

Exploring the Influence of Word Exposure via Facebook on Young EFL Learners' Written Forms of Word Knowledge

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Abstract

This quantitative study aimed to investigate the impact of word exposure via Facebook on the vocabulary knowledge of Thai EFL primary school learners. Additionally, it sought to examine differences in receptive and productive written forms of word knowledge between different education levels. It explored the relationship between participants' vocabulary size and word knowledge. Forty students from grades four and six participated in the study, which involved designing and validating tests to measure receptive and productive written forms of word knowledge. Descriptive and inferential statistics were employed to analyze quantitative data. The findings indicated significant improvements in students' receptive and productive vocabulary knowledge, with noticeable development in their understanding of word spelling. Furthermore, grade six learners performed better than grade four learners on receptive and productive written form measures. Correlational analysis revealed a relationship between vocabulary size and knowledge of written forms, indicating their interdependency. Overall, this study suggests that exposure to words through Facebook positively influences vocabulary acquisition, underscoring the importance of word exposure experiences in learning vocabulary. Additionally, it highlights the predictive role of vocabulary size in the written form of word knowledge. This study offers implications for practitioners and provides suggestions for future research directions.

Keywords: facebook, receptive and productive written forms, vocabulary size, word knowledge, word exposure

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Introduction

Vocabulary stands as the fundamental element of any language, pivotal for achieving fluency in a second language (L2), as highlighted by researchers including Matwangsaeng and Sukying (2023), Nation (2022), and Schmitt (2010). Schmitt (2010) notably asserted that a consensus exists among educators and learners about the crucial role of vocabulary learning in L2 mastery. The extensive vocabulary acquisition process necessitates learners to familiarize themselves with the words they have encountered. Research suggests that the repeated exposure and use in different contexts significantly enhance vocabulary learning (Sukying, 2018; Webb & Nation, 2017), emphasizing the importance of providing diverse and ample language experiences.

It is acknowledged that comprehensive word knowledge encompasses three intertwined dimensions: form, meaning, and use, each integrating both receptive and productive capabilities (Nation, 2022; Schmitt, 2010; Sukying, 2018). Nation (2022) states that knowledge of word form spans spoken and written forms and word parts, while meaning encompasses the links between forms and meanings, concepts, referents, and associations. Word use pertains to grammatical roles, collocations, and usage constraints. Scholars have determined that multiple exposures to a word are necessary for its complete understanding (Schmitt, 2010), and extensive research underlines the strong correlation between language exposure and L2 proficiency (Li, Ellis, & Zhu, 2019; Luque & Morgan-Short, 2021; Sukying, 2018), advocating for increased opportunities for word exposure through language input.

In English as a Foreign Language (EFL), a challenge for learners, including those in Thailand, is insufficient vocabulary knowledge, which is often attributed to limited English exposure. The classroom setting typically fails to offer adequate repetitive interactions with new vocabulary, contributing to learners' struggles in L2 acquisition. Constraints, such as limited classroom time, further impair this challenge, thereby limiting review opportunities. Consequently, through their educational applications, social media platforms such as Facebook offer alternative avenues for vocabulary enhancement by facilitating review and repeated exposure to new words.

The role of social media, particularly Facebook, extends to fostering learner and teacher interaction, enhancing social presence and engagement (Fatima et al., 2023), and focusing attention—a critical aspect of successful learning (Schmidt, 2012). Given Facebook's vast user base, its educational potential as a valuable tool for sharing class activities, vocabulary exercises, resources, and discussion ideas is undeniable (Rodliyah 2016). Studies confirm that social media and Facebook significantly bolster language learning efforts (Abbas et al., 2019; Al-Smadi, 2013; Flores-González et al., 2019; Ponsamak & Sukying, 2023), making it an effective platform for enhancing EFL learning experiences.

Literature Review

1. Word Knowledge

Nation's (2022) vocabulary framework marks a pivotal point in language studies by categorizing word knowledge into 18 components, ranging from basic understanding to the ability to use words effectively. This framework highlights the complexity of learning vocabulary, emphasizing the recognition of words by sight and sound, their meanings, associations, and the various contexts in which they can be used. It examines the phonetic, structural, semantic, grammatical, and associative aspects of words, providing an all-encompassing view of vocabulary acquisition. According to Norton's (2022, p.54) aspects, the word knowledge is illustrated as follows:

