The Integration of Implicit and Explicit Vocabulary Instruction, Project-Based Learning, Multimedia, and Experiential Learning to Improve Thai EFL Senior High School Students' Vocabulary Ability

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Abstract
This study highlights the significance of the integration of implicit-explicit vocabulary instruction, project-based learning (PBL), multimedia, and experiential learning to improve Thai EFL senior high school students' vocabulary ability. It aimed to investigate to what extent the integration affected Thai EFL senior high school students' vocabulary ability and how their perceptions toward the instruction were. The study involved 45 tenth-grade students at a public high school in Bangkok, Thailand. A vocabulary pre- and post-test was used to evaluate the students' vocabulary ability before and after the application of the integrated instruction. Additionally, students' reflective journals (SRJ), a students' perception questionnaire, and a semi-structured focus group interview provided qualitative data for analyzing the students' perceptions toward the instruction. The findings revealed that all students' test scores significantly improved and confirmed the effectiveness of the integrated instruction on vocabulary learning. All of the 45 students also reported positive perceptions toward the instruction. They reflected that the instruction was advantageous and practical since it facilitated their vocabulary learning, increased their self-confidence and improved their speaking skills. It also created a pleasant learning atmosphere, provided the students with more opportunities to participate in classroom activities, and encouraged the students to learn with technology.
Keywords: experiential learning, implicit and explicit vocabulary instruction, multimedia, project-based learning, Thai EFL senior high school students

Introduction

Vocabulary is considered one of the essential aspects of language learning, especially in the field of English as a second or foreign language (ESL/EFL) since it helps with communication. Language users rely on vocabulary more than grammar when they communicate as Wilkins (1972) argues, "Without grammar, little can be conveyed; without vocabulary, nothing can be conveyed" (pp. 111-112). From only a few words in a sentence, the listener or reader can guess what the speaker or writer wants to talk about. Even an individual word can imply what the speaker or the writer wishes to express.

Despite being essential in language learning, vocabulary appears to be a major problem among ESL/EFL learners, including Thai students (Waemusa, 1993). Sawangwaroros (1984) reports that Thai EFL students are weak in vocabulary knowledge, and the lack of vocabulary development correlates with the inability in other language skills, which leads to inefficient and unsuccessful use of English for communication.

Regarding the importance of and the poor development in vocabulary knowledge, a study about ways to increase vocabulary knowledge of ESL/EFL learners is recommended to find more effective and practical teaching approaches that facilitate ESL/EFL learners to master or improve their vocabulary ability.

The Factors Contributing to the Low Achievements in the Vocabulary among Thai EFL Learners

Learning English as a foreign language, Thai EFL students encounter various difficulties in acquiring the language for communication. Navasumrit (1989) indicated that one of the many problems in learning English of Thai EFL students is their insufficient vocabulary knowledge. Considering factors that are contributable to the poor English vocabulary knowledge of Thai EFL students, the following section introduces factors that affect Thai EFL students' vocabulary knowledge.

Too Little Exposure to the Target Vocabulary

In Thailand's educational context, a social environment does not enhance Thai EFL students to use the English language in their daily communication. They have very limited opportunities to receive English language inputs in real-life. Classroom sessions seem to be the only occasion that they have a chance to apply learned vocabulary words to converse with one another. The limitation in using English in conversational contexts makes Thai EFL students have little exposure to the intensive and extensive language practice. Therefore, their command of English skills is very poor (Lewis, 2002). Moreover, vocabulary teaching in Thailand does not receive much attention or emphasis during class sessions. Thai EFL students usually receive passive vocabulary knowledge rather than productive skills, and productive use of vocabulary both in conversation and writing lacks regular practice.

Keeping the mentioned problem in mind, EFL teachers have tried different approaches to help the students develop their vocabulary ability. Language exposure is one of the stated approaches. Graves (2006) proposed a rich and beneficial vocabulary learning strategy, which includes an experiencing strategy. Through the language experience strategy, teachers provide

students with an opportunity to be familiar with new words through various language experiences, such as reading aloud, independent reading, and oral discussions (Graves, 2006). When learning more sophisticated or academic vocabulary words, students are required to spend a considerable amount of time reading books or other written materials or having books read to them. Some studies indicate that reading aloud can significantly increase learners' vocabulary (Lehr, Osborn & Hiebert, 2004); moreover, reading aloud combined with a discussion about the text is an effective way that helps to expand learners' vocabulary size. At the same time, it promotes independent reading experiences (Cunningham, 2010).

