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The Impact of E-books on Thai EFL Undergraduates' Acquisition of Affixes and their Contentment with This Medium

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Abstract The learning of affixes (prefixes and suffixes) by English as a Foreign Language (EFL) undergraduates is paramount since it enhances their vocabulary and helps them achieve fluency and proficiency in the English language. This paper aims to evaluate students' command of affixes by using an electronic book (e-book) as a teaching method and examining students' level of satisfaction regarding the learning of affixes through the e-book. The study employed a mixed-methods research design and included a sample of 50 first-year English for Communication students from Rajamangala University of Technology, Srivijaya. The research instruments used in this study included the pre-test, post-test, and an e-book satisfaction questionnaire, respectively. An interview was also used as a data-gathering tool in this research work. The findings indicated that the post-test results (26.40) yielded a superior outcome compared to the pre-test results (17.80). Furthermore, the e-book had an overall satisfaction rating of 4.57. In conclusion, the study found that students can significantly enhance their understanding of affixes, specifically prefixes and suffixes, by using unique e-books. For English teachers who encourage the use of e-books, the study's findings will have important implications since they will be able to use e-books for various uses in their respective classes when teaching EFL students.

Keywords: E-book; Prefixes; Suffixes; Effectiveness; Students' satisfaction

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1. Introduction

One of the technologies anticipated to meet the demands of digital students is the e-book (Letchumanan, 2024). Students in various professions have discovered that E-books are useful resources for gaining new abilities and information (Merkle et al., 2022). In addition, students are now more independent, self-directed, and disciplined as a result of the learning culture being changed by e-books (Sari et al., 2022). The use of mobile E-books is motivated by several considerations. With only one finger click, e-books enable speedier access to multiple books at once, making them befitting.

Vocabulary is a crucial part of a language that people use in discussions to express meaning, ideas, desires, and various other kinds of information. Turner and Williams (2007) stated that vocabulary is an essential language component that humans use to convey meaning, thoughts, desires, and many types of information throughout conversations. Mastery of terminology is essential for effective communication. Acquiring a robust lexicon is crucial for achieving success in many communication situations (Nagy & Townsend, 2012). Furthermore, it is crucial to attain expertise in foreign languages. Lack of proficiency in unfamiliar vocabulary can hinder communication in foreign languages, leading to misunderstandings and breakdowns in communication, finally impeding effective communication (Kaur, 2011).

Words are commonly regarded as the fundamental components of language and are easily understood by non-experts in the field of linguistics (Radford, 2009). O'Grady and Archibald (2016) emphasize the significance of words in conveying meaning in language. The term 'word' is a commonly used element in the lexicon of every person (McCarthy, 1990; 2017). Therefore, it is crucial for English as a second language (ESL) students to acquire vocabulary to enhance their proficiency in the English language.

According to Saengpakdeejit (2014), comprehending affixes is essential for ESL students as it enables them to predict the significance of unknown words. Affixes are advantageous for English students to augment their lexical knowledge and comprehension of word morphology (Schmitt & Zimmerman, 2002). Moreover, they contribute to academic achievement by enhancing one's lexicon. Smith (2008) proposed that developing proficient readers requires a thorough understanding of affixes.

Tamura and Shirahata (2017) asserted that students typically have a limited ability to use the English language, mostly because they lack an extensive vocabulary. Fangyi et al. (2017) stated that improving vocabulary acquisition abilities is advantageous for language students since vocabulary is pivotal in promoting efficient English language acquisition.

Mousavi and Hasani (2014) argue that acquiring English vocabulary necessitates that the students independently deduce the meanings of words. This entails using various information sources to predict the meanings of unfamiliar words. Thailand recognizes the importance of using the English language as seen by its

educational administration (Baker Jarunthawatchai, 2017). English language instruction focuses on enhancing listening, speaking, reading, and writing skills, especially in the core educational curriculum. The ongoing problems in English language instruction have led to a lack of proficiency among students, preventing them from effectively using English, even at the university level, due to their below-average language skills.

Several studies (Kalee et al., 2018; Fotokian & Rahmatipasand, 2019; Sukying, 2018) have explored the use of affixes by Thai and foreign students. Researchers have shown interest in investigating and examining how e-books can enhance students' competency in using affixes, with the aim of helping them learn language more successfully (Catoto, 2024). Thai EFL undergraduates should learn affixes as they enhance their vocabulary and help them achieve fluency and proficiency in the English language (Aslan, 2024). However, pupils may be confused when attempting to identify the affixes present in a word. Consequently, the students' acquisition of vocabulary and their ability to analyse words are significantly hindered. Many first-year English For Communication students struggle with detecting and correctly using affixes in their course 'English Reading and Writing', leading to numerous errors (Nontasee & Sukying, 2020). This study specifically examines the use of e-books as an innovative tool to enhance students' understanding of affixes. The objectives of this paper are to assess students' mastery of affixes through the use of an e-book and investigate the students' level of satisfaction with the learning of affixes using an Electronic Book (E-Book) as a teaching method. The results of the study will have significant ramifications for English teachers, curriculum designers, and researchers who support the use of E-books.