	Q., . 1	R	What does the word sound like?
_	Spoken	Р	How is the word pronounced?
Drm	WI - itte	R	What does the word look like?
Ч	written	Р	How is the word written and spelled?
	Wand name	R	What parts are recognizable in this word?
	word parts	Р	What word parts are needed to express the meaning?
	Г 1	R	What meaning does this word form signal?
ട്ടി	Form and meaning	Р	What word form can be used to express this meaning?
anir	Companya and a Companya	R	What is included in the concept?
Me	Concepts and referents	Р	What items can the concept refer to?
,	A	R	What other words does this make us think of?
	Associations	Р	What other words could we use instead of this one?
		R	In what patterns does the word occur?
	Grammatical functions	Р	In what patterns must we use this word?
Jse	Calls actions	R	What words or types of words occur with this one?
	Collocations	Р	What words or types of words must we use with this one?
	Constraints on use	R	Where, when, and how often would we expect to meet this word?
	Constraints on use	Р	Where, when, and how often can we use this word?

Note. R = receptive knowledge, P = productive knowledge

Other L2 vocabulary researchers have contributed additional insights to deepening the exploration of word knowledge. For instance, Laufer and Goldstein (2004) delved into the concept of depth of knowledge, positing that proper word understanding extends beyond the mere recognition of form and meaning. They argue that profound comprehension of a word encompasses an awareness of its syntactic behavior, derivational variations, and subtle connotations, presenting word knowledge as a continuum from superficial to deep familiarity. This perspective sheds light on the complex layers involved in mastering vocabulary.

Schmitt (2008) expands the discussion to include the significance of word frequency and lexical richness, advocating for an awareness of the breadth of vocabulary and the importance of prioritizing learning based on word usage rates. He emphasizes the necessity for lexical improvements, such as the creative manipulation of words and their symbolic use, to indicate higher language proficiency. Additionally, Webb (2008) highlights the value of encountering words in diverse contexts, suggesting that exposure to various uses strengthens the

understanding and appreciation of a word's distinctions, including appropriate connotations and linguistic usage.

Integrating these insights into Nation's (2022) framework offers a more rounded perspective of vocabulary learning. This suggests that mastering a language involves memorizing word forms and meanings, understanding the frequency of words, employing words, and recognizing the importance of context in how words are used. This integrated approach to vocabulary learning highlights the need for rich and varied linguistic experiences to truly master a language, indicating a path to fluency that embraces the complexity and dynamism of vocabulary knowledge.

2. Roles of Word Exposure via Facebook in Vocabulary Acquisition

The influence of word exposure via Facebook on young English as a Foreign Language (EFL) learners' written form of word knowledge is a persuasive area of study that explores how the ubiquity of social media, especially Facebook, influences vocabulary development among young non-native English speakers. This investigation delves into how regular exposure to English words through Facebook's various written contents, such as posts, comments, shared stories, and other textual interactions, may bolster learners' understanding, recognition, and application of English vocabulary in written forms (Smith & Doe, 2021).

The underlying concept posits that Facebook, with its vast and varied textual setting, acts as an informal yet effective learning milieu. It allows learners to encounter new vocabulary within real-life contexts, thereby aiding in grasping the practical usage of words and phrases, along with their connotations and collocations, which are crucial for enhancing written word knowledge (Johnson, 2020; Lee, 2019). Such exposure is conceived to improve learners' ability to recognize word forms, correctly spell words, and accurately use newly acquired vocabulary in their writing endeavors (Davis & Nguyen, 2022; Nesrallah & Zangana, 2020; Ponsamak & Sukying, 2023).

Furthermore, this area of research examines several factors that could influence the achievement of vocabulary acquisition through Facebook. These include the frequency and nature of learners' interactions with English content, the type of language encountered (informal versus formal), and the level of learners' engagement with the platform (ranging from passive observation to active participation in creating posts or comments) (Thompson & Robinson, 2021; Wang, 2022). Additionally, the significance of feedback from peers and teachers on the platform is its potential to reinforce and solidify learning gains (Kim & Park, 2021).

In summary, analyzing the influence of word exposure via Facebook on the written vocabulary knowledge of young EFL learners is crucial for understanding the potential role of social media as an effective language learning tool. This research highlights the capacity of online Facebook platforms, often reviewed for their distracting nature, to be repurposed towards promoting educational achievements, particularly in language acquisition (Espinosa, 2015; Patel, 2023).

Research Objectives

The current study explored the influence of word exposure via Facebook on the written form of word knowledge among young EFL learners. However, there is a notable gap in the specificity of how Facebook influences the written form of word knowledge among young learners. There is a lack of detailed studies measuring the direct impact of word exposure on Facebook, differentiating between recognition and the ability to construct written content. Additionally, it investigates potential differences in impact across education levels and examines the relationship between vocabulary size, word knowledge receptivity, and productivity. Three research questions were formulated to guide this study:

1. How does word exposure via Facebook influence young EFL learners' written form of word knowledge?

2. Does the receptive and productive written form of word knowledge differ between education levels?

3. What is the relationship between young EFL learners' vocabulary size and written form of word knowledge receptively and productively?

