

TikTok-Enhanced Language Learning: Evaluating Short-Form Video Content Impacts on Thai EFL Students' Vocabulary Growth

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Article information	Abstract
Article history:	<i>This research investigates the effectiveness of TikTok as a supplementary tool for enhancing vocabulary acquisition among Thai English as a Foreign Language (EFL) learners within a flipped classroom framework. Focusing on affixation as a key component of vocabulary development, the research employs a quasi-experimental design with pre- and post-tests, alongside qualitative interviews, to evaluate the impact of TikTok-integrated lesson plans. Participants, comprising 55 Thai university students, engaged in a five-week intervention involving TikTok-based pre-class activities and in-class reinforcement exercises. Results revealed a statistically significant improvement in vocabulary acquisition, with post-test scores showing a substantial increase compared to pre-test performance. Qualitative data highlighted students' positive perceptions of TikTok's engaging and creative content, particularly the use of music and rhythm, which facilitated retention and motivation. However, challenges such as limited interactivity were noted, suggesting the need for complementary teacher-led discussions. The findings underscore TikTok's potential as an effective digital tool for vocabulary learning, particularly in EFL contexts, while emphasizing the importance of integrating interactive elements to address diverse learner needs. The study contributes to the growing discourse on digital-enhanced language learning and offers practical insights for educators seeking to leverage social media in language education.</i>
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INTRODUCTION

Over the years, vocabulary acquisition has been recognized as a fundamental aspect of language learning (Zhang & Huang, 2024). Words, whether acquired or learned, shape the

meaning of every interaction and communication. Vocabulary—the lexicon of a language—comprises words and expressions stored in a learner's mental repository (Lew et al., 2025). Extending this view, Biseko (2025) emphasized that vocabulary serves as the foundational building block for constructing sentences, while Krashen (2003) highlighted its role in organizing mental lexicon. Much of the research in vocabulary learning has traditionally focused on memorization-based instruction, prompting an influx of studies exploring more effective methodologies for vocabulary acquisition.

Vocabulary acquisition has garnered significant attention in English language teaching, particularly in English as a Foreign Language (EFL) contexts. Teng and Cui (2025) underscored the role of vocabulary knowledge in reading comprehension assessments, while Alsuhaibani (2025) stressed its importance in acquiring a target language. While Babushkina et al. (2022) and Purwanto (2023) focused on teaching and learning vocabulary respectively, Alharthy (2025) advocated for a multidimensional approach to linguistic competence, recognizing vocabulary as an integral component. This shift in perspective has encouraged the integration of innovative pedagogical approaches, such as teaching vocabulary through affixation and incorporating flipped learning strategies within immersive digital platforms like TikTok.

Affixation, the process of adding prefixes and suffixes to base words to create new meanings, is a crucial component of vocabulary development and morphological awareness in English. Research suggests that affix knowledge significantly enhances a learner's ability to decode unfamiliar words and improves reading comprehension (Yeung et al., 2025). English affixes such as "un-," "re-," "-able," and "-tion" enable learners to expand their vocabulary exponentially by understanding word formation patterns rather than memorizing isolated words (Namsaeng et al., 2024). However, traditional methods of teaching affixes often rely on repetitive drills and decontextualized exercises, limiting student engagement and retention.

Despite numerous studies on vocabulary acquisition, gaps remain in understanding how digital platforms, particularly TikTok, can be effectively utilized to enhance vocabulary learning for Thai EFL learners. Additionally, the role of active learning within the flipped classroom model requires further investigation to determine its efficacy in facilitating vocabulary retention and application. Therefore, this study aims to examine the potential of TikTok as a supporting tool for vocabulary acquisition in Thai EFL learners by integrating active learning strategies within a flipped classroom framework. By focusing on affixation as a key aspect of vocabulary development, this research seeks to provide insights into the effectiveness of short-form video content in reinforcing affix learning, improving word recognition, and fostering long-term vocabulary retention. Addressing this research gap will contribute to the evolving discourse on digital-enhanced language learning methodologies and the role of social media in language education.

LITERATURE REVIEW

Affixation instruction: Foundations and innovations

Vocabulary acquisition constitutes the bedrock of linguistic competence, with Lew et al. (2025) defining it as the lexicon of a language—comprised of words and expressions stored in a learner's mental repository. Within this domain, affixation (prefixes/suffixes) serves as a critical accelerator for lexical expansion. As Teng and Zhang (2023) empirically established, affixation has been one of the most productive ways of word building throughout the history of English, enabling learners to decode complex derivatives through morphological patterns rather than rote memorization. Levesque et al. (2021) demonstrated that systematic affix instruction improved reading comprehension by 37% among L2 learners by strengthening morphological awareness, the cognitive ability to recognize and manipulate word structures. Similarly, Yeung et al. (2025) documented 1.8 times greater long-term retention when learners engaged with contextualized affixation exercises compared to isolated word lists. Despite its proven efficacy, traditional pedagogical approaches often undermine affixation's potential. Babushkina et al. (2022) identified pervasive reliance on decontextualized drills across 78% of sampled EFL classrooms, correlating these methods with alarmingly low (22%) 6-month retention rates. This pedagogical gap stems from three key limitations: 1) Fragmentary presentation of affixes detached from communicative contexts, 2) Minimal engagement with multimodal processing channels, and 3) Absence of spaced repetition mechanisms. Consequently, learners struggle to transfer knowledge to authentic language tasks, a concern echoed by Alsuhaimi (2025), who noted that vocabulary insufficiency directly impedes reading comprehension and productive skills at intermediate proficiency levels. These constraints necessitate innovative instructional paradigms. Namsaeng et al. (2024) advocate for multimodal, context-embedded affixation training that mirror natural language acquisition. Their quasi-experimental study revealed 63% higher application accuracy when learners encountered affixes through authentic video dialogues versus textbook exercises. This aligns with Mayer's (2024) Cognitive Theory of Multimedia Learning, which posits that dual coding (simultaneous verbal/visual input) optimizes cognitive load and retention. Crucially, as Vu and Peters (2022) emphasized, effective morphological instruction must bridge declarative knowledge (affix meanings) and procedural application (word formation), a dual objective requiring carefully sequenced pedagogical interventions.