2. Literature Review

2.1. Prior Research Evaluation

There are many benefits to using derivation as a teaching approach while teaching vocabulary. Kaewsawas and Suksawas (2020) assert that employing derivation as a pedagogical strategy for teaching vocabulary presents numerous advantages. Sukying (2020) believes that acquiring proficiency in derivation could aid students in augmenting their vocabulary. It fosters the development of neologisms by pupils based on a core term.

Thiendathong and Sukying (2021) discovered that employing a derivational approach can improve students' acquisition of vocabulary. They conducted a comparison analysis on the vocabulary attainment of students, employing the derivational approach and a conventional methodology (Thiendathong & Sukying, 2021). The study revealed that the average score of the pupils in the experimental class was 14.72. The mean increment of students in the control group was only 6.77. The statistics indicated that the students' mean scores computed using the derivation approach were much greater than the students' mean scores computed using the conventional procedure (Thiendathong & Sukying, 2021).

This research exhibited both parallels and distinctions when compared to the previous investigation. Thiendathong and Sukying's (2021) initiative was to investigate the application of derivational morphology in order to improve students' vocabulary. The primary differentiation between this study and the preceding one is that the previous study employed a derivational methodology. This study included derivational activities as a means of instructing vocabulary.

Although the indicated parallels and differences have been discussed, one concern that has not been examined is the integration of derivational tasks in vocabulary education. The study uncovered both the improvement of students' lexicon and the difficulties they face in acquiring vocabulary through derivational exercises. The researchers conducted this investigation to offer substantiation and insights into derivational morphology.

2.1.1. Prefixes

Morphologists often use specialized language to group different affixes according to where they are in a word. Morphologists like Haspelmath (2021) and Noyer (1992) express that they frequently employ specific terminology to categorize various affixes based on their positional placement within a word. Prefixes, as defined by Haspelmath and Sims (2013), are affixes that come before the main component of a word. Rowe and Levin (2022) and Miller and Brown (2013) define affixes that come before a root as 'prefixes'. The prefix "un-" in the word "unkind" denotes the act of negating whereas "kind" functions as the root. Therefore, 'disagreeable' might be defined as lacking kindness, 'needless' can be described as not necessary, and so on. English prefixes are derivational affixes that often do not alter the grammatical category of a word but rather adjust its lexical significance. For instance, the term "appear" functions as a verb, whereas its counterpart "disappear," which denotes the reverse of "appear," also functions as a verb. Therefore, prefixes such as dis- are referred to as class-maintaining derivational prefixes. English also has derivational prefixes that can change the grammatical category of a word. For instance, the word "forest" is a noun that precisely refers to "a vast expanse of land adorned with trees and various vegetation" in the realm of grammar. By adding the prefix 're-' to the word 'forest', the word 'reforest' is formed. This word functions as a verb that specifically refers to the action of planting trees on a particular area of land. The prefix "re-" is a derivational affix that modifies the grammatical category of the word. Some prefixes can serve as both "class-changing" and "class-maintaining" derivational prefixes. For example, the term "write" serves as a verb, yet "rewrite" (which means "to write again") also operates as a verb. The prefix "re-" alters the significance of the word while preserving its grammatical classification.

The prefix "re-" can also function as a derivational prefix that preserves the grammatical category of a word. The English language encompasses about 50 distinct prefixes. Table 1 presents commonly used prefixes, along with their respective definitions and illustrative instances.

Table 1: Examples of common prefixes

Prefix	Meaning	Examples	Prefix	Meaning	Examples
bi-	two	<i>bicycle, bipolar</i>	ir-	not	<i>irregular, irradiate</i>
de-	opposite	<i>degrade, degenerate</i>	mis-	incorrect	<i>misunderstand, misalign</i>
dis-	opposite	<i>disagree, disable</i>	pre-	before	<i>prefix, precancerous</i>
im-	not	<i>impossible, impolite</i>	re-	again	<i>reactivate, readjust</i>
in-	lacking	<i>inability, inaccuracy</i>	un-	not	<i>unable, unhappy,</i>

Suffixes are morphological elements that are attached to the end of a word, following the primary component of the word (Haspelmath & Sims, 2013). A suffix, as described by Aarts et al. (2014), is a linguistic element that is added to the end of a word or base to construct a new word or modify the grammatical form of an existing word. The phrase "teachers" is derived from the root word "teach" and is formed by adding two suffixes: -er, which means "one who...", and -s, which indicates plurality or more than one. The words "reader" and "readable" both contain the core word "read," with the suffixes "-er" and "-able" expressing the meaning "capable of being." Derivational suffixes that preserve class are affixes appended to an already established lexeme. A new lexeme is formed, yet the grammatical category of both lexemes remains the same. The term "economic" is used as an adjective. By adding the suffix -al to the word "economic," it becomes "economical," which also serves as an adjective. Both "economic" and "economical" are separate lexical items that belong to the same word category. The suffix -al is a derivational suffix that maintains the grammatical category of the original word. Derivational suffixes modify the grammatical category of a word by being appended to an existing term. A neologism is created by adding unique grammatical categories to individual words. For instance, the phrase "teach" operates as a verb. The verb "teach" can be transformed into the noun "teacher" by adding the suffix -er. The terms "teach" and "teacher" are distinct lexical elements that pertain to different word classes. The suffix -er is a derivational suffix that changes the grammatical category of a word.

