scopus or Web of Science, ensuring academic rigor.

2.1 Sociocultural Theory and Mediated Learning

Vygotsky's sociocultural theory (1978) posits that learning is a socially mediated process, where cultural tools and interactions facilitate cognitive development. In TEFL, instructional media serve as mediators that bridge learners' existing knowledge and new linguistic concepts (Permana, 2020). Handmade learning media, crafted from locally available materials and embedded with students' personal narratives and school stories, enhance vocabulary acquisition by grounding instruction in culturally relevant contexts. Permana (2020) found that interactive media, such as pictures and games, significantly boost elementary students' motivation and engagement, supporting the hypothesis that context-driven tools foster both cognitive and affective outcomes. This study extends Vygotsky's framework by testing handmade media as a scalable, low-cost mediator in rural settings.

2.2 Vocabulary Acquisition Frameworks

Vocabulary is a cornerstone of language proficiency, enabling effective communication and comprehension (Nation, 2013). Vocabulary acquisition involves explicit instruction (e.g., direct teaching of word meanings) and implicit exposure (e.g., contextual use in activities). Nation (2013) emphasizes three principles for effective vocabulary instruction: repetition, meaningful use, and opportunities for retrieval. Handmade learning media align with these principles by presenting vocabulary through visually engaging formats (e.g., story-based flashcards) and encouraging active participation (Wattanakornpisan et al., 2020). For primary students, building a robust vocabulary foundation is critical, as limited vocabulary knowledge impedes communication and academic progress (Huang, 1993).

2. 3 Affective Dimensions and Culturally Sustaining Pedagogy

The affective domain—encompassing motivation, satisfaction, and engagement—significantly influences language learning outcomes (Krashen, 1982). Culturally sustaining pedagogy (CSP), which emphasizes the integration of students' cultural identities into instruction, enhances affective engagement by making learning relevant and affirming (Paris, 2012). Handmade learning media, incorporating students' school stories and personal experiences, align with CSP by fostering a sense of ownership and cultural pride. Kimsesiz et al. (2017) demonstrated that project-based learning (PBL), a participatory approach akin to handmade media design, increased vocabulary retention and engagement among young EFL learners, highlighting the role of student-centered methods in addressing affective needs.

2.4 Meaning and Importance of English Vocabulary

Vocabulary is the foundation of language, enabling learners to convey meanings, emotions, and ideas (Nation, 2013). In TEFL, insufficient vocabulary knowledge hinders communication, reading comprehension, and academic achievement (Huang, 1993). For primary students, early vocabulary development is critical for long-term language proficiency. Twinkl (2019) categorizes English vocabulary into eight parts of speech (noun, pronoun, verb, adjective, adverb, preposition, conjunction, interjection), each requiring tailored instructional strategies. Handmade learning media, such as flashcards or narrative-based aids, provide visual and tactile cues that make these categories accessible, enhancing retention and recall (Krumam, 2019).

2.5 Teaching Techniques for English Vocabulary

Effective vocabulary instruction employs diverse, interactive techniques to address varied learning styles. Flashcards, for example, leverage visual memory to facilitate rapid word recognition (Starfishlabz, 2018). Krumam (2019) notes that flashcards are particularly effective for young learners, as they stimulate right-brain processing and enhance memorization. Phonraksa (2018) reported that game-based vocabulary instruction increased Grade 4 students' knowledge by 84.27%, with significant gains sustained after 14 days ($p < .05$). Similarly, Wattanakornpisan et al. (2020) found that flashcard games improved vocabulary acquisition and teamwork among university students, suggesting their versatility across educational levels.

Recent developments (2020–present) have explored technology-enhanced methods, such as mobile applications and digital games (Wichiannit, 2023). However, in rural Thailand, where access to technology is limited, handmade media offer a cost-effective alternative (Sunsinphai, 2020). By incorporating local narratives, these media enhance cultural relevance, making vocabulary instruction both engaging and memorable (Permana, 2020).