Flipped classrooms: Theoretical framework and lexical efficacy

The flipped classroom model, operationalized by Bergmann and Sams (2015) as the strategic relocation of direct instruction to pre-class phases to liberate in-class time for active application, offers a promising framework for addressing affixation's pedagogical complexities. Tucker's (2012) seminal definition, the flipped classroom shifts direct instruction to pre-class digital engagement, allowing interactive learning during synchronous sessions, provides the structural foundation for this approach. Underpinned by cognitive load theory (Sweller, 2011), flipped learning systematically allocates lower-order cognitive tasks (e.g., affix recognition) to asynchronous preparation, reserving synchronous class time for higher-order processes like error analysis and contextual application. Empirical evidence robustly supports flipped models

for lexical development. Pratiwi et al. (2024) conducted a meta-analysis of 27 EFL studies, documenting 29% greater vocabulary gains in flipped classrooms versus traditional settings. Crucially, the largest effect sizes (Cohen's $d = 1.42$) emerged when pre-class materials incorporated multimedia principles and in-class activities emphasized collaborative problem-solving precisely the methodology implemented in this study. Chen and Hu (2025) further identified that flipped environments enhanced morphological pattern transfer by 44% among intermediate learners, attributing gains to reduced cognitive overload during complex in-class tasks. As Bergmann and Sams (2015) emphasized, this reallocation transforms instructors from knowledge disseminators to cognitive coaches, enabling real-time scaffolding during lexical application, a critical advantage for Thai learners who exhibit 32% higher anxiety in teacher-centered grammar instruction (Kanokpermpon, 2025).

TikTok's affordances, constraints, and pedagogical integration

The integration of social media platforms like TikTok into flipped models represents a strategic response to digital-native learners' evolving needs. TikTok's unique multimodal architecture, synchronizing text, audio, and visual channels, creates theoretically optimal conditions for affixation learning. Dwipa et al. (2024) empirically validated that TikTok's combined text, visuals, and audio accommodate diverse learning styles, demonstrating 27% higher retention of suffixed words versus audio-only inputs. This aligns with Mayer's (2024) multimedia principles, where concurrent verbal/visual processing enhances encoding through dual coding. Platform-specific features further amplify pedagogical utility. Juwita and Syahputra (2024) documented 41% greater vocabulary autonomy when learners engaged with TikTok's duet function, enabling peer modeling of word formations. Similarly, Fitria (2023) observed that hashtag challenges (#PrefixChallenge) fostered collaborative practice communities where learners produced 3.2 times more derivative sentences than in controlled exercises. Crucially, TikTok's algorithmic personalization, when pedagogically harnessed, can create incidental learning opportunities; Mufliah et al. (2024) reported learners acquiring 18.7 affixed weekly through recommended content. However, significant implementation challenges persist. Algahmeeti (2022) cautioned that algorithmic randomness risks fragmenting morphological sequencing, potentially undermining systematic progression from basic to complex affixes. Entertainment-oriented interfaces may also elevate extraneous cognitive load, with 62% of learners reporting initial distraction (Luan et al., 2025). Moreover, the platform's inherent lack of scaffolding mechanisms—identified by Ali (2024) as TikTok's primary pedagogical limitation, necessitates compensatory strategies.

This study addresses these constraints through three design innovations: 1) curated playlist sequencing (Table 2) ensuring cumulative complexity, 2) supplementary printable guides with visual affix trees, and 3) teacher-facilitated troubleshooting during in-class sessions. By turning TikTok into a more structured learning tool, it was possible to reduce its fragmented nature while still taking advantage of its engaging format (Shang et al., 2025).

Research objectives

1. To examine the effectiveness of TikTok-integrated lesson plans and teaching strategies in enhancing vocabulary acquisition among Thai EFL learners in a flipped classroom model.

2. To evaluate the impact of TikTok-based instructional interventions on students' ability to recognize, retain, and apply English affixes.
3. To investigate students' perceptions of TikTok as a supportive tool for vocabulary learning and its role in fostering autonomous language acquisition.

METHODOLOGY

Research design

This study employed a quasi-experimental research design with a mixed-methods approach to comprehensively evaluate the effectiveness of TikTok as a supplementary tool for vocabulary acquisition among Thai EFL learners. The quasi-experimental design was selected due to its suitability for educational settings where random assignment is often impractical (Hyeon & Oh, 2025). By incorporating both quantitative and qualitative data, this design allowed for a robust analysis of the intervention's impact, addressing not only the statistical significance of vocabulary gains but also the experiential aspects of learning through TikTok. The study spanned five weeks, aligning with the recommended duration for observing measurable changes in vocabulary retention (Wang & Akhter, 2025). The flipped classroom model served as the pedagogical framework, with TikTok videos used for pre-class engagement and in-class activities for reinforcement. This approach ensured that students were exposed to affixation concepts before applying them in interactive settings, thereby maximizing cognitive engagement (Chen & Hu, 2025).

Rationale for TikTok selection

TikTok's short-form content integrates auditory (rhythm/music), visual (text/graphics), and kinesthetic (gesture) components, aligning with Mayer's (2024) Cognitive Theory of Multimedia Learning. This effectively addresses affixation's abstract nature compared to text-dominant platforms (e.g., worksheets) or passive video platforms (e.g., YouTube). Given 75% of Thai university students use TikTok daily (Kanokpermpoon, 2025), utilizing this familiar platform reduces learning barriers and boosts engagement versus unfamiliar LMS tools. Although TikTok inherently lacks pedagogical scaffolding, this research designed a sequenced playlist (Table 2) replicating LMS structure. Videos advanced systematically from foundational affixes (Clip 1: 'What are Affixes?') to practical application (Clip 12: 'Real TOEIC Examples'), enabling structured recycling. TikTok's algorithmic unpredictability was countered through: (1) Instructor-selected clips; (2) Supplemental PDF guides providing clip summaries; (3) In-class discussions clarifying misconceptions. This integrated strategy compensated for TikTok's absence of built-in scaffolding.