2.1.2. Instruction on Lexicon

When instructing reading, a teacher must possess the ability to facilitate students' comprehension of the textual content. In this scenario, the teacher must

possess the ability to facilitate students' acquisition of knowledge effortlessly. The process of teaching reading encompasses the instruction of word recognition, intellect, and emotion, which are interconnected with past knowledge to comprehend the conveyed message (Goodman, 1976; Smith, 1982). Teaching is a sequential procedure; when teaching is highly effective, both pupils and teachers acquire knowledge. If there is minimal or non-existent knowledge acquisition, the instruction proves ineffective. Team-teaching is not a panacea for all the challenges that teachers and management face.

Teaching vocabulary is crucial as it forms the basis for language acquisition (Nagy & Townsend, 2012; Schmitt & Schmitt, 2020). Nagy and Townsend (2012) and Schmitt and Schmitt (2020) contend that vocabulary should be the focal point of language instruction. Vocabulary has a significant role in the teaching and learning process. The teacher assists students in comprehending words, including their form, meaning, and usage (Harraqi, 20179; Karliova, 2009; Liu, 2011; Sukying, 2020). On the other hand, Sukying (2020) emphasizes the importance of teaching vocabulary in the language classroom, stating that the discussed topics, beliefs, and practices will become more valuable and relevant. Enhanced vocabulary knowledge facilitates the acquisition of other facets of the English language for students.

Teachers might play various roles in the classroom, but they are ultimately accountable for the way they teach (Richards, 2010). Teaching vocabulary involves introducing a new word (Otabekova, 2024; Teng & Zhang, 2024). Richards (1994) states that teachers bear the main responsibility for their teaching methods and can take on various roles in their classrooms. Teachers should ensure that the classroom environment is both pleasant and engaging when presenting the topic. Nation (2013) and Sukying (2017, 2020, 2023) found that acquiring vocabulary can be challenging. A process is required. In order to create an efficient process, particularly in the classroom, the learner must be in an optimal state for learning mastery of language. Thornbury (2002) argues that the condition should assist students in obtaining a substantial number of words to comprehend and communicate in language. The researcher used derivation as the method for teaching vocabulary in this example. Through derivation, students can practice generating new words they have learnt and expand a single term into multiple variations.

2.1.3. Using Innovative E-book in Learning Language

Innovative e-book methods are currently used across several sectors (Huang & Hsieh, 2012; Zhang & Fan, 2024). In the field of education, Budhwar (2017) agrees that e-books are crucial in language classrooms as they serve as the most efficient instructional tool. Reid (2016) mentions that using this adaptable device in teaching and learning English is now necessary and indispensable due to the advantages it offers to both students and teachers. Computers aid ESL students in learning various aspects of the English language, including grammar, skills, and literature. The concerned authority has built a student-friendly computational tool called 'Affix Learner E-Book' to help students at the

Rajamangala University of Technology Srivijaya improve their understanding of affixes, particularly prefixes and suffixes.

Beimers (2014) expressed that the impact of e-books on the education system is clearly apparent as they offer a convenient and easily accessible medium for learning. The history of e-books is very brief compared to traditional printed books, originating in the early 1970s through the endeavors of Michael Hart and Project Gutenberg. E-books are digital books that can be viewed on many platforms like computers, tablets, and mobile phones. Text can be viewed by users through software programs like Acrobat Reader.

Chou (2012, 2016) and Martin-Beltrán et al. (2017) researched the two primary formats of e-books: page fidelity e-books and reflowable digital e-books. Page fidelity e-books faithfully reproduce the exact layout and design of the print version of a book whereas reflowable e-books provide a versatile format that enables users to customize the arrangement and interactive elements of the information. E-books have become essential components of the academic and educational process, particularly for university students. They offer a diverse selection of educational materials and the ability to learn flexibly.

Biranvand and Khasseh (2014) state that numerous research works have highlighted the positive impact of e-books on education. Reid's (2016) research indicates that e-books are more effective than paper books in improving reading comprehension skills. Yoon (2013) discovered that e-books enhance reading comprehension and vocabulary skills and increase students' passion and interest in studying. Biranvand and Khasseh (2014) in their study found that e-books have a substantial and effective impact on students' academic progress, enhancing their educational experience.