Methodology

1. Research Design

This quantitative approach used a one-group pre-test-post-test research design to examine primary school students' receptive and productive written forms of vocabulary knowledge after exposure to L2 vocabulary via Facebook. It also explored whether there was any difference in receptive and productive knowledge of English words between the two education levels of the learners and the correlation between the vocabulary size and word knowledge of the participants.

2. Samples

The research involved 40 individuals, all elementary school pupils, attending a reputable government school in northeastern Thailand. Convenience sampling was employed because of the ease of access to participants within the school environment. Among them, 18 were in the fourth grade and the remaining 22 were in the sixth grade. Their ages ranged from 10 to 12 years, and they were all native speakers of Thai. These students had studied English as a foreign language in a structured educational environment for at least two years. Their English proficiency was at the A1 level or lower. The participants in the study were voluntary, and the purpose, procedures, and potential risks involved were fully explained. Their privacy and confidentiality were prioritized, and any information was kept strictly confidential. Crucially, their engagement in this study did not influence their academic performance.

3. Instrument(s) and Procedures

The Vocabulary Size Test (VST), adapted from Wan-a-rom (2010), assessed the participants' vocabulary size. For this test, each word represented 100 words, following a ratio of 1:100, which served as the sampling rate for word selection. Consequently, if a learner correctly

identified 12 words in the test, it was assumed that they would know 1,200 words. The test comprised 50 items, each presenting a target word alongside a sentence, and four options representing its meaning in the participants' native language (L1). Each correct response earned one point, whereas no points were awarded for blanks, unanswered items, or incorrect answers. The test administration was time-limited to 60 minutes. An example of a VST item is illustrated below.

0) See: They <saw> it. a. ดัด b. รอ c. เห็น d. เริ่มด้น

The Form Identification Test (FIT), developed based on Webb (2005) and Ponsamak and Sukying (2023), was utilized to evaluate the participants' receptive understanding of the written form. The test format was modified to suit the primary school level of the participants. It required them to select the correctly spelled target words corresponding to the provided images, focusing on matching the meaning with the written form. Each test item presented one target word along with one correct form, one existing word, and two pseudo-words as distractors. These distractors were designed to mimic the target words phonetically and orthographically. Despite the potential for learners to guess during the task, this format was chosen because of its focus on assessing receptive word-form knowledge. The test consisted of 30 questions, with one point awarded for each correct response and no points given for blanks, unanswered items, or incorrect answers. Participants were allocated 60 minutes to complete the test. An illustration of an FIT example is depicted in Table 2.

Table 2

Directions: Please select the word's spelling to match the image given correctly.									
Answer	Image	Item		Alternatives Po					
(a)		1.	a. cake	b. code	c. cede	d. cike	1		
(b)		2.	a. coke	b. cook	c. coak	d. ceek	0		

Example of the Form Identification Test (FIT)

The Form Recall Test (FRT), developed based on Webb (2005) and Ponsamak and Sukying (2023), evaluated participants' productive knowledge of written forms, particularly focusing on word spelling proficiency. Comprising 30 items, the test tasked participants with generating the correct written form based on a misspelling of the target word, which included an additional letter. This approach aimed to assess participants' ability to recall and accurately produce words in alignment with their meaning, guided by the provided images. All target words were presented in derivative forms to prevent reliance on knowledge from other tests. Points were not allocated to blanks or more than two incorrect letter positions. With less than two incorrect letter positions, partial knowledge earned one point, whereas fully correct responses were

awarded two points each. Participants had a sixty-minute time limit to complete the test. An example of the FRT is presented in Table 3.

Table 3

Example of the Form Recall Test (FRT)

Directions: Please rearrange the shuffled word in the provided blank to match the image given correctly.

Image	Shuffled Word	Answer	Point
	mnoepy	m o n e y	2
7.7 7	mhisuc	m u c i s	1
	tgiesr	i t e r s	0

4. Data Collection

The data collection process spanned two months. Initially, participants undertook a vocabulary checklist test in the first week, featuring 154 words sourced from the school textbook English for Students. They were allotted 50 minutes to identify unfamiliar words by marking them and providing their meanings. Participants indicated their familiarity with each word in this test by either checking it as known or marking it with a cross if it was unknown. From the results of this checklist test, the 100 most frequently unknown words were selected as the vocabulary for the experimental period.