Insufficient Support from the Textbook in Terms of Vocabulary Learning and Teaching

Most of the available textbooks used in EFL classes take a communicative approach that encourages students to learn vocabulary items through a top-down fashion and does not favor explicit vocabulary instruction. Moreover, the tasks or the activities provided in the textbooks do not support students to learn vocabulary effectively (Lee & VanPatten, 1995; Nunan, 1999; Shrum & Glisan, 2000). Most textbooks found in Thailand seem to lack effective tasks, such as analyzing word structure, using context to determine word meaning, and using a dictionary effectively. It is similar to what is said in the Teacher Reading Academy (Texas Center for Reading and Language Arts, 2002) that the success of independent word-learning strategies should include the effective use of word parts, context clues, and a dictionary.

Teachers should find some additional activities or teaching techniques to fulfill what the textbooks lack to solve the previously mentioned problems. In these cases, the teachers can implement word-learning strategies, which are one of the four components of the vocabulary instruction of Graves (2006). Word-learning strategies include the identification and use of context clues, the appropriate use of word-part information, and the accurate us of dictionaries (Baumann, Edwards, Boland, Olejnik, & Kame'enui, 2003; Graves, 2006; Lehr, et al., 2004; National Institute of Child Health and Human Development (NICHD), 2000). Word-learning strategies are also the tools students can use to figure out the meaning of unfamiliar words and increase their word knowledge. Direct teaching of word-learning strategies can help students become better independent words-learners (Baumann, et al., 2003; Blachowicz & Fisher, 2000; Graves, 2006; NICHD, 2000).

Insufficient Assistance from the Teacher and Vocabulary Teaching Methods

Pookcharoen (2007) explained some causes of ineffective vocabulary instruction in Thailand. He mentioned that the problems had their root in the application of traditional teaching methods. These traditional methods usually emphasized vocabulary memorization by translating the target words into the learners' first language. The teachers typically introduced the target words to the students individually and without contexts. The decontextualization of vocabulary instruction, in turn, resulted in little word retention.

Many studies suggested that target words be presented in a contextualized manner, and the learners simultaneously infer the words' meanings from the contexts, owing to the abovementioned problems. This would enhance students' vocabulary retention (Nation, 1982; Nation & Coady, 1988). McCarthy (1990) also claimed that a contextually learned lexical item was best assimilated and remembered. Similarly, Oxford and Scarcella (1994) reported that

decontextualized vocabulary learning may help language learners memorize vocabulary for tests, but language learners were more likely to rapidly forget the memorized words.

Consequently, EFL teachers should assist students to learn vocabulary more effectively by employing the explicit teaching of individual words. The explicit teaching strategy is one of the four essential components of vocabulary teaching proposed by Graves (2006). Teaching vocabulary explicitly will facilitate students to master vocabulary more appropriately, in terms of forms and usages, than using traditional vocabulary teaching, which emphasizes memorization and translation. The four strategies of explicit word teaching are as follows (Beck, McKeown, & Kucan, 2002; Graves, 2006; NICHD, 2000; Pacific Resources for Education and Learning, 2008)

1. Provide a student-friendly definition.
2. Use the word in context and give contextual information.
3. Provide multiple exposures.
4. Provide opportunities for active involvement.

Lack of Interesting Vocabulary Teaching Leading to Lack of Interests to Learn Vocabulary

Jingjit (2015) also pointed out that inaction on interesting vocabulary teaching in Thailand, especially the lack of technology integration, decreased students, interest, and dampened their enthusiasm for learning. As a result, the recent educational policy encourages teachers to utilize the potentials of new technology in the classroom. The same phenomenon happens worldwide in this digital age. Literature shows that a well-integrated technology in education could help learners learn a foreign language, especially vocabulary. Dhanasobhon (2006) explained that Thai teachers are required to teach effectively in challenging environments by making effective use of information and communications technology (ICT) in their teaching to cater to a variety of learning styles. In Dubois' and Vial's (2000) study, it was evidenced that the use of multimedia technology could help evoke learners' memory in learning Russian vocabulary as a foreign language.