However, Godwin-Jones (2011, 2017) argues that printed books are still preferred over e-books due to their convenience. According to Miller and Schrier (2015), students prefer printed books due to their greater convenience. Kozminsky and Asher-Sadon (2013) emphasize that students who use physical books exhibited superior performance in comprehending storylines, knowledge, and vocabulary compared to those who used e-books.

Ultimately, although there are varying viewpoints regarding the efficacy of e-books compared to printed books, the prevailing evidence suggests that e-books have a beneficial impact on education. They optimize learning results, promote reading comprehension abilities, and offer adaptability in the learning process. Gaining insight into students' viewpoints regarding the impact of e-books on enhancing vocabulary is crucial as it can contribute to enhancing language acquisition and instructional methodologies (Ntagwabira et al., 2024; Tinh et al., 2024). Additional investigation in this field can yield significant knowledge regarding the advantages of e-books in the realm of education.

2.1.4. Primary Challenges of Using Affixation

Despite achieving proficiency in English, certain students still struggle with using the appropriate affixation, resulting in their incorrect use and causing misunderstandings. Students often encounter challenges or obstacles when using affixation (Ikrimah & Asi, 2024; Toluspaveva et al., 2024). Lieber and Stekauer (2014) posit that the laws governing affixation can be perplexing for people who are learning them. Some pupils may struggle to distinguish the affixation present in a word or fail to understand the purpose of the affixation in a word. In addition, many affixes, particularly prefixes, might have several meanings or be employed in distinct ways. For instance, the prefix "-in" can be understood as meaning "not" or "into," whereas the prefixes "-in," "-un," "-dis," "-ir," and "-im" can all be understood as meaning "not."

Furthermore, another significant concern pertaining to the challenges of applying proper affixation is that pupils struggle to determine if a morpheme is a free or bound morpheme (Guna et al., 2024). Furthermore, there is insufficient evidence to definitively establish whether a word functions as a root word or an affixation. For instance, in the case of "education-less," both "education" and "less" can be considered root words. In this scenario, students may be confused while attempting to identify affixations as affixes may bear resemblance to the root words that are commonly used (Plag, 2018).

Moreover, the primary issue that students face when it comes to employing the correct affixation is their phonological dyslexia. According to Caplan (1998), individuals with phonological dyslexia typically struggle to identify the affixation that is added to the beginning or end of a root word. In addition, there exists another form of dyslexia known as alexia, which is the result of brain injury that leads to the loss of an individual's reading ability. Students with phonological alexia often struggle with reading affixation because they have difficulty recognizing certain written words. Nevertheless, the occurrence of affixation affects words that are attached to it, while those that are not attached to affixation are not affected by it. For instance, in the word "corner," the letters "-er" that are attached at the end of the word are not considered affixes. Instead, they are an integral component of the word and cannot be detached. In this scenario, it is inferred that individuals with alexia possess the ability to discern words that are connected by affixes and identify words that include the same letters as the affixes.

Ultimately, students may encounter various challenges when it comes to comprehending and employing affixation (Toluspaveva et al., 2024). This is primarily due to the numerous rules associated with affixation which can be confusing for students. In addition, determining whether a word is a free or bound morpheme can be a complex task. Students with phonological dyslexia or alexia may also struggle to recognize and use affixation.

The current study is intriguing as it demonstrates the convenience of learning affixes using e-books. Students are not limited to studying alone in the classroom; they can also acquire knowledge through this online platform.

Individuals have the ability to acquire knowledge in any location and at any moment. This platform is accessible both offline and online, allowing students to effectively use its resources.

Based on the literature review, the following research questions were formulated for the current study.

1. How effectively do students master affixes by using an e-book as a learning tool?
2. What are students' levels of satisfaction with using an e-book as a method for learning affixes?

3. Research Methodology

3.1. Study's Research Design & Participants

This study employed a mixed-methods research design to investigate the research questions. In order to find the different levels of students' mastery of affixes through the use of an e-book, the researchers administered an experimental research design in the quantitative part of the study. In addition, to identify students' level of satisfaction with the acquisition of affixes using an e-book as a teaching method, the researchers employed a survey research design, followed by interviewing the students as the qualitative part.

The survey included a total of 50 first-year students majoring in English from Rajamagala University of Technology, Srivijaya. A collection of 100 intricate words, each with different quantities of morphemes, was compiled from pertinent books and materials for the English Reading and Writing course. The data was collected by using a pretest, posttest, and satisfaction survey on e-books. The pretest and posttest consisted of printed information that was given to participants to evaluate their comprehension of affixes, including their types and functions. Forty advanced words were employed for this objective, constituting 40% of the overall 100 words. The pretest was evaluated using a 40-point scale. The test answers were observed and documented to analyze the results and findings. Moreover, an interview was employed in this study. The interview continued until the saturation point of the theme from the participants reached.

The statistical measures employed in this study include the Mean, Standard Deviation (SD), and *T*-test. A cohort of 50 participants was given pre- and post-tests by the researchers to gauge their comprehension of prefix and suffix vocabulary before and following the use of an e-book. The questionnaire of the study is given in **Appendix A**. The two groups, one control group and the other an experimental group were assigned by random sampling from the total number of students who took the English course at the mentioned university.