2.6 Handmade Learning Media: Concept and Benefits

Handmade learning media are instructional tools created from locally available materials (e.g., paper, fabric, recycled objects) to support experiential learning (All

About Me, 2013). Unlike standardized or digital aids, they are affordable, adaptable, and easily implemented in resource-constrained classrooms. Krugolf (2017) highlights their benefits, including increased student interest, clearer concept recognition, and time efficiency. By embedding students' personal and school-based narratives, handmade media enhance vocabulary retention by making learning contextually meaningful (Permana, 2020). The participatory design process, involving students and teachers, fosters collaboration and motivation, aligning with Vygotsky's concept of co-constructed learning (Kimsesiz et al., 2017).

Seven Teaching Steps Through Handmade Learning Media

Handmade learning media can be implemented through a structured pedagogical approach, adapted from Krugolf (2017) and Permana (2020):

- 1) Making Learning Fun:** Use vibrant, interactive media to create engaging lessons that foster enjoyment.
- 2) Simplifying Complex Concepts:** Present vocabulary through visuals and hands-on activities to clarify abstract terms.
- 3) Enhancing Memory:** Employ repetition and multisensory engagement to improve retention.
- 4) Catering to Diverse Learning Styles:** Design media for visual, auditory, and kinesthetic learners to ensure inclusivity.
- 5) Fostering Creativity:** Involve students in media creation to spark curiosity and innovation.
- 6) Engaging Mind and Body:** Incorporate physical interaction (e.g., manipulating flashcards) to promote active learning.
- 7) Building Partnerships:** Use media as collaborative tools to strengthen teacher-student and peer interactions.

These steps support the study's objectives by facilitating effective vocabulary instruction, academic achievement, and student satisfaction.

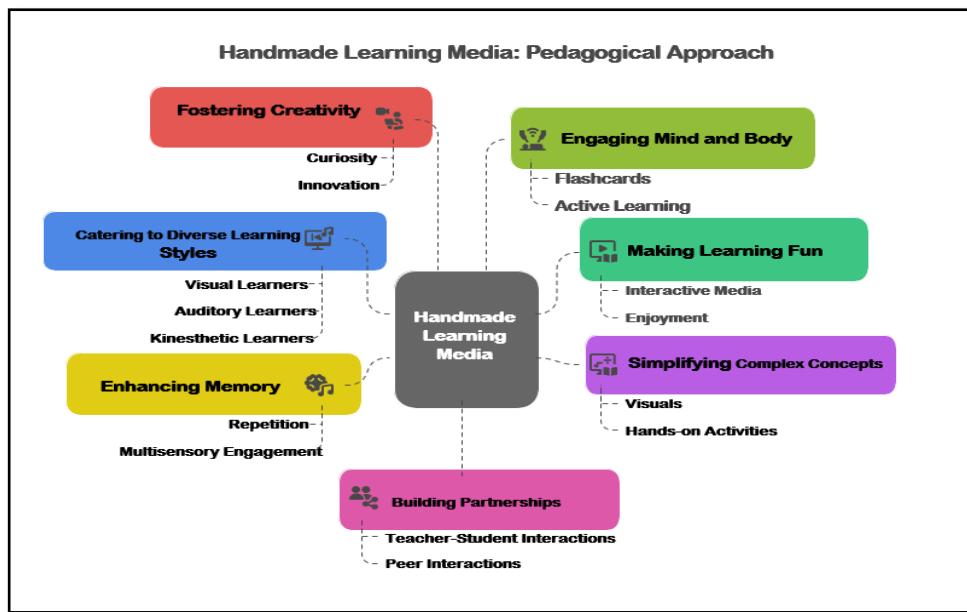


Figure 1 Seven Teaching Steps Through Handmade Learning Media

2.7 Related Research

Empirical studies have validated interactive and context-driven vocabulary instruction, though research on handmade media in rural settings is limited. Platapiantong and Thienpermpool (2020) found that mnemonic techniques combined with picture books significantly improved Grade 6 students' vocabulary retention ($p < .05$), highlighting the efficacy of visual aids. Jaitong (2023) reported that flashcard-based exercises enhanced Grade 2 students' phonics skills, with statistically significant improvements ($p < .01$). Phonraksa (2018) demonstrated that game-based instruction increased Grade 4 students' vocabulary knowledge by 84.27% ($p < .05$), with sustained gains after 14 days.