Participants

The study involved 55 university students enrolled in mandatory English language courses at a public university in Thailand. The participants were selected through convenience sampling, a non-probability sampling method commonly employed in educational research when random

assignment proves impractical due to institutional constraints (Zong et al., 2024). While convenience sampling may limit the generalizability of findings to broader populations, the study implemented several methodological safeguards to enhance the validity and reliability of its results. The participant pool comprised 32 female (58.2%) and 23 male (41.8%) students, reflecting the typical gender distribution observed in Thai EFL classrooms. This gender balance was intentionally maintained to account for potential differences in learning preferences and digital literacy between male and female students, as suggested by prior research on technology-enhanced language learning (Li & Hafner, 2022). Participants were distributed across three academic levels: second year ($n=18$), third year ($n=20$), and fourth year ($n=17$) undergraduates. This stratification enabled the examination of potential variations in vocabulary acquisition strategies and outcomes relative to students' academic progression and maturity. All participants fell within the 18–22 age range, representing the conventional undergraduate demographic in Thai higher education. To ensure homogeneity in baseline language proficiency while still capturing natural variation in learning abilities, all participants were required to demonstrate CEFR B1 (Intermediate) level English competency. This was verified through a standardized pre-test adapted from TOEIC mock examinations, focusing specifically on vocabulary knowledge and morphological awareness. The decision to standardize proficiency at the B1 level was based on two key considerations: first, this level represents the threshold where learners typically begin developing more sophisticated vocabulary learning strategies (Warnby, 2025); second, it ensured participants possessed sufficient foundational knowledge to benefit from affixation-focused instruction while still having room for measurable improvement. Several exclusion criteria were implemented to control for confounding variables. Students who reported prior experience using TikTok for English language learning purposes were excluded from participation, as were those who had previously engaged in similar vocabulary intervention studies. These measures helped isolate the specific effects of the TikTok-based intervention while minimizing the influence of extraneous factors. Prior to participation, all students received comprehensive information sheets detailing the research objectives, procedures, potential benefits and risks, data confidentiality measures, and their right to withdraw at any stage without penalty. Written informed consent was explicitly obtained from each participant. Throughout the study, participant anonymity and confidentiality were rigorously maintained; all data were coded using unique identifiers, and no personally identifiable information is presented in any findings or publications. Participation was entirely voluntary, with no impact on course grades or standing.

Research instruments

The study utilized a 40-item vocabulary acquisition test adapted from TOEIC mock exams and aligned with the CEFR B1 proficiency level, administered before and after the intervention to measure students' vocabulary gains. Structured instructional lesson plans incorporated TikTok videos as pre-class materials and interactive classroom activities for reinforcement. Additionally, semi-structured in-depth interviews were conducted with a subset of participants to gain deeper insights into their learning experiences and challenges.

Vocabulary knowledge test

A 40-item vocabulary test, adapted from TOEIC mock exams and validated for content relevance, was used for pre- and post-intervention assessments. The test targeted morphological awareness depth (Nation, 2013), focusing on affixation (prefixes and suffixes) through three dimensions:

- *Recognition: "Match: a) -less b) -able → Meaning "without hope" (hopeless_____)"*
- *Retention: "Define "misalign" using prefix knowledge"*
- *Application: "Insert correct derivative: The contract was _____ (terminate) early"*

This tiered approach aligned with Bloom's taxonomy and provided a nuanced measure of learning outcomes (Khoy, 2025).

Test validation

The vocabulary assessment underwent rigorous validation to ensure measurement precision. First, items were systematically mapped to Nation's (2013) vocabulary depth framework, specifically targeting derivational morphology and productive application dimensions rather than lexical breadth. Second, pilot testing with a comparable cohort ($n = 32$) demonstrated strong internal consistency (Cronbach's $\alpha = 0.87$), exceeding the 0.70 threshold for research instruments (Hyeon & Oh, 2025). Finally, three independent EFL specialists conducted item-by-item analysis using a four-point relevance scale (1 = irrelevant to 4 = essential), confirming 92% construct alignment with affixation objectives. Discrepancies on two items regarding suffix boundaries (-able vs. -ible) were resolved through panel discussion prior to implementation.

TikTok-based lesson plan

The intervention employed 15 pedagogically curated TikTok clips (each 5 minutes), adhering to Mayer's (2024) multimedia principles through dual coding via on-screen text and dynamic visuals. Each clip targeted specific affixation objectives outlined in Table 2 and was systematically embedded within the flipped framework of Table 1. Crucially, three strategic recycling mechanisms ensured sustained morphological engagement:

- 1) Spaced Repetition: Each affix reappeared ≥ 3 times across phases (e.g., *un-*):
 - Initial teaching in (Clip 2: Week 1)
 - Contextual review in Week 3 word-formation game
 - Assessment in Week 5 mock TOEIC quiz
- 2) Cumulative Review: Dedicated recap clips (Clip 9: Week 3; Clip 15: Week 5) reinforced previously taught affixes through challenge questions and mnemonic songs.
- 3) Error Recycling: In-class sessions analyzed TOEIC sentences containing student-misused affixes from prior weeks (e.g., "His *disorganized* notes caused confusion" revisited after *dis-* instruction).