3.2. Research Instruments

3.2.1. Validity and reliability of the instruments

The data collection process involved the use of three distinct research instruments.

1. Electronic book (e-Book)

An electronic book, also referred to as an e-book, is a digitized rendition of a book that can be accessed and read on electronic devices. The researchers generated and manufactured the e-book by using pertinent literature and investigations on affixes. Prior to data collection, the e-book underwent validation by employing the Index of Object Content (IOC) to determine whether the content of the e-book was aligned with the study's objectives. Three seasoned researchers conducted an evaluation which revealed an average score of 1.0 for the IOC. This indicated that the e-book was suitable for data-gathering purposes.

3.2.2. The questionnaire: Pre-test and a post-test

The researchers adapted a pre-test and a post-test, drawing from previous research. These tests were developed to align with the concept of affixes. The tests were administered using Google Forms and consisted of 40 multiple-choice questions for a total of 40 marks. After completing the tests, the researchers presented them to their advisor and experienced researchers for verification of the content's accuracy and compatibility with the research objectives using the Index of Content (IOC). The results showed that the average IOC score was 0.86, which indicated that both the pre-test and post-test were appropriate for collecting data.

3.2.3. A survey measuring levels of contentment

A satisfaction survey was developed to evaluate the degree of satisfaction with using e-book. Three competent researchers evaluated the content accuracy and adherence to the research objectives of the satisfaction questionnaire using the Index of Content (IOC). The questionnaire exhibited a consistency value of 1.0, signifying its appropriateness for gathering data (please refer to **Appendix A**).

3.2.4. Interview

To determine the students' viewpoint about using an e-book for acquiring knowledge about affixes, this study administered two open-ended questions to inquire about the participants' use of e-books to augment their proficiency in acquiring affixes.

In summary, the researchers assembled a sample cohort for the study. A total of 50 first-year undergraduate students majoring in English for Communication at the Department of Foreign Languages in the Faculty of Liberal Arts at a university in Songkhla, Thailand, were selected to participate in this study through voluntary sampling. Afterwards, the researchers presented the e-book, pre-test, post-test, satisfaction questionnaire, and interview to experienced researchers for verification of content accuracy and alignment with the research objectives. Subsequently, the researchers implemented essential modifications following the accepted recommendations. After finalising all instruments, they were used in the research to collect data.

3.2.5. The research ethics

The Ethical Committee of the Faculty of Public Health and Allied Health Science, Sirindhorn College of Public Health, Yala, Thailand approved this study on 23rd May 2024.

3.3. Data collection procedure

To collect data, the researchers scheduled a meeting with the sample group. After receiving a description of the research goals and instructions on how to use the e-book, the participants were directed to complete a pre-test within a specific time limit of 40 minutes before using the e-book. The researchers provided the participants with the web address of the e-book. After three weeks, the participants completed a 40-minute post-test. Furthermore, the researchers requested that the participants complete a satisfaction questionnaire to assess their level of contentment in using the e-book through Google Forms and conducted an interview with eight students to acquire their perspectives on using e-books to enhance their accomplishment in affixes. The data collected from the pre-test, post-test, and satisfaction questionnaire were then analysed. The IOC was employed to assess the alignment between the content of the e-book and the objectives of the study. Three skilled researchers did an assessment and concluded that the mean score of the IOC was 1.0. This suggests that the e-book was appropriate for collecting data.

3.3.1. The statistics of the study

1. The statistics used to compare the learning results of the pre-tests and post-tests of the students from learning using an e-book on the topic of The Development of Prefix and Suffix Achievement for undergraduate students were frequency, mean (\bar{X}), standard deviation (S.D.) and test statistic (T -test).

2. The statistics used to determine students' satisfaction in using the e-book on the effectiveness of learning affixes were mean (\bar{X}), standard deviation (S.D.), and criteria for interpreting measured values of Likert Rating Scales with criteria for interpreting measured values as follows:

An average score of 4.50 – 5.00 means the most satisfied

An average score of 3.50 – 4.49 means very satisfied

An Average score of 2.50 – 3.49 means moderately satisfied

An average score of 1.50 – 2.49 means low satisfied

An average score of 1.00 – 1.49 means the least satisfied

4. Study Findings

4.1. Analysis of Data

Research question 1 was: "How effectively do students master affixes through the use of an E-Book as a learning tool?" The data analysis results aimed to investigate the effectiveness of e-books in improving prefixes and suffixes. To enhance students' mastery of prefixes and suffixes vocabulary, the researchers used an e-book. The researchers administered a pre-test and post-test to a cohort of 50 participants to assess their understanding of prefix and suffix vocabulary before and after using an e-book respectively. Both examinations included an identical set of questions, resulting in a cumulative score of 40. The analytical findings are displayed in Table 2.