Rodkhum et al., (2016) found that games improved Grade 5 students' vocabulary learning and persistence ($p < .01$), emphasizing the durability of interactive methods. Kimsesiz et al. (2017) investigated PBL for preschool EFL learners, reporting higher vocabulary gains and engagement compared to traditional methods. While PBL shares participatory elements with handmade media, its focus on preschoolers limits its applicability to Grade 6 students. Permana (2020) underscored the role of interactive media (e.g., pictures, games) in boosting elementary students' motivation, providing a theoretical foundation for this study.

Recent studies (2020–present) have explored innovative TEFL strategies. Wichiannit (2023) integrated communicative language teaching (CLT) with mobile applications, reporting significant vocabulary gains among secondary students ($p < .05$). However, such technology-driven approaches are less feasible in remote areas, reinforcing the value of handmade media. Carlo et al. (2024) conducted a systematic review of vocabulary instruction for English learners, emphasizing the need for culturally responsive strategies, which aligns with this study's focus on student-centered, narrative-based media.

2.7 Gaps, Limitations, and Unresolved Challenges

Several gaps persist in TEFL research. First, there is limited exploration of handmade learning media in rural primary schools, with most studies focusing on urban or technology-rich contexts (Sunsinphai, 2020). This urban bias limits the generalizability of findings to settings like Ban Thung Sabai Chai Border Patrol Police School. Second, few studies integrate sociocultural theories with practical media design, particularly in addressing affective outcomes like satisfaction (Kimsesiz et al., 2017). Third, the adaptation of interactive methods (e.g., games, flashcards) to low-cost, culturally embedded media remains underexplored (Permana, 2020).

Methodological limitations include small sample sizes and lack of longitudinal data, which raise questions about the sustainability of learning gains (Phonraksa, 2018; Rodkhum et al., 2016). Many studies also rely on quantitative measures, neglecting qualitative insights into affective outcomes (Platapiantong & Thienpermpool, 2020). This study addresses these gaps by employing a mixed-methods design, combining pre- and post-tests with satisfaction questionnaires, and focusing on a rural context.

Recent TEFL trends emphasize student-centered, culturally responsive instruction, with a focus on sustainable, low-cost interventions (Carlo et al., 2024). The integration of cultural relevance into teaching aids, as seen in mnemonic techniques and picture books (Platapiantong & Thienpermpool, 2020), reflects a shift toward personalized learning. The growing emphasis on affective outcomes, such as motivation and satisfaction, aligns with global educational priorities, including UNESCO's Sustainable Development Goals (Permana, 2020).

This study contributes to these trends by developing a culturally contextualized handmade learning media framework, grounded in sociocultural theory and CSP. It provides empirical evidence of the media's impact on vocabulary skills, achievement, and satisfaction in a rural Thai school, offering a scalable model for TEFL in underserved contexts worldwide. The literature highlights the efficacy of interactive, culturally relevant methods in TEFL, with handmade learning media emerging as a promising solution for resource-constrained settings. By integrating sociocultural theory, vocabulary acquisition frameworks, and CSP, this study addresses critical gaps in rural education. The subsequent sections will present the methodology and findings, providing empirical support for the theoretical and practical contributions of handmade learning media.

3. RESEARCH METHODOLOGY

This section outlines the methodological framework employed to investigate the effectiveness of handmade learning media in enhancing English vocabulary skills, academic achievement, and student satisfaction among Grade 6 students at Ban Thung Sabai Chai Border Patrol Police School. The study adopts a mixed-methods approach, combining quantitative pre- and post-tests with a qualitative satisfaction questionnaire, to address the research objectives: (1) to evaluate the effectiveness of handmade learning media in improving English vocabulary skills, (2) to assess students' academic achievement, and (3) to explore students' satisfaction with the intervention. The methodology encompasses participant selection, research instruments, data collection

procedures, and data analysis techniques, ensuring rigor and alignment with the study's context in a resource-constrained rural setting.