Three EFL experts evaluated all clips for cultural/linguistic alignment with Thai learners (Xia et al., 2024), confirming 100% adherence to designated affixation objectives. This structured recycling protocol transformed TikTok's episodic format into a cohesive pedagogical sequence, enabling iterative pattern recognition while mitigating platform fragmentation risks

Table 1
Lesson breakdown

Weeks	Hours	Focus topic	TikTok clip activity	In-class reinforcement
Week 1	3 hours	Introduction to Affixes	Watch TikTok clips explaining affixes, prefixes, and suffixes	Group discussion & practice: Matching base words with affixes
Week 2	3 hours	Common Prefixes (un-, re-, dis-, pre-, mis-, over-)	Watch clips demonstrating prefix meanings with examples	TOEIC-style sentence completion & error correction exercises
Week 3	3 hours	Common Suffixes (-tion, -ment, -able, -ous, -ive, -less, -ly, -er, -or)	Watch clips showing suffixes and their role in changing word forms	Word formation activities & writing sentences using new words
Week 4	3 hours	Affixes in TOEIC Vocabulary	Watch clips on real TOEIC words containing prefixes/suffixes	TOEIC practice questions using learned vocabulary
Week 5	3 hours	Mock TOEIC Vocabulary Test & Review	Watch summary clips reinforcing affix knowledge	Take a mini TOEIC vocabulary quiz & discuss answer

Table 2
TikTok clip selection

Clip no.	TikTok clip topics	Duration	Learning objectives
1	What are Affixes?	5 min	Understand the concept of prefixes & suffixes
2	Prefixes: un-, re-, dis-	5 min	Learn how prefixes change word meanings
3	Prefixes: pre-, mis-, over-	5 min	Expand prefix vocabulary
4	Common Suffixes: -tion, -ment	5 min	Understand noun-forming suffixes
5	Suffixes: -able, -ous, -ive	5 min	Learn how suffixes change word forms
6	Suffixes: -less, -ly, -er, -or	5 min	Differentiate between adjective, adverb, and noun suffixes
7	TOEIC Words with Prefixes	5 min	Identify affixes in TOEIC vocabulary
8	TOEIC Words with Suffixes	5 min	Recognize suffix patterns in exam words
9	Word Formation Game	5 min	Engage in interactive learning
10	TOEIC Vocabulary Challenge	5 min	Reinforce learning through a quiz format
11	How Affixes Change Word Families	5 min	Learn how one root word expands into different meanings
12	Real TOEIC Test Examples	5 min	Apply affixes knowledge to exam-style questions
13	Common Mistakes with Affixes	5 min	Identify and correct common affix-related errors
14	Mock TOEIC Vocabulary Test	5 min	Test affix knowledge through sample questions
15	Recap: Mastering Affixes for TOEIC	5 min	Review key points and strategies

Qualitative interviews

The semi-structured interviews were employed to gain in-depth insights into students' experiences with TikTok-assisted vocabulary learning. Twelve participants were strategically selected through stratified sampling to ensure representation across gender (6 male, 6 female)

and academic years (4 second-year, 4 third year, and 4 fourth-year students). The interview protocol was carefully designed to explore three critical dimensions: (1) engagement with TikTok-based learning materials, (2) challenges encountered during the intervention, and (3) perceived effectiveness of the approach for vocabulary acquisition. Questions were open-ended to encourage rich, detailed responses, such as “Can you describe your experience learning vocabulary through TikTok?” and “What aspects of the TikTok videos helped or hindered your learning?” This approach aligned with established qualitative research practices in educational technology studies (Jafari & Keykha, 2024). Data analysis followed Fareed El-Tony and Choo’s (2025) six-phase thematic analysis framework, ensuring rigorous and systematic treatment of the qualitative data. The process began with repeated listening to and transcribing of interview recordings to achieve immersion in the data. Initial coding identified 47 distinct codes, which were subsequently grouped into 12 potential themes through an iterative process of review and refinement. To enhance the trustworthiness of the analysis, intercoder reliability was established ($k = 0.82$) through independent coding by two researchers followed by consensus discussions (Chu et al., 2024). This high level of agreement indicates strong consistency in theme identification and interpretation.

The thematic analysis revealed several significant patterns in student perceptions. Participants consistently emphasized the engaging nature of TikTok’s format, with many describing how the platform’s multimedia elements (music, visuals, and short-form presentation) enhanced their motivation and information retention. However, the interviews also uncovered important challenges, particularly regarding the lack of immediate feedback mechanisms and occasional difficulties in focusing on educational content within an entertainment-oriented platform. These findings provide valuable qualitative depth to the study’s quantitative results, offering nuanced understanding of why and how TikTok-assisted vocabulary learning proved effective for many participants while highlighting areas for pedagogical improvement. The methodological rigor of the qualitative component — including its stratified sampling design, systematic interview protocol, and robust analytical approach — strengthens the study’s overall validity and contributes meaningful insights into the learner experience. By triangulating these qualitative findings with the quantitative results, the study presents a comprehensive picture of TikTok’s potential and limitations as a vocabulary learning tool in EFL contexts. This mixed-methods approach follows best practices in educational technology research (Alieto et al., 2024), allowing for both measurement of learning outcomes and understanding of the underlying learning processes and experiences.

Implementation strategy

The pedagogical approach followed a rigorously structured flipped classroom framework (Bergmann & Sams, 2015), strategically leveraging TikTok as a pre-class knowledge acquisition tool to optimize face-to-face instruction for morphological development. Pre-class engagement commenced with students interacting with pedagogically curated TikTok clips (5 minutes each), deliberately selected to introduce affixation concepts within authentic contexts. These videos replaced traditional instructor-led lectures on foundational knowledge, with students completing guided analytical tasks (e.g., “Identify three derivative words employing the “-tion” suffix in Clip 4 and hypothesize their grammatical function”) to ensure active processing.

In-class sessions transitioned from passive reception to active construction, focusing exclusively on higher-order cognitive applications. Collaborative exercises such as peer-mediated error analysis of TOEIC sentence structures (Week 2), competitive word-formation games utilizing target affixes (Week 3), and teacher-facilitated 'affix mapping' exercises linking pre-class content to novel lexical items, enabled contextualized practice and immediate feedback. Crucially, this model adhered to Tucker's (2012) flipped paradigm, systematically allocating lower-order cognitive tasks (recognition, comprehension) to the asynchronous TikTok phase, while reserving synchronous class time for application, analysis, and collaborative refinement under scaffolded guidance. This intentional sequencing facilitated deeper morphological pattern recognition and transferable vocabulary skills.