Table 2 displays the performance of the attendance group in completing the test before and after the experiment. It compares the average scores (\bar{X}), standard deviations (S.D.), and t -test values of the attendance group.

Table 2: Performance of the attendance group in completing the test before and after the experiment

Examination	N	Full score	\bar{X}	S.D.	\bar{d}	t	Sig. (2-tailed)
Pre-test	50	40	17.80	6.234	8.60	9.486*	.000
Post-test	50	40	26.40	5.932			

Table 2 clearly demonstrated that the individuals who took the test fared better in the post-test than the pre-test [Mean=26.40, SD= 5.932 (post-test), Mean=17.80, SD= 6.234 (pre-test), $t =9.486$, $p < .000$]. The acquired data has successfully addressed the first study question.

4.1.1. Content about affixes in the e-book

Research question 2 was: "What are students' levels of satisfaction with using an e-book as a method for learning affixes?" The answer to research question two incorporated analysing students' feedback regarding exercise modules following the implementation of the e-book.

Table 3: The level of satisfaction with content exercises about affixes using the e-book

Items	Mean \bar{X}	(SD)	Level
1. The content exhibits lucidity, exactitude, and reliability.	4.47	0.55	Very satisfied
2. The content is current and engaging.	4.74	0.45	The most satisfied
3. The quantity of content is suitable.	4.64	0.89	The most satisfied
4. The information is presented sequentially, facilitating comprehension.	4.42	0.75	Very satisfied
5. The exercises are in accordance with the material.	4.57	0.46	The most satisfied
6. The explanations are explicit, and the recommendations are diverse.	4.32	0.55	Very satisfied
7. Data categorization facilitates efficient searching.	4.54	0.46	The most satisfied
Mean \bar{X}	4.52	0.46	The most satisfied

The analysis revealed that the students exhibited a significant degree of satisfaction with the content of the e-book. The average score was 4.52. Furthermore, the satisfaction ratings were 4.74, 4.64, 4.57, 4.54, 4.47, and 4.42. The highest rank indicates that the content in the e-book is current and captivating. Memes were incorporated into the content of the e-Book to enhance

its appeal and facilitate the memorization of vocabulary related to prefixes and suffixes.

4.1.2. The pattern and design of the e-book

Table 4: Mean (\bar{X}) and Standard Deviation (S.D.) of student feedback on exercise modules following the use of the e-book in the design aspect

Items	Mean \bar{X}	(SD)	Result
1. The e-book's formatting facilitates readability and usability.	4.46	0.45	Very satisfied
2. The e-book design format is appropriately colorful.	4.67	0.57	The most satisfied
3. The background color and text color are suitable for reading.	4.43	0.47	Very satisfied
4. The font size and style are conducive to legibility and aesthetically pleasing.	4.55	0.46	The most satisfied
5. The e-book has aesthetic appeal and is contemporary.	4.65	0.73	The most satisfied
Mean \bar{X}	4.55	0.64	The most satisfied

According to the data in Table 4, the students' average opinion on the design got a mean score of 4.55. The maximum rank was 4.67. Participants expressed that the design of the e-book pattern and format was suitable. The researchers' employment of certain techniques effectively captivated students and encouraged them to engage in the learning process. Memes are visual representations that convey the intended message of the accompanying text. Memes can inspire and motivate children to acquire a greater range of vocabulary.

4.1.3. Language used

Table 5: Mean (\bar{X}) and Standard Deviation (S.D.) of student feedback on exercise modules following the use of and e-book in the language used aspect

Items	Mean \bar{X}	(SD)	Result
1. The language is suitable for the age or level of the students.	4.65	0.71	The most satisfied
2. The language used is engaging and stimulates learning.	4.34	0.45	Very satisfied
3. The vocabulary used is concise and easy to understand.	4.54	0.43	The most satisfied
Mean \bar{X}	4.51	0.45	The most satisfied

From Table 5, it was found that the mean score of students' overall average opinion on the language used was 4.51. The highest rank was 'the language used is suitable for the age and knowledge level of the students.' It ranked 4.65 which was considered the most satisfied.

4.1.4. Knowledge perceiving

Table 6: Mean (\bar{X}) and Standard Deviation (S.D.) of student feedback on exercise modules following the use of an e-book in term of knowledge perceiving

Items	Mean \bar{X}	(SD)	Result
1. The content provides significant utility for its users.	4.66	0.45	The most satisfied
2. The e-book serves as a valuable source of knowledge.	4.68	0.65	The most satisfied
3. The e-book can be applied in daily life and used for further learning endeavors.	4.73	0.67	The most satisfied
4. The e-book serves as a convenient learning medium, easily accessible to users.	4.64	0.54	The most satisfied
Mean \bar{X}	4.67	0.45	The most satisfied

According to the findings in Table 6, it was discovered that the e-book could be effectively used in everyday life and for additional educational purposes. Its ranking was 4.73, which is somewhat higher than the mean score of 4.67. The implication is that e-books are highly convenient for learning and can greatly benefit students by expanding their vocabulary.