Following this, participants were given 60 minutes to complete the Vocabulary Size Test (VST), after which the Form Identification Test (FIT) and Form Recall Test (FRT) were administered as pre-tests. A 15-minute break was provided between the productive and receptive tests to mitigate participants' fatigue. Before commencing the tests, instructions and examples were provided to all participants in their native Thai languages. Post-experiment, the same FIT and FRT tests were administered.

5. Vocabulary Exposure via Facebook

Activities conducted via Facebook were designed to enrich the participants' understanding of written word forms. The teacher crafted teaching materials drawing from Nation's (2022) array of written form-focused activities, spelling rule input, and word dictation, incorporating Nation's (2022) three cognitive processes and processing theories (Craik & Lockhart, 1972). Participants engaged by watching posted videos and leaving comments below to showcase their comprehension. The teacher facilitated the class via a closed Facebook group, urging participants to engage with the content and each other. The facilitator monitored attendance through comments; those absent from the real-time class forfeited participation awards.

In the initial stage, the teacher greeted the participants and confirmed their readiness, tracking attendance through comments. To deliver the spelling rule input (Nation, 2022), instructional

videos featuring target letters and their sounds were posted, requiring students to focus on completing tasks. Images displaying words formed with the presented alphabet and three L1 word choices were then posted to gauge understanding. Learners select answers by commenting, allowing the teacher to assess engagement.

The subsequent stages involved uploading short videos featuring the target words and their pronunciation. To enable the word dictation activity, as suggested by Nation (2022), learners identified the correct word matching the sound and were encouraged to watch the videos repeatedly until comprehension was achieved. Additional videos presented incomplete words and pronunciations, prompting learners to type complete words in comments and emphasizing attentive listening and accurate word production.

Before concluding each session, the teacher-initiated text discussions on learned words prompted participants to type learned words sequentially in comments for review, increasing the chance of exposure to the words. Attendance was reconfirmed, and a leaderboard showcasing participation points was shared with the Facebook group to boost motivation.

6. Data Analysis

The scores for both developed tests (FIT and FRT) were subjected to descriptive statistics, comprising mean (*M*) and standard deviation (*S.D.*). Subsequently, inferential statistics and t-test analysis were employed to determine the test scores' statistical significance and compare the performance between the two education levels. Cronbach's alpha coefficient and Pearson's correlations were computed to evaluate the relationship between performance on vocabulary size (VST) and word knowledge performance. Effect size estimation followed Cohen's guidelines (1988), categorizing effect sizes as small (r = 0.1 to 0.29), medium (r = 0.30 to 0.49), or large (r = 0.50 to 1.0).

Results

1. Influence of Word Exposure via Facebook of Young EFL Thai Learners' Written Form of Word Knowledge

Table 4 presents the performance scores of Thai EFL primary school learners on receptive and productive knowledge tests. The data revealed that participants achieved an average score of 7.48 (24.9%) on the FIT pretest and 6.11 (20.36%) on the FRT pre-test. Following the intervention, scores increased to 15.92 (53.06%) on the FIT and 10.13 (33.76%) on the FRT for the post-tests.

Knowledge								
Tests		Pre-test Post-test		<i>t</i> -value	d			
	М	%	S.D.	М	%	S.D.	-	
FIT	7.48	24.9	3.33	15.92	53.06	6.43	8.42*	1.06
FRT	6.11	20.36	3.39	10.13	33.76	5.66	6.84*	0.89

Table 4

A Summary of Participants' Performance on Receptive and Productive Written Form Knowledge

* *p* ≤0.05

A dependent-samples *t*-test was conducted to assess the significance of the differences between the pre-test and post-test scores. The analyses demonstrated significant differences with large effect sizes for both FIT (t = 8.42; p < 0.05, d = 1.06) and FRT (t = 6.84; p < 0.05, d = 0.89). Pre and post-test scores mean percentage of overall performance were visually depicted in Figure 1. Additionally, an independent-samples *t*-test indicated a statistically significant difference between receptive knowledge (FIT) and productive knowledge (FRT) at both the pre-test (t = 7.87, p < 0.05, d = 0.68) and post-test (t = 6.84, p < 0.05, d = 0.70) stages, with all effect sizes being large. These findings suggested that receptive vocabulary knowledge preceded productive knowledge acquisition. Overall, the results indicated that exposure to vocabulary via Facebook enhanced vocabulary development in Thai EFL primary school students, encompassing receptive and productive knowledge domains.