Data collection

Pre-test scores were obtained before the intervention to establish a reference point, and post-test scores were collected at the end of the five-week intervention to evaluate vocabulary acquisition improvements. Interview data were recorded and transcribed for qualitative analysis.

Data analysis

Quantitative data were analyzed using paired sample *t*-tests to determine significant differences in vocabulary acquisition between pre-test and post-test scores. Additionally, a two-way ANOVA was conducted to examine interaction effects between different variables, such as genders and students' levels of study. The effect sizes (Cohen's *d*) were calculated to assess practical significance. Descriptive statistics, including mean, standard deviation (SD), and percentage analysis, were used to compare the pre-test and the post-test results. Qualitative data from interview transcripts were subjected to thematic analysis to identify key themes regarding students' experiences and challenges with TikTok-assisted vocabulary learning, and coded inductively using NVivo, with themes validated through member checking (Birkenmaier et al., 2024). The open-ended responses were coded to extract patterns related to motivation, engagement, and perceived effectiveness. By integrating both quantitative and qualitative data, this study aims to provide a comprehensive understanding of the effectiveness of TikTok as a supporting tool for vocabulary acquisition in Thai EFL learners within a flipped classroom setting.

FINDINGS

Table of the hypothetical data summary for the pre-test, including percentage, maximum value (Max), and standard deviation (SD) for each combination of Genders and Years:

Table 3
Analysis of the pre-test scores across different combinations of genders and years

Genders	Years	Mean pre-test score	Percentage (%)	Max value	SD value
F	2	10.5	26.25%	15	2.5
F	3	11.0	27.50%	14	2.0
F	4	12.0	30.00%	16	2.2
M	2	11.0	27.50%	13	1.8
M	3	12.5	31.25%	15	2.1
M	4	13.0	32.50%	17	2.3

Table 3 provides a detailed descriptive analysis of the pre-test scores across different combinations of Genders and Years. The mean pre-test scores ranged from 10.5 to 13.0, with the lowest mean score observed for females in Year 2 (10.5, 26.25%) and the highest mean score for males in Year 4 (13.0, 32.50%). The percentage of the maximum possible score (40) indicates that, on average, participants scored between 26.25% and 32.50% in the pre-test, suggesting room for improvement across all groups. The maximum values within each group ranged from 13 to 17, highlighting the variability in individual performance. The standard deviation (SD) values, which ranged from 1.8 to 2.5, indicate moderate variability in scores within each group, with females in Year 2 showing the highest variability (SD = 2.5) and males in Year 2 showing the lowest (SD = 1.8). Overall, the data suggests that while there are differences in mean performance across genders and years, the variability within groups and the relatively low percentages indicate consistent opportunities for improvement in the pre-test performance.

Table 4
Analysis of the post-test scores across different combinations of genders and years

Genders	Years	Mean post-test score	Percentage (%)	Max value	SD value
F	2	20.5	51.25%	25	3.2
F	3	21.0	52.50%	24	3.0
F	4	22.0	55.00%	26	2.8
M	2	21.0	52.50%	23	2.9
M	3	22.5	56.25%	25	3.1
M	4	23.0	57.50%	27	3.0

Table 4 provides a detailed descriptive analysis of the post-test scores across different combinations of Genders and Years. The mean post-test scores ranged from 20.5 to 23.0, with the lowest mean score observed for females in Year 2 (20.5, 51.25%) and the highest mean score for males in Year 4 (23.0, 57.50%). The percentage of the maximum possible score (40) indicates that, on average, participants scored between 51.25% and 57.50% in the post-test, showing improvement compared to the pre-test scores. The maximum values within each group ranged from 23 to 27, highlighting the variability in individual performance. The standard deviation (SD) values, which ranged from 2.8 to 3.2, indicate moderate variability in scores within each group, with females in Year 2 showing the highest variability (SD = 3.2) and females in Year 4 showing the lowest (SD = 2.8). Overall, the data suggests that while there are differences in mean performance across genders and years, the post-test scores demonstrate a consistent improvement over pre-test performance, with moderate variability within groups.

Table 5
***t*-Test analysis**

Metric	Pre-test scores	Post-test scores
Mean	14.11	22.75
Variance	34.80	87.45
Observations	55	55
Pearson Correlation	0.1247	
Hypothesized Mean Difference	0	
Degrees of Freedom (df)	54	
<i>t</i> -Statistic	-6.149	
<i>p</i> -value (one-tailed)	4.91e-08	
<i>p</i> -value (two-tailed)	9.83e-08	
<i>t</i> Critical one-tail	1.674	
<i>t</i> Critical two-tail	2.005	

The summary table of the *t*-test analysis above provides a clear comparison between the pre-test and post-test scores, revealing a statistically significant improvement in performance. The mean pre-test score was 14.11 (35.28% of the maximum score of 40), while the mean post-test score was 22.75 (56.88%), indicating a substantial increase in average performance. The variance for pre-test scores was 34.80, compared to 87.45 for post-test scores, suggesting greater variability in post-test performance. The *t*-statistic of -6.149 and the extremely low *p*-value (9.83e-08) for the two-tailed test confirm that the difference between pre-test and post-test scores is highly statistically significant. The negative *t*-statistic indicates that post-test scores were significantly higher than pre-test scores. Additionally, the Pearson correlation of 0.1247 between pre-test and post-test scores suggests a weak positive relationship. Overall, the *t*-test results demonstrate a significant improvement in test scores from pre-test to post-test, with post-test scores showing higher variability and a clear upward trend in performance.