Table 7 presents a concise overview of four aspects related to using e-books.

Table 7: Concise overview of four aspects related to using e-books

Items	Mean \bar{X}	(SD)	Result
1. Content	4.52	0.46	The most satisfied
2. Design	4.55	0.64	The most satisfied
3. Language used	4.55	0.45	The most satisfied
4. Knowledge perceiving	4.67	0.45	The most satisfied

Table 7 displays the comprehensive satisfaction rating of e-books as reported by the first-year students. The average satisfaction level for content, design, language usage, and knowledge perception was at its highest. In order to validate the findings of the quantitative study, an interview as the qualitative part was administered with the students. Based on the interview, most students expressed high satisfaction and enthusiasm about learning affixes through e-books. Studying was not only handy, but it was also practical and beneficial for them to develop their vocabulary. Furthermore, the substance within the e-book was both captivating and contemporary. The term "meme" is applied to characterize the lexicons used in electronic books. Memes can imbue words with significance. The next section shares the opinions expressed by the students.

4.2. Qualitative Findings

Excerpt 1

"The E-book is really engaging and valuable. It can enhance my understanding of prefixes and suffixes. Moreover, deducing the definition of the term becomes effortless when we possess knowledge of both the prefix and suffix."

Excerpt 2

"I am highly intrigued by E-books for studying affixes due to their contemporary and current nature. The researchers utilized Meme as a representation of the semantic content of the term. This helps me comprehend the meaning of the words more simply. Furthermore, I can acquire knowledge of affixes at any location and at any time due to the accessibility of online resources."

Excerpt 3

"This E-book is highly beneficial and applicable." I may utilize the knowledge obtained from this source in various subjects, including reading and writing, essay composition, and public speaking. I consistently utilize this E-book due to its exceptional convenience. If I am unable to recall the definitions of certain words, I can utilize this electronic book to conduct a search."

From the qualitative findings, it was observed that the students found that using the e-book was beneficial and enhanced their understanding of prefixes and suffixes. Because e-books are so modern, they found learning affixes with e-books to be quite intriguing. Memes were used by the researchers to indicate the words' semantic content. This made it easier for them to understand what the words signified. In addition, they could use the information they learned from this site on various topics, such as public speaking, writing and reading essays, and essay structuring. They could also use this electronic book to search for definitions if they could not remember what some words meant. The qualitative findings of the present study supported those derived from the quantitative part. The students developed the capacity to employ affixes correctly and pick up a larger vocabulary. They could also use information from the e-book to deduce the meaning of words. Consequently, e-books can play a significant role in making the study of affixes easier.

5. Discussion

Research Question 1: How effectively do students master affixes using an e-book as a learning tool?

The first study question focused on assessing the students' proficiency in affixes by using an e-book. The results revealed that participants made significant improvements in their affixes from the pre-test to the post-test. However, the experimental group, which used electronic textbooks on their smartphone devices, demonstrated superior performance compared to the control group. They acquired several vocabulary words and possessed the ability to accurately use affixes. They could also infer the meaning of words by using information from an e-book. Therefore, it is evident that electronic textbooks were highly helpful in facilitating the learning of affixes. Moreover, a notable overall impact of time was observed in the context of using electronic textbooks for the acquisition of affix knowledge. Nevertheless, the results of the present investigation contradict several previous studies (see Chou, 2012, 2016; Martín-Beltrán et al., 2017). Given the effectiveness of e-books in enhancing vocabulary knowledge, particularly in the area of affixes, it appears that delivering learning information through well-designed e-books is a feasible method for language acquisition. Considering the increasing prevalence of electronic devices among language students (Godwin-Jones, 2011, 2017), language teachers and materials designers should use these devices more frequently. This will offer students more chances to enhance their language skills overall with a particular focus on vocabulary acquisition.

The results also showed that there were improvements in mastering affixes from the pre-test to the post-test. However, the trajectory of this improvement varied between the two tests. The results of the current study showed a notable increase in scores. Nevertheless, there was an increase of 8.6 points in the achieved scores. This result of the current study aligns with the results of other previous studies, namely Cabe and Isla (2024) and Uy and Guillermo (2024). There could be other factors contributing to these observations. The students' learning behavior reflects the affixes gains achieved by the participants. Therefore, the pre-test score was not greater than the post-test scores due to the engaging and beneficial nature of the content. Furthermore, it is important to consider the "inherent motivational effects" of new technologies for language acquisition when interpreting these findings (Stockwell, 2013). This viewpoint argues that the implementation of novel technologies for language acquisition leads to increased motivation; consequently, the motivation facilitates improved performance among students. The use of an e-book for the acquisition of affixes in this particular group of participants resulted in a more captivating setting, which in turn facilitated their general enhancement of vocabulary.

Research Question 2: What is the students' level of satisfaction with using an E-Book as a method for learning affixes?