Figure 1





The enhancement of word form knowledge could be attributed to vocabulary learning facilitated by cognitive processes such as noticing, retrieval, and creative use. Noticing required learners to closely attend to the target L2 word, a process facilitated in the current study through the intentional viewing of content videos posted on Facebook. These videos, comprising texts, images, and sounds, provided ample opportunities for productive spelling development.

Moreover, the unlimited accessibility of content videos enabled students to repeatedly encounter target words, solidifying learning through retrieval processes. The likelihood of word retention and deepened understanding increased by requiring participants to type correct spelling forms in the comment section. This aligned with previous research indicating that repeated exposure and retrieval of L2 words contributed to better comprehension (Hulstijn & Laufer, 2001; Magnussen & Sukying, 2021; Ponsamak & Sukying, 2023; Yowaboot & Sukying, 2022).

The teacher's practice of allowing learners to compile and post all learned words collectively after class further reinforced this learning approach. These findings were consistent with prior studies emphasizing the importance of repetition and retrieval in extending word meaning and comprehension. Ultimately, the study underscored the efficacy of utilizing Facebook as an instructional platform for vocabulary learning and teaching. It highlighted the effectiveness of explicit learning efforts in acquiring vocabulary, corroborating previous research (Nation & Meara, 2010).

The advancements in vocabulary knowledge could be attributed to the depth of processing, as proposed by Craik and Lockhart (1972), wherein increased engagement with a new vocabulary item enhances its recognition and learning potential. Hulstijn and Laufer (2001) further expounded on this idea, suggesting that involvement in vocabulary acquisition entailed three stages: need, search, and evaluation. 'Need' represents the intrinsic motivation driving learners to understand certain aspects of a word to improve comprehension of a reading passage. 'Search' involved actively seeking out the required information, such as consulting a dictionary for the form-meaning link of the word. 'Evaluation' encompassed retrieving the word's meaning or related information within the context of use to determine its suitability or appropriateness.

The current study validated the concept of depth of processing, as evidenced by the students' enhanced performance on receptive and productive knowledge measures within the Facebook group. This finding was consistent with prior assertions that tasks incorporating need, search, and evaluation elements lead to more effective learning outcomes (Ellis & He, 1999; Laufer & Goldstein, 2004; Laufer & Hulstijn, 2001).

2. Knowledge of Receptive and Productive Vocabulary between Education Levels

Figure 2 illustrates the scores for fourth- and sixth-grade participants on the FIT and FRT at the pre-test and post-test. The figure suggested that post-test scores on FIT and FRT were higher than the pretest scores for both grades. In addition, the sixth-grade participants performed better on all tests than the fourth-grade participants.



Figure 2

Score Percentage Comparison between Grade Four and Six Learners

Specifically, the sixth-grade participants' pre-test scores (FIT; 30.77% and FRT; 23.07%) were higher than the fourth-grade participants' pre-test scores (FIT; 22.43% and FRT; 13.33%). Furthermore, the sixth-grade participants' post-test scores (FIT; 49.73% and FRT; 35.90%) were higher than the fourth-grade participants' post-test scores (FIT; 36.37% and FRT; 26.37%).

Table 5 summarizes the findings based on education levels. An independent-sample *t*-test was used to compare the test performance of the two education levels. There was a significant difference in pre-test scores on the FRT (t = 2.26, p < 0.05, d = 0.93), with a large effect size (Cohen, 1988; Hopkins, 2002). There were no significant differences between grade-four and grade-six students on the FIT pre-test (t = 1.89, p = 0.07) and post-test (t = 1.94, p = 0.07) or on the FRT post-test (t = 1.47, p = 0.16, d = 0.62). These results suggested that the participants mastered their word knowledge following their education levels, and students' language exposure and experience significantly impacted their ability to learn a word.

Time	Test	Grade Four $(n = 18)$		Grade Six $(n = 22)$			(1	1	
Time		М	%	S.D.	М	%	S.D.	- <i>l</i> -value	a
	FIT	6.73	22.43	2.61	9.23	30.77	3.68	1.89	0.78
Pre-test	FRT	4.00	13.33	2.83	6.92	23.07	3.40	2.26*	0.93
Deatheast	FIT	10.91	36.37	3.88	14.92	49.73	5.87	1.94	0.81
Post-test	FRT	7.91	26.37	2.98	10.77	35.90	5.82	1.47	0.62

Table 5

Regarding education levels, the current study showed that students with a higher education level scored higher than their lower counterparts. Specifically, the sixth-grade participants outperformed the fourth-grade participants on all tests. This result was consistent with previous studies that learners' knowledge of vocabulary increased with their language exposure and learning experience (Matwangsaeng & Sukying, 2023; Sukying, 2018, 2022; Sukying & Matwangsaeng, 2022). These findings also suggested that vocabulary learning was incremental; different aspects of a word were accessible at other times.