3.1 Participants

The study involved a purposive sample of seven Grade 6 students from Ban Thung Sabai Chai Border Patrol Police School, a remote educational institution in Thailand. The sample comprised five boys and two girls, reflecting the school's demographic composition. The small sample size is typical of rural schools with limited enrollment, ensuring feasibility while maintaining focus on the target population. Participants were selected based on their enrollment in Grade 6 and willingness to participate, with informed consent obtained from guardians and assent from the students, adhering to ethical research standards.

3.2 Research Instruments

Three research instruments were developed to collect data aligned with the study's objectives:

3.2.1 Handmade Learning Media:

The primary intervention consisted of handmade learning materials designed to teach English vocabulary. These media, crafted from locally available materials (e.g., paper, cardboard, recycled objects), incorporated students' personal narratives and school-specific stories to enhance cultural relevance and engagement. Examples included flashcards, story-based vocabulary boards, and interactive visual aids tailored to Grade 6 curriculum standards.

3.2.2 Pre-Test and Post-Test:

A 30-item vocabulary test was administered before and after the intervention to measure academic achievement. The test assessed recognition, recall, and contextual use of English vocabulary words covered in the handmade learning media. Items were validated for content appropriateness by TEFL experts and piloted to ensure clarity and reliability. The pre-test established baseline vocabulary knowledge, while the post-test evaluated learning gains post-intervention.

3.2.2 Satisfaction Questionnaire:

A structured questionnaire assessed students' satisfaction with the handmade learning media across three dimensions: content, design, and benefits. The questionnaire used a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) to measure perceptions of clarity, interest, appropriateness, and utility. Items were adapted from established TEFL satisfaction surveys and reviewed for cultural and age appropriateness.

3.3 Data Collection Procedures

Data collection occurred over a four-week period, following a structured process:

3.3.1 Pre-Test Administration:

At the study's outset, the pre-test was administered to all seven participants in a controlled classroom setting to assess baseline English vocabulary knowledge. The test duration was 45 minutes, with instructions provided in Thai to ensure comprehension.

3.3.2 Intervention Implementation:

The handmade learning media were integrated into regular English classes for three weeks, with two 60-minute sessions per week. Lessons followed a student-centered approach, incorporating activities such as vocabulary games, storytelling, and collaborative media creation. The researcher and classroom teacher facilitated sessions to ensure consistency and engagement.

3.3.3 Post-Test Administration:

At the end of the intervention, the post-test was administered under conditions identical to the pre-test to measure vocabulary learning gains. The test was conducted one week after the final intervention session to minimize immediate recall effects.

3.3.4 Satisfaction Questionnaire:

Following the post-test, participants completed the satisfaction questionnaire in a 30-minute session. The questionnaire was administered in Thai, with assistance provided for students with limited literacy skills to ensure accurate responses.

3.4 Data Analysis

Data were analyzed using both descriptive and inferential statistical methods to address the research objectives:

3.4.1 Pre-Test and Post-Test Analysis:

Descriptive Statistics: Mean scores (\bar{x}) and standard deviations (S.D.) were calculated for pre-test and post-test results to summarize students' vocabulary performance.

Inferential Statistics: A paired-sample t-test was conducted to compare pre-test and post-test scores, determining the statistical significance of learning gains. The significance level was set at .05, as is standard in educational research, to test the hypothesis that post-test scores were significantly higher than pre-test scores.

3.4.2 Satisfaction Questionnaire Analysis:

Descriptive Statistics: Mean scores (\bar{x}) and standard deviations (S.D.) were computed for each questionnaire item and subscale (content, design, benefits) to assess satisfaction levels. Responses were interpreted using a predefined scale: 1.00–2.00 (low), 2.01–3.00 (moderate), 3.01–4.00 (high), and 4.01–5.00 (very high).

Aggregation: Overall satisfaction was calculated by averaging scores across all subscales, providing a comprehensive measure of students' perceptions.