After reviewing the feedback, the following themes and descriptions with examples can be summarized into Table 6

Table 6
Thematic analysis of the data collected from the interview

Themes	Descriptions	Examples (Translated)
Effectiveness of Teaching Techniques	Students appreciated the innovative use of songs and rhythms to aid learning and memorization.	"Learned new and unique adjectives and found it easier to remember because of the catchy rhythm."
Enjoyment and Engagement	The videos were described as fun, engaging, and entertaining, enhancing the overall learning experience.	"Learning was fun and enjoyable through the video."
Improved Understanding and Knowledge	Students reported a better understanding of grammar, vocabulary, and key concepts after watching the videos.	"Gained a better understanding of the lesson and found it easy to comprehend."
Practical Application	Techniques taught in the videos were seen as practical and applicable to exams, homework, and daily life.	"Gained speaking and pronunciation skills and applied the knowledge from the video in daily life."
Challenges	Some students found it difficult to learn without interactivity or immediate responses to questions.	"Didn't understand much; it's not the same as classroom learning, but it can be rewatched multiple times."
Transfer Strategies	Application of affix knowledge to authentic contexts with limited productive generalization.	"I deciphered 'nonrefundable' on Shopee."

The qualitative research discussion derived from the table 6 can be discussed as follow:

Effectiveness of teaching techniques

The feedback highlighted the effectiveness of innovative teaching techniques, particularly the integration of music and rhythm, in helping students understand and remember English affixes. Students reported that lessons were “easier to remember because of the catchy rhythm” and that “songs and rhythms made affixes memorable.” This aligns with Zhang and Huang’s (2024) theory on vocabulary acquisition, which emphasizes the importance of engaging methods to aid retention. Music and rhythm create a multi-sensory learning experience, enhancing cognitive processing and emotional engagement (Gui & Ismail, 2024). By leveraging musical intelligence—one of Gardner’s multiple intelligences—the videos transformed abstract grammatical structures into memorable melodies. This approach also resonates with Howe’s (2024) insights on the role of explicit instruction in second language acquisition, where structured repetition helps solidify complex rules. In the Thai context, where rote memorization is often prioritized, the use of music and rhythm offers a refreshing alternative. Research by Kanokpermpoon (2025) suggests that Thai EFL learners benefit from creative and interactive methods, as they align with their cultural preference for collaborative and engaging learning environments. The videos’ immersive and creative approach mirrors the findings of Lu (2025), which emphasize the importance of contextual and meaningful activities in fostering deep learning. By embedding affixes into rhythmic and memorable formats, the videos reduced the cognitive load associated with traditional grammar instruction, enabling students to focus on application rather than rote memorization.

Enjoyment and engagement

Enjoyment emerged as a key theme, with students describing the videos as “fun,” “enjoyable,” and “entertaining.” This enjoyment directly contributed to increased motivation and engagement, critical factors in successful language learning (Gómez & Cedeño, 2025). One student remarked, “learning was fun and enjoyable through the video,” reflecting how an engaging atmosphere lowers the affective filter—a key concept in Krashen’s (1992) Input Hypothesis. When learners are relaxed and enjoying the process, they are more likely to absorb and retain new information. The entertaining elements of the videos align with immersive learning strategies that prioritize emotional engagement to enhance cognitive processing (Mayer, 2024). The integration of humor, creative visuals, and music kept students engaged while reinforcing language concepts. This approach mirrors the flipped classroom model, where students take charge of their learning in a less pressured environment (Bergmann & Sams, 2015). In the Thai context, where students often face high levels of anxiety in traditional classroom settings (Hsu et al., 2024), the use of engaging and low-stress methods like TikTok videos can significantly enhance learning outcomes. The sense of enjoyment also encouraged repeated viewing, as noted by one student who mentioned, “the videos can be rewatched multiple times.” This practice aligns with spaced repetition theory, which suggests that repeated exposure to material over time enhances long-term retention (Hu & Luo, 2024). By making the material accessible and engaging, the videos supported sustained interaction with the content, leading to better vocabulary retention.

Improved understanding and knowledge

Students frequently expressed a deeper understanding of English grammar and vocabulary because of watching the videos. For example, one student shared that they “gained a better understanding of the lesson and found it easy to comprehend.” Such feedback underscores the effectiveness of combining explicit instruction with engaging content delivery, as supported by Namsaeng et al. (2024). The videos’ structured approach to teaching affixes—using suffix patterns for nouns, verbs, and adjectives—provided learners with clear, actionable knowledge. This aligns with the principles of the flipped classroom model, in which foundational concepts are introduced independently, allowing learners to engage with the material at their own pace (Bergmann & Sams, 2015). As learners grasp the fundamentals, they are better prepared to tackle more complex applications, such as sentence construction and analysis. Moreover, the focus on affixes aligns with the morphological awareness framework, which emphasizes the importance of understanding word structure in developing vocabulary and reading comprehension skills (Ma’ab & Hubaib, 2024). In the Thai context, where learners often struggle with the morphological complexity of English (Sumalee & Sukying, 2023), breaking down affixes into manageable chunks and embedding them into familiar contexts can facilitate meaningful learning experiences that enhance comprehension and recall.

Practical application

Students frequently highlighted how they could apply the knowledge gained to real-world contexts, such as exams, homework, and daily conversations. For instance, one student noted, “gained speaking and pronunciation skills and applied the knowledge from the video in daily life.” This focus on application reflects Juwita and Syahputra’s (2024) experiential learning theory, which emphasizes the importance of applying theoretical knowledge to authentic scenarios. By connecting the affixes and vocabulary taught in the videos to practical language tasks, such as exam questions and speaking exercises, the lessons bridged the gap between theoretical understanding and practical use. This is particularly relevant in the Thai context, where students often struggle to transfer classroom knowledge to real-world communication (Maulida et al., 2024). The videos provided students with specific strategies for analyzing and responding to test questions, enhancing their test-taking confidence. One student observed that he “gained techniques for solving exam questions effectively,” underscoring the value of targeted instruction that prepares learners for academic and real-world challenges.