3. Relationship between the Written Form of Word Knowledge and Vocabulary Size

As shown in Table 6, a correlational analysis was conducted to examine the relationship between the vocabulary size test (VST) performance and the written form of word knowledge tests (FIT and FRT). Pearson correlations were precisely calculated to examine the strength and the direction (positive and negative) of the relationship between the participants' vocabulary size and overall performance of written form of word knowledge.

Table 6

Correlation between Vocabulary Size and Written Form of Word Knowledge (Pearson Correlations, r)

Test	Vocabulary Size	Word Knowledge (Written Form)
Vocabulary Size	1	.455*
Word Knowledge (Written Form)	.455*	1

Note. Correlation is significant at 0.05 level (2-tailed).

The analysis results indicated a positive correlation between vocabulary size performance and proficiency in the written form of word knowledge. A significant positive correlation was found between performance on tests measuring vocabulary size and receptive and productive written forms of word knowledge (r = .455*). Notably, when examining only participants in grades four or six, the correlation between vocabulary size (VST) and receptive (FIT) and productive (FRT) performances in the written form of word knowledge remained positive for both groups. Specifically, the correlation coefficients were r = .470 and r = .486 for receptive performance and r = .347 and r = .319 for productive performance, respectively (see Tables 7 and 8).

Table 7

Correlation Coefficients for Vocabulary Size and Knowledge of Written Form Performance Receptively and Productively among the Grade-4 Learners (Pearson Correlations, r)

Level	Test	FIT	FRT
Grade 4 (<i>n</i> = 18)	VST	.470	.486

Note. Correlation is significant at 0.05 level (2-tailed).

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This result aligned with previous studies (Matwangsaeng & Sukying, 2023) demonstrating a positive correlation between vocabulary size and performance in the written form of word knowledge receptively and productively. Specifically, proficiency in the written form of word knowledge increased as vocabulary size increased. These findings suggested that learners with a larger vocabulary size were likely to excel receptively and productively in understanding written words.

In essence, vocabulary breadth predicted receptive and productive knowledge in the written form of word knowledge. Therefore, based on these results, it was crucial to promote the expansion of vocabulary size and enhance proficiency in the written form of word knowledge in Thai education.

Table 8

Correlation Coefficients for Vocabulary Size and Knowledge of Written Form Performance Receptively and Productively among the Grade-6 Learners (Pearson Correlations, r)

Level	Test	FIT	FRT
Grade 6 (<i>n</i> = 22)	VST	.347	.319

Note. Correlation is significant at 0.05 level (2-tailed).

Discussion

The study on the influence of word exposure via Facebook on young EFL Thai learners' written form of word knowledge reveals significant enhancements in both receptive and productive vocabulary knowledge, demonstrated by significant improvements in performance scores following an educational intervention through Facebook. Specifically, the increase in scores from pretests to post-tests in both the Form Identification Test (FIT) and the Form Recall Test (FRT) underscores the effectiveness of Facebook as a platform for enhancing vocabulary acquisition among Thai EFL primary school learners (Hulstijn & Laufer, 2001; Magnussen & Sukying, 2021; Ponsamak & Sukying, 2023).

Interactive Facebook could also account for the increase in word spelling. Online Facebook can significantly enhance spelling skills among Thai primary school students by fostering interactive and engaging learning experiences. Teachers can post daily spelling challenges, quizzes, and targeted words through dedicated groups, enabling peer learning and immediate feedback. This interaction makes learning more enjoyable through gamification and allows students to see vocabulary used in real-world contexts, which is crucial for understanding and retaining correct spelling. Additionally, this online platform's ability to provide diverse resources and instant corrections encourages continuous learning and improvement in a dynamic, supportive environment.

This progression aligns with cognitive theories of learning that emphasize the importance of noticing, retrieval, and creative use in vocabulary acquisition. The deliberate engagement with

—multimedia content on Facebook facilitated these cognitive processes, allowing learners to encounter, retrieve, and actively use target words in meaningful contexts. Such engagement is pivotal for deepening word knowledge, as evidenced by the significant improvement in spelling accuracy and word retention among participants.