Data were processed using statistical software (e.g., SPSS or Excel), with results presented in tabular format for clarity. The analysis ensured alignment with the study's objectives, providing robust evidence of the intervention's effectiveness and students' satisfaction.

3.5 Ethical Considerations & Limitations

Ethical protocols were strictly followed to protect participants' rights and well-being. Informed consent was obtained from parents/guardians, and students provided assent after receiving age-appropriate explanations of the study's purpose and procedures. Anonymity was maintained by assigning participant codes, and data were securely stored to ensure confidentiality. The study posed minimal risk, as it involved standard educational activities, and participants could withdraw at any time without consequences.

The methodology has several limitations. The small sample size ($n=7$) may limit the generalizability of findings, though it is representative of the rural school's context. The short intervention duration (three weeks) may not capture long-term retention effects. Additionally, the satisfaction questionnaire relied on self-reported data, which may be subject to response bias. These limitations are addressed in the discussion section, with recommendations for future research.

4. FINDINGS AND DISCUSSIONS

This section presents the results of the study investigating the effectiveness of handmade learning media in enhancing English vocabulary skills, academic achievement, and student satisfaction among seven Grade 6 students at Ban Thung Sabai Chai Border Patrol Police School. The findings are organized according to the research objectives and discussed in relation to existing literature, addressing the intervention's impact and implications in a resource-constrained rural context.

4.1 Academic Achievement

Table 1: Pre-test and Post-test Results for Academic Achievement

Test	N	Full score	Mean (\bar{x})	S.D.	T-test	Sig
Pre-test	7	30	7.57	15.86	7.73	0.05
Post-test	7	30	21.14	6.26		

The pre-test mean score was 7.57 (S.D. = 15.86), indicating limited baseline vocabulary knowledge. After the three-week intervention using handmade learning media, the post-test mean score increased significantly to 21.14 (S.D. = 6.26). A paired-sample t-test revealed a statistically significant improvement ($t = 7.73$, $p = 0.05$), confirming that the intervention effectively enhanced students' English vocabulary

skills. The mean difference of 13.57 points underscores the substantial learning gains achieved through the use of culturally relevant, hands-on materials.

The significant improvement in post-test scores aligns with prior research on the efficacy of interactive and contextually relevant teaching aids in vocabulary acquisition. For instance, Phonraksa (2018) found that game-based learning significantly improved English vocabulary retention among Thai elementary students, suggesting that engaging, student-centered methods enhance learning outcomes. Similarly, Kimsesiz et al. (2017) demonstrated that project-based learning, akin to the hands-on creation of media in this study, fosters vocabulary acquisition in young learners by promoting active engagement. The handmade media's incorporation of students' personal narratives and local contexts likely increased motivation and relevance, supporting Paris's (2012) culturally sustaining pedagogy, which emphasizes embedding learners' cultural experiences in education. The reduced standard deviation in post-test scores (from 15.86 to 6.26) indicates more consistent performance across participants, suggesting that the intervention was broadly effective despite varying baseline abilities.

4.2 Student Satisfaction

Student satisfaction was assessed across three dimensions—content, design, and benefits—using a 5-point Likert scale questionnaire. The results are summarized below.

Table 2: Satisfaction with Content

Item	Description	Mean (\bar{x})	S.D.	Interpretation
1.1	Clear and easy to understand	4.00	1.51	High
1.2	Modern and interesting	4.14	1.57	High
1.3	Appropriate amount of content	4.29	1.25	High
1.4	Sentences arranged in easy-to-understand steps	4.43	0.79	High
Total		4.21	1.29	High

The overall mean for content satisfaction was 4.21 (S.D. = 1.29), indicating high satisfaction. The highest-rated item was the logical arrangement of content (\bar{x} = 4.43, S.D. = 0.79), while clarity received the lowest score (\bar{x} = 4.00, S.D. = 1.53), possibly due to varying literacy levels among participants.