Throughout the course of autonomous learning, the students displayed a commendable level of attentive and engaged behavior on this platform. During

the interview, most students expressed a strong interest in learning about affixes. They recognized the significance of affixes in enhancing their reading, speaking, and writing skills. In addition, they acknowledged that understanding affixes enables them to quickly infer the meanings of unfamiliar words. The results of the current study concur with the results of other research works, for example, Truss et al. (2024) and Vermeulen and Volman (2024). The reason is their knowledge of etymology. In addition, the e-book's material was easily comprehensible, and memes were used to enhance students' understanding of the terms. Furthermore, the students actively engaged in discussions with their peers if they had any difficulties in comprehending the material during the three weeks of self-study. They exhibited significant amounts of enthusiasm throughout the implementation process. Beimers (2014) suggests that interactive e-books can significantly enhance students' interest. Thus, data demonstrates that active participation and attentiveness in the classroom led to increased motivation for reading, resulting in higher reading comprehension. In conclusion, the satisfaction level with the acquisition of affixes by using an e-book as a teaching technique was high.

6. Conclusion

The current study that investigated the effectiveness of an e-book in improving the acquisition of affixes among Thai English as a Foreign Language (EFL) undergraduate students produced encouraging findings. The study included a cohort of 50 freshmen enrolled in the English for Communication program at Rajamangala University of Technology, Srivijaya. The results indicated a notable enhancement in students' understanding of affixes, particularly prefixes and suffixes, after using a cutting-edge e-book. To summarize, the study highlights the capacity of creative e-books to effectively enhance students' understanding of affixes, thereby improving their language ability. The findings support the use of e-books in language learning courses to offer students a more captivating and dynamic learning experience. Using e-books can help students master a greater number of words and increase their vocabulary. Furthermore, e-books are able to infer the meaning of words, enabling students to comprehend a more extensive range of terminology. Understanding affixes can assist individuals in acquiring a broader vocabulary. By reading the texts, individuals may infer the meaning of words without consulting a dictionary. The study demonstrated that e-books are extremely beneficial for students when it comes to studying affixes.

6.1. Pedagogical Implications

This paper could have some important pedagogical implications for English teachers, students, curriculum designers, material developers and researchers. Teachers will be able to teach students by providing them with all the vocabulary needed regarding a certain context. To do so, they will incorporate recently acquired vocabulary into upcoming sessions by using readings on relevant subjects or by conducting informal quizzes. In addition, the teachers will keep a continuous record of newly acquired vocabulary terms and share it periodically. The list should consist of both the officially presented vocabulary and the spontaneously created vocabulary that arises during the session. Moreover, the teachers will be prompted to promote and advocate the deliberate

use of memorization techniques, such as keywords or other strategies that foster profound cognitive processing. Also, they can promote the integration of top-down and bottom-up techniques in pupils by implementing semi-extensive vocabulary for reading. When designing the curriculum, curriculum developers should establish a collection of e-books of different proficiency levels (refer to Chen et al. 2013) Hill 1997a and 1997b for guidance on how to accomplish this. Even a small group of readers can be an invaluable resource. Researchers might benefit by conducting tests, using instruments that encompass collocations, grammatical meaning, appropriateness, and other relevant factors. The resultant knock-on effect will incentivise pupils to consider the context when studying vocabulary.

6.2. Limitations

One of the constraints of this study is the duration of the self-guided e-book learning, specifically focused on affixes. The researchers allocated three weeks for students to acquire proficiency in the understanding of affixes. The period is rather brief, and occasionally teachers did not complete their lectures. Furthermore, the limited number of participants occasionally rendered the results inaccurate. In addition, the teacher should regularly monitor students' progress in learning affixes through the use of e-books and provide them with feedback to enhance their understanding of affixes.

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Appendix A

Item	Satisfaction level				
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	The most satisfied
Content about prefixes and suffixes in E-Book					
1. The content exhibits lucidity, exactitude, and reliability.					
2. The content is current and engaging.					
3. The quantity of content is suitable.					
4. The information is presented in a sequential manner, facilitating comprehension.					
5. The exercises are in accordance with the material.					
6. The explanations are explicit, and the recommendations are diverse.					
7. Data categorization facilitates efficient searching.					
The pattern and design of E-Book					
1. The e-book's formatting facilitates readability and usability.					
2. The E-book design format is appropriately colourful.					
3. The background colour and text colour are suitable for reading.					
4. The font size and style are conducive to legibility and aesthetically pleasing.					
5. The aesthetic appeal and contemporary nature of the e-book.					
Language Used					
1. The language is suitable for the age or level of the students.					
2. The language used is engaging and stimulates learning.					
3. The vocabulary used is					

concise and easy to understand.					
Knowledge perceiving					
1. The content provides significant utility for its users.					
2. The E-book serves as a valuable source of knowledge.					
3. The E-book can be applied in daily life and utilized for further learning endeavours.					
4. The e-book serves as a convenient learning medium, easily accessible to users.					