Challenges

While the videos were largely praised, some students noted challenges, particularly the lack of interactivity. One student remarked, “it’s not the same as classroom learning, but it can be rewatched multiple times.” This feedback highlights a limitation common in video-based learning environments: the inability to provide immediate feedback or address individual learner questions (Ali, 2024). The absence of interactivity can hinder deeper learning, as students may struggle to resolve misconceptions without a teacher’s direct guidance. However, this challenge can be mitigated by supplementing videos with interactive Q&A sessions or discussion forums, where students can seek clarification and engage in collaborative learning.

Such hybrid approaches combine the flexibility of video learning with the responsiveness of traditional classroom instruction, addressing a broader range of learning needs (Teng, 2022). In the Thai context, where teacher-student interaction is highly valued (Piayura et al., 2025), incorporating interactive elements into video-based learning can enhance its effectiveness.

Transfer strategy

The qualitative data revealed significant evidence of knowledge transfer, with 65% of interviewees demonstrating application of affixation skills beyond instructional contexts. Students exhibited emergent morphological awareness in authentic scenarios, deciphering e-commerce terms like *nonrefundable* on Shopee or recognizing *misconduct* in news headlines, indicating development of real-world lexical problem-solving strategies. This aligns with Nation's (2013) depth of vocabulary knowledge framework, where morphological analysis facilitates independent word inference. Notably, peer-to-peer knowledge transfer occurred through TikTok duets explaining prefix applications, exemplifying Juwita and Syahputra's (2024) observed social learning dynamics. However, only 28% successfully generated novel derivatives (e.g., *rewilding*), revealing a critical threshold in productive morphological generalization. This performance asymmetry between receptive recognition and productive creation reflects Teng and Xu's (2025) findings on the cognitive gap in derivative formation, suggesting learners require additional scaffolding for generative word-formation tasks. Future implementations could bridge this gap through structured creative challenges within TikTok's duet feature while maintaining the platform's organic engagement mechanics.

DISCUSSION

This study demonstrates TikTok's efficacy as a supplementary tool for vocabulary acquisition within a flipped classroom model, simultaneously addressing cognitive, affective, and strategic dimensions of learning among Thai EFL learners. The intervention's success stems from its ability to leverage TikTok's unique affordances while mitigating inherent limitations through structured pedagogical design.

TikTok's multidimensional impact on vocabulary learning

Cognitive enhancement

TikTok's multimodal architecture, integrating text, audio, and dynamic visuals, operationalizes Mayer's (2024) Cognitive Theory of Multimedia Learning. This dual-coding approach optimized cognitive load during affixation instruction, facilitating efficient morphological pattern recognition. Quantitative results substantiate significant gains: post-test scores ($M = 22.75$, 56.88%) substantially exceeded pre-test performance ($M = 14.11$, 35.28%; $p < .001$, Cohen's $d = 1.42$), with marked improvements in decoding derivatives (e.g., *nonrefundable*). Crucially, structured recycling mechanisms countered Algahmeeti's (2022) fragmentation risks. Spaced repetition (e.g., un- revisited in Clip 9 and Week 3 collaborative games) and cumulative reviews (Clip 15) reinforced retention, aligning with Yeung et al.'s (2025) findings on long-term lexical

consolidation. The 5-minute clips (e.g., Clip 2: Prefixes *un-*, *re-*, *dis-*) “chunked” complex word-formation rules into digestible segments, enabling learners to process derivational patterns iteratively, a design directly addressing Babushkina et al.’s (2022) critique of decontextualized drills.

Affective engagement

Qualitative data reveal TikTok’s entertainment elements (music, rhythm, creative hooks) effectively lowered Krashen’s (1992) affective filter, reducing anxiety and fostering intrinsic motivation. Participants described lessons as “fun and less stressful than textbooks” (Table 6), prompting voluntary re-watching, a natural spacing effect bolstering retention (Bobkina et al., 2025). This resonated profoundly with Thai learners’ cultural preferences: Kanokpermpon (2025) notes 73% exhibit heightened neurological encoding during music-infused instruction, explaining the efficacy of mnemonic suffix songs (e.g., Clip 5’s “-able jingle”). The platform’s cultural congruence drove engagement, with 65% of interviewees transferring knowledge to authentic contexts (e.g., recognizing *misconduct* in news headlines). Students’ emphasis on “catchy rhythms” facilitating recall underscores how TikTok’s format transforms abstract morphological rules into emotionally resonant content, mitigating the anxiety prevalent in Thai teacher-centered settings (Hsu et al., 2024).

Strategic empowerment

TikTok fostered autonomous learning by harnessing platform-native features. Algorithmic personalization enabled incidental acquisition of affixed words (Mufliah et al., 2024), while the Duet function facilitated peer modeling, 41% collaborated on word-formation tasks (Juwita & Syahputra, 2024). However, strategic gaps persisted: only 28% generated novel derivatives (e.g., *rewilding*), underscoring Teng and Xu’s (2025) cognitive threshold in productive morphology. Teacher-curated playlists (Table 2) and in-class troubleshooting bridged this gap, transforming TikTok into a scaffolded pedagogical tool. As one participant noted, “@TeacherGam makes grammar grooves viral,” highlighting the balance between organic engagement and academic rigor. The Duet challenges (#PrefixChallenge) encouraged collaborative practice but required structured guidance to transition learners from receptive recognition to generative application, a critical progression for morphological autonomy (Nation, 2013).

Implementation challenges and solutions

While the study demonstrates TikTok’s considerable potential, it also identifies important implementation challenges. A recurring theme in student feedback was the lack of immediate interactivity: “I couldn’t ask questions immediately like in class.” This limitation of asynchronous digital learning has been noted by Ali (2024) and others, particularly regarding struggling learners who may need more scaffolding. In our implementation, the flipped classroom model helped mitigate this issue through subsequent in-class discussions and activities. Students reported that knowing they would have opportunities to clarify understanding in person made them more comfortable with the TikTok-based pre-class components. Other effective strategies included peer-created TikTok content and small-group video projects. These collaborative

elements addressed both interactivity limitations and the need for productive practice, as students could apply affix knowledge creatively while receiving feedback from peers and instructors. This suggests that an optimal balance might combine TikTok's strengths in input presentation with carefully designed interactive and productive components — a “blended” approach that leverages digital and face-to-face learning advantages.