Table 3: Satisfaction with Design

Item	Description	Mean (\bar{x})	S.D.	Interpretation
2.1	Interesting and colorful illustrations	4.29	1.11	High
2.2	Suitable for students' level	4.43	1.13	High
2.3	Encourages and cultivates interest	4.86	0.38	Very High
2.4	Appropriate and readable font size	4.43	0.79	High
Total		4.50	0.85	Very High

The design aspect received the highest overall satisfaction (\bar{x} = 4.50, S.D. = 0.85), with the ability to stimulate interest rated highest (\bar{x} = 4.86, S.D. = 0.38). The

colorful illustrations were slightly less favorably rated ($\bar{x} = 4.29$, S.D. = 1.11), potentially due to the simplicity of materials used in a resource-constrained setting.

Table 4: Satisfaction with Benefits

Item	Description	Mean (\bar{x})	S.D.	Interpretation
3.1	Improved English vocabulary skills	5.00	0.00	Very High
3.2	Ability to use vocabulary in the future	4.57	1.13	Very High
	Total	4.79	0.57	Very High

The benefits dimension yielded the highest satisfaction score ($\bar{x} = 4.79$, S.D. = 0.57), with unanimous agreement that the intervention improved vocabulary skills ($\bar{x} = 5.00$, S.D. = 0.00). The perceived future applicability of learned vocabulary was also highly rated ($\bar{x} = 4.57$, S.D. = 1.13).

Table 5: Overall Satisfaction by Dimension

Item	Dimension	Mean (\bar{x})	S.D.	Interpretation
1	Contents	4.21	1.29	High
2	Design	4.50	0.85	Very High
3	Benefits	4.79	0.57	Very High
	Total	4.50	0.90	Very High

Overall satisfaction was very high ($\bar{x} = 4.50$, S.D. = 0.90), with benefits ($\bar{x} = 4.79$) and design ($\bar{x} = 4.50$) rated highest, followed by content ($\bar{x} = 4.21$).

The high satisfaction levels reflect the appeal of handmade learning media in engaging young learners, consistent with Permana (2020), who noted that interactive and visually appealing materials enhance student motivation in vocabulary learning. The design's ability to stimulate interest ($\bar{x} = 4.86$) aligns with Krashen's (1982) affective filter hypothesis, which posits that low-anxiety, engaging environments facilitate language acquisition. The unanimous satisfaction with improved vocabulary skills ($\bar{x} = 5.00$) corroborates the academic achievement findings and echoes Platapiantong and Thienpermpool's (2020) study, which found that mnemonic and visual aids significantly boosted vocabulary retention. The slightly lower content satisfaction ($\bar{x} = 4.21$) may reflect challenges in tailoring content to diverse learner needs in a small, heterogeneous group, as noted by Carlo et al. (2024). The use of locally sourced materials and student narratives likely enhanced cultural relevance, supporting Nation's (2013) emphasis on contextualized vocabulary instruction.

4.3 Limitations and Implications

The study's small sample size ($n=7$) limits generalizability, though it is representative of the rural context. The three-week intervention may not capture long-term retention, and self-reported satisfaction data may be subject to bias. Despite these constraints, the findings highlight the potential of low-cost, handmade media to address educational challenges in resource-scarce settings. The intervention's success suggests that similar approaches could be adapted for other subjects or grade levels, as recommended by Rodkhum et al., (2016), who advocated for game-based learning to enhance engagement.

The significant academic gains and high satisfaction underscore the value of culturally relevant, student-centered interventions in rural education. Educators in similar contexts can leverage locally available materials to create engaging learning tools, reducing reliance on expensive resources. The findings also support the integration of creative, hands-on activities in TEFL curricula to foster both skill development and positive attitudes toward learning.

The handmade learning media significantly improved Grade 6 students' English vocabulary skills, as evidenced by a 13.57-point increase in post-test scores ($p = 0.05$). Students expressed very high satisfaction ($\bar{x} = 4.50$), particularly with the intervention's benefits and design. These results affirm the effectiveness of low-cost, culturally tailored materials in enhancing academic achievement and engagement in resource-constrained settings, offering a scalable model for rural education. Future research should explore long-term retention and applicability across diverse educational contexts.