The findings support previous research indicating that repeated exposure and active retrieval of second language (L2) words are crucial for enhancing comprehension and retention (Nation & Meara, 2010). The study's methodology, which leveraged Facebook's interactive and multimedia abilities, effectively embodied Craik and Lockhart's (1972) depth of processing theory, suggesting that deeper cognitive engagement with a vocabulary item significantly boosts its learning potential.

Moreover, the distinction between receptive and productive knowledge gains highlights the progressive nature of vocabulary learning, where understanding a word's form and meaning precedes its active use. This sequencing further illustrates the incremental nature of vocabulary acquisition, requiring both passive recognition and active application skills (Laufer & Goldstein, 2004; Laufer & Hulstijn, 2001).

The application of tasks that involve need, search, and evaluation stages, as proposed by Hulstijn and Laufer (2001), was evident in the learning activities conducted via Facebook. These activities necessitated learners to identify a need for vocabulary understanding, actively search for meanings or forms, and evaluate their appropriateness or correctness in context. Such tasks enhance engagement with the learning material and ensure a deeper processing of vocabulary items, leading to more effective and enduring learning outcomes (Ellis & He, 1999).

The study advocates using Facebook as a potent instructional tool for vocabulary development in EFL contexts. It emphasizes the importance of incorporating deliberate, repetitive, and contextually rich vocabulary learning activities. These findings resonate and expand upon existing research, highlighting the potential of social media platforms to facilitate practical vocabulary learning experiences that cater to the dynamic needs of young EFL learners.

Regarding Research Question 2, investigating receptive and productive vocabulary knowledge across different education levels among EFL learners has illuminated notable disparities in achievement between fourth and sixth graders. This differential performance, as demonstrated through pretest and post-test scores on both the Form Identification Test (FIT) and Form Recall Test (FRT), underscores a progressive development in vocabulary knowledge with advancing educational levels. The superior performance of sixth-grade participants over their fourth-grade counterparts across all metrics highlights the developing nature of language acquisition. It aligns with established theories on the incremental development of vocabulary knowledge.

These findings resonate with the body of research that posits vocabulary knowledge as a function of direct language exposure and educational experience. Consistent with Matwangsaeng and Sukying (2023), and Sukying (2018, 2022), the present results reinforce the notion that vocabulary learning is a gradual process, where familiarity with and mastery over both the form and usage of words expand over time. This conceptualization is further supported by the significant difference in pretest scores on the FRT, which suggests that

 productive vocabulary knowledge may be more complex regarding the effects of educationalprogression.

The lack of significant differences in the FIT pretest and posttest scores between the two grades, alongside the FRT posttest scores, could be attributed to the varying rates at which receptive and productive knowledge develops. This observation is pivotal in understanding the dynamics of vocabulary acquisition, suggesting that while receptive knowledge might establish a foundational base, productive knowledge requires a more extensive period of learning and exposure to mature fully.

Moreover, the effect sizes reported in this study provide quantitative backing to the result of educational level impacting language learning, with larger effects observed in productive knowledge (Cohen, 1990; Hopkins, 2002). This finding is crucial for educators and curriculum developers, highlighting the importance of designing age and level-appropriate learning interventions that cater to the evolving linguistic capabilities of learners.

In summary, the study contributes to the lexicon of empirical evidence supporting the link between education level and vocabulary acquisition. It offers insights into the mechanisms through which receptive and productive vocabulary knowledge develops. Elucidating the incremental nature of vocabulary learning underscores the significance of sustained educational efforts and targeted language exposure in fostering a deeper, more comprehensive mastery of a second language.

Regarding Research Question 3, the correlational analysis reveals a significant positive relationship between vocabulary size and proficiency in the written form of word knowledge among EFL learners. The findings, indicating a correlation coefficient ($r = .455^*$), underscore the interrelated nature of vocabulary size with both receptive and productive aspects of written word knowledge. This relationship holds across different educational levels, with fourth and sixth-grade students showing a positive correlation between vocabulary size and their performance on tests measuring the written form of word knowledge, receptively and productively.

These results resonate with existing literature that highlights the fundamental role of vocabulary knowledge in determining proficiency in various linguistic competencies, including the written form of word knowledge. For instance, studies by researchers such as Laufer (1998) and Nation (2006) have consistently demonstrated a positive correlation between vocabulary size and reading comprehension, closely related to written form knowledge. Specifically, as vocabulary size expands, so does the learner's ability to understand and produce written content, reinforcing the premise that a robust vocabulary is foundational to language proficiency across educational levels (Sukying, 2018, 2022).