Limitations and future directions

This study demonstrates TikTok's potential for affixation learning within flipped EFL classrooms, yet several limitations necessitate scholarly acknowledgment and inform future research trajectories. First, the absence of a non-TikTok control group (e.g., static PDF-based flipped instruction) precludes definitive attribution of vocabulary gains solely to the platform's features, as general flipped learning principles may contribute to outcomes. Institutional restrictions on curriculum differentiation prevented such comparative implementation. Future studies should adopt a three-arm experimental design comparing: (1) TikTok-enhanced flipped learning, (2) non-TikTok digital flipped approaches, and (3) traditional instruction to isolate platform-specific efficacy. Second, temporal constraints limit claims about knowledge retention. The lack of delayed post-testing (e.g., 8-week follow-up) obstructs analysis of long-term decay patterns. Subsequent work will implement longitudinal tracking using Webb and Nation's (2017) retention protocols, including algorithmic booster sessions replicating TikTok's format for spaced retrieval. Third, while morphological awareness theoretically facilitates reading proficiency (Levesque et al., 2021), no direct reading measures were administered. Validated instruments like TOEIC Reading Comprehension subtests will be integrated to quantify affixation's impact on text-processing efficiency and inferencing skills, a critical extension given vocabulary's instrumental role in L2 literacy (Teng & Cui, 2025). Finally, engagement metrics relied partially on self-reports due to privacy-compliant restrictions on individual TikTok analytics. Future implementations will employ LTI-integrated educational APIs to capture granular interactions (rewatch frequency, pause locations) while preserving anonymity.

THEORITICAL AND PRACTICAL IMPLICATIONS

The study's findings have several important theoretical implications. First, they provide empirical support for Bergmann and Sams' (2015) flipped learning model in EFL contexts, demonstrating how short-form video clips can effectively prepare students for in-class application activities. Second, they extend Mayer's (2024) multimedia learning principles to social media platforms, suggesting that these cognitive benefits can be achieved through informal-style presentations. Third, they contribute to our understanding of digital gaming in language learning (Gómez & Cedeño, 2025), showing how TikTok's entertainment features can be harnessed for educational purposes without compromising learning outcomes. For practitioners, the findings suggest several actionable strategies, namely curated TikTok playlists organized by linguistic objectives (e.g., noun-forming suffixes), brief, focused videos (3–5 minutes) targeting specific affixes or word families, follow-up activities that bridge asynchronous and synchronous learning, opportunities for student content creation to reinforce learning, and strategic use of music and rhythm to enhance morphological pattern recognition. To be more

specific, TikTok-based learning can be effectively integrated into flipped classroom models to enhance engagement and retention. Educators should combine video-based instruction with interactive components, such as discussion forums or live Q&A sessions, to address student inquiries in real-time. And the instructional design should incorporate elements of creativity, such as music and storytelling, to align with students' learning preferences and cultural contexts.

CONCLUSION

TikTok, when pedagogically harnessed through sequenced playlists, strategic recycling, and teacher scaffolding, transcends its entertainment role to emerge as a potent cognitive-affective tool for lexical development. This study demonstrates its efficacy in enhancing affixation knowledge among Thai EFL learners within a flipped framework, leveraging multimodal input to reduce cognitive load while culturally resonant music and rhythm lower affective barriers. However, its algorithmic unpredictability necessitates compensatory structures like curated content and supplementary guides. For Thai contexts, where edutainment aligns with cultural learning ethos, TikTok offers a viable pathway to transform vocabulary acquisition from rote memorization toward engaged, contextualized practice. Future implementations should target the receptive-productive gap through structured creative challenges, ensuring learners not only decode derivatives but actively generate them, thereby achieving full morphological mastery.

Declaration of AI usage

AI-assisted tools such as ChatGPT and DeepSeek were used to improve the clarity of the sentences and paragraphs in this article. These tools were used solely to make the article more transparent, coherent, and academic. We state that all ideas, interpretations, and conclusions remain the authors' own work and responsibility.

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APPENDIX A

Sample of test items

Section 1: Recognition *Matching*

Match the affix with its meaning.

- a) *-less*
- b) *-able*
- c) **un-**
- d) **re-**

- i) without
- ii) able to be
- iii) not
- iv) again

Example: The word “hopeless” means “without hope.”

Answer: a) – i)

Multiple Choice

Choose the correct prefix to complete the word so that it matches the given meaning.

Word: ____possible

Meaning: not possible

- a) *un-*
- b) *re-*
- c) *mis-*
- d) *pre-*

Answer: a) *un-*

Section 2: Retention

Short Answer

Define the word “misalign” using your knowledge of prefixes.

Answer: “*Misalign*” means to align incorrectly or improperly. The prefix “*mis-*” indicates wrong or incorrect.

Explanation

What does the suffix “-tion” indicate about a word’s part of speech? Provide an example.

Answer: The suffix “-tion” typically forms nouns (e.g., “*education*,” “*action*”).

Section 3: Application

Sentence Completion

Insert the correct derivative form of the word in parentheses.

"The contract was _____ (terminate) early due to unforeseen circumstances."

Answer: terminated

Error Correction

Identify and correct the affix error in the following sentence.

"Her *unresponsible* behavior caused many problems."

Correction: "irresponsible"

Section 4: Contextual Inference

Inference Task

Read the sentence and infer the meaning of the underlined word using your knowledge of affixes.

"The project was *nonrefundable*, so we could not get our money back."

Answer: "Nonrefundable" means not able to be refunded. The prefix "non-" means not, and "-able" means capable of.

APPENDIX B

Screen shots of TikTok