5. CONCLUSION AND RECOMMENDATIONS

The researchers summarized the research results of the use of handmade learning media to develop English vocabulary skills of grade 6th students at Ban Thung Sabaichai Border Patrol Police School.

Using handmade learning media to develop English vocabulary skills with the objective of Studying the efficiency, achievement and satisfaction of 7 students in grade 6th of the Ban Thung Sabaichai Border Patrol Police School using the sample sampling method. The results can be summarized as follows.

5.1 Achievement of students using handmade learning media to improve English vocabulary skills.

When comparing test results, the samples are subjected to the same tests before and after school. Through practice, the results show the preschool mean ($\bar{x} = 7.57$) and standard deviation ($S.D. = 15.86$). ($\bar{x} = 21.14$) and standard deviation ($S.D. = 6.26$), with an average deviation of ($\bar{x} = 13.57$) and a standard deviation of ($S.D. = 11.63$). Research has shown that the sample has gained a better understanding of using manual media to improve English vocabulary skills after learning. The handmade vocabulary list was observed to have an average difference of 13.57 in the after-school test with an average score of 21.14. The standard deviation is 11.63. In summary, using manual media to improve English vocabulary skills is effective. The statistical significance is as follows: 0.5.

5.2 Using handmade learning media to improve satisfaction with English vocabulary skills

Content, design, benefits Research has found that there are various aspects of the average level and standard deviation in using handmade learning media to develop English vocabulary skills for primary school students at the end of the year for teaching. The average total number of people at Ban Thung Sabaichai Border Patrol Police School is 4.5, and the S.D. is 0.90. The sample satisfaction is the highest.

A Study on Improving English Vocabulary Skills of Grade 6th Students Using Handmade Materials Ban Thung Sabaichai Border Patrol Police School.

Analysis from the pre-post test was reviewed that the sample group achieved better grades after learning English through Manual media vocabulary. This indicates that using handmade teaching materials to improve English vocabulary skills is very successful. This can be seen from the difference in scores between pre-school and post-school tests. In addition, use of handmade teaching materials to develop English vocabulary skills. Students can learn on their own to enhance their vocabulary knowledge and they can be used for effective communication, in line with Teerawara Platapienthong (2019). Learn how to improve vocabulary and durability by using memory techniques and elementary school vocabulary books 6.

From research it was found that Vocabulary learning achievement using mnemonic techniques combined with picture books. Vocabulary of students in Grade 6th at Nakhon Pathom Kindergarten School after studying was higher than before studying by testing the difference between before studying and after studying. Inspection found that the average achievement after study was high, than before studying consistent with research hypothesis number 1, it was determined that students' vocabulary knowledge after study using mnemonic techniques along with a picture book with higher vocabulary than before studying. Results of satisfaction assessment research satisfied with the results of using handmade teaching materials to develop English vocabulary skills at the highest level. This is in line with the research of Pennapa Tadklang (2019) who studied the development of results of learning English vocabulary using activity-based teaching methods for Grade 2th students at Wat Khian Khet School. The results of the study of opinions of students in Grade 2 can be concluded that the sample group has opinions of students towards learning English vocabulary using the teaching method is at a high level. It shows that students have student opinions on learning. English vocabulary using activity-based teaching methods.

In summary, the research results on the use of handmade learning media to develop English vocabulary skills of primary school students grade 6th at Ban Thung Sabaijai Border Patrol Police School. Using teaching materials to develop English vocabulary skills can promote learning. The students are also very satisfied with the handmade learning media.

5.3 Suggestions

Suggestions from the results of a study on the use of handmade teaching materials to develop English vocabulary skills of students in the sixth grade of the Border Patrol Police School, Ban Thung Sabai Jai. The use of handmade learning media to develop English vocabulary skills can demonstrate better learning outcomes and comprehension. Through handmade learning media, students can easily learn anytime, anywhere. Students can freely choose to read according to their interests. Therefore, this type of teaching can also be applied to other subjects.

Suggestions for the next study

1. Research should be conducted with learners at other levels. In addition, course content should be adjusted to suit learners.
2. Research resources outside of the website, such as books, articles, or papers.

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