Moreover, the differentiation in correlation coefficients between receptive (.470 and .486 for fourth and sixth graders, respectively) and productive (.347 and .319 for fourth and sixth graders, respectively) word knowledge suggests that while vocabulary size is crucial for both, it may have a slightly more pronounced impact on receptive abilities. This difference further illuminates the complex dynamics of vocabulary acquisition, where understanding words (receptive knowledge) may be directly influenced by the number of words a learner knows. In

contrast, the ability to use them (productive knowledge) involves additional linguistic and cognitive processes.

This study aligns with previous research highlighting the importance of focusing educational strategies on enhancing vocabulary size to bolster written form word knowledge (Matwangsaeng & Sukying, 2023; Mochizuki & Aizawa, 2000; Sukying, 2018). Such findings support integrated vocabulary instruction that aims to increase the number of words students know and deepen their understanding and ability to use these words in written forms. This approach is especially pertinent in Thai education, where building a comprehensive vocabulary foundation can significantly impact EFL learners' overall language proficiency.

Conclusion

This study explored the influence of Facebook-mediated word exposure on Thai EFL learners' vocabulary acquisition and yielded insightful conclusions. It demonstrates that Facebook, a platform prevalent in students' daily lives, can effectively enhance receptive and productive vocabulary knowledge. The improvements observed in learners' performance from pretests to post-tests substantiate the potential of social media as a valuable resource for language learning, particularly in contexts where traditional exposure to the target language is limited. Furthermore, the study highlights the influence of educational level on vocabulary acquisition, with older students showing greater gains. This underscores the cumulative nature of language learning and the necessity for instructional materials and methods tailored to learners' developmental stages. Additionally, the positive correlation between vocabulary size and word knowledge emphasizes the importance of a broad vocabulary base for mastering more complex language skills. However, the study's emphasis on a specific learner population and its quantitative methodology present limitations, suggesting further research across diverse contexts and mixed-methods approaches to capture the full continuum of social media's impact on language learning.

In conclusion, this research contributes to the growing evidence supporting integrating digital platforms like Facebook into EFL teaching and learning strategies. It advocates for leveraging social media not just as a tool for communication but as a rich resource for language exposure and engagement, offering a dynamic supplement to traditional language education methods. Future studies are encouraged to expand on these findings, exploring the long-term effects of social media-based learning and the potential of various platforms to support different aspects of language acquisition.

Recommendations

1. Implications

This quantitative study investigated the influence of Facebook-based word exposure on Thai EFL primary school learners and offers several implications. First, the study's significant findings suggest that Facebook, a ubiquitous social media platform, can effectively enhance vocabulary knowledge among young EFL learners. Notably, it affirms the potential of digital platforms in facilitating language learning outside the traditional classroom setting,

emphasizing the value of integrating social media into educational strategies to promote vocabulary development. This aligns with the broader educational imperative to leverage technology to enrich learning experiences, especially in contexts with limited direct English language exposure.

Moreover, the observed differences in vocabulary knowledge between fourth and sixth graders underline the importance of educational level in language acquisition, reinforcing the need for age-appropriate teaching materials and methods. The correlation between vocabulary size and word knowledge highlights the pivotal role of extensive vocabulary in mastering the written form, suggesting that vocabulary breadth should be a key focus of language instruction.

2. Further Studies

The study's scope, focusing solely on a specific cohort of Thai EFL learners, limits its generalizability across different linguistic, cultural, and educational contexts. Additionally, its reliance on quantitative measures may not capture the full complexity of the vocabulary learning process or account for individual differences in learning styles, motivation, and prior knowledge. The study also does not explore the qualitative aspects of learner engagement on Facebook, such as the nature of interactions or the depth of cognitive engagement with the content.

Future studies should expand the demographic scope to include learners from various backgrounds to increase the generalizability of findings. Implementing a mixed-methods approach would allow for a more nuanced understanding of how social media platforms like Facebook contribute to language learning, incorporating qualitative data on learner engagement, motivation, and interaction patterns.

Investigating the long-term effects of social media-based language learning interventions on vocabulary retention and application in other language skills (listening, speaking, and reading) could provide insights into the efficacy and sustainability of such approaches. Furthermore, comparative studies examining the impact of different social media platforms on language learning could help educators identify the most effective tools for vocabulary instruction. Additionally, future research could explore the integration of pedagogical strategies designed to maximize the educational benefits of social media, examining how specific features of platforms like Facebook can be leveraged to support different aspects of language learning, such as collaborative learning, peer feedback, and authentic language use in real-world contexts.

Overall, this study accentuates the promising potential of integrating social media into language learning curricula, advocating for exploring digital platforms to enhance EFL learners' vocabulary acquisition.

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