To solve the problems related to a lack of interest in learning vocabulary, teachers can use multimedia technology that helps get and hold students' interest (Jonassen, Carr & Yueh, 1998). Recently, several studies have investigated the effects of presenting information using multimedia components, such as visual text, spoken text, graphics, and videos, on the second language (L2) learning (Al-Seghayer, 2001; Sun & Dong, 2010). Kost, Foss, and Lenzini (2008) found that EFL learners performed better on both production and recognition vocabulary tests when they were allowed to use a combination of visual text and graphics. Information presented in text, spoken text, graphics, and video formats can be integrated to create an authentic, attractive, and multi-sensory language context for EFL learners (Sun & Dong, 2010).

Due to the abovementioned reasons, the integration of these four concepts, namely implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning focusing on students teaching one another will not only enhance their advantages but also minimize their drawbacks. Furthermore, the students will be able to improve their vocabulary ability as the result. Therefore, this study aims at improving students' vocabulary ability and

solving the problems contributing to the low achievements in the target vocabulary among Thai EFL students as mentioned above. Two research questions were as follows.

     1. To what extent does the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning improve Thai EFL senior high school students' vocabulary ability?

     2. What are students' perceptions towards the use of the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning on improving vocabulary ability?

Literature Review
Four Essential Components of Vocabulary Instruction
     The current study focused on both implicit and explicit modes of vocabulary teaching supplemented with vocabulary learning strategies. The framework used in this study is the four essential components of vocabulary instruction, as proposed by Graves (2006), along with strategies proposed by Hulstijn (1997), which were appropriate and applicable as the framework of the study. According to Graves (2006), the four essential components of vocabulary instruction are providing rich and varied language experiences, teaching individual words explicitly, teaching word-learning strategies, and fostering word consciousness.

Project-Based Learning
     Project-based learning (PBL) emphasizes learning activities that are long-term, interdisciplinary, and student-centered. It is a pedagogical method that pays more attention to learners. In a PBL classroom environment, learners raise questions and try to address the posed questions through research under the instructor's supervision and guidance (Bell, 2010). Regardless of a strict lesson plan, PBL investigates a topic that is worth learning more about (Harris & Katz, 2001). Learners are normally more autonomous over what they are learning, and PBL typically sustains learners' interests and motivates them to take more responsibilities for their learning (Tassinari, 1996). Unlike traditional and teacher-led classroom activities, with the application of PBL, EFL students often organize their work and manage their time spending on their choice of learning. Moreover, project-based instruction differs from traditional teaching strategies since it focuses on students' collaboration or individual artifact construction to represent their learning. Hence, PBL depends immensely on learning groups, student-centeredness, cooperation, and interaction (Moursund, 1999). Based on the concept of PBL, as presented in Donnelly and Fitzmaurice's study (2005), the current study followed the five stages of PBL, namely planning, researching, the first draft, rewriting, and submitting the project, to enhance Thai EFL students' vocabulary ability.

Peer Teaching
     Peer teaching refers to the delivery of instruction by peers or classmates in an interactive classroom environment (Bradford-Watts, 2011). It nourishes the learning by allowing more experienced students to provide a body of knowledge to the other less experienced ones, yet under the supervision or guidance of the instructor. In the ESL/EFL field, peer teaching typically generates positive learning experience, builds cooperation among students and between the teacher

and students, develops students' self-confidence in language mastery, and increases better language skill development (Bradford-Watts, 2011; Sunggingwati, 2018; Harutyunyan & Poveda, 2018). In the teaching of English vocabulary, peer teaching deems beneficial impacts. Mackiewicz, Wood, Cooke, and Mazzotti (2010) reported that peer teaching allowed learners to use new vocabulary socially in class, and the practice using new words in conversational contexts with peers and teachers, with whom the students felt acquainted, reinforced comprehension and increased learning relaxation.

Multimedia

Multimedia can be described as the combination of various digital media types, such as text, images, sound, and video, into an integrated multi-sensory interactive application or presentation to convey messages or information to the audience. Multimedia comprises different elements, and each element has its advantages. Velleman and Moore (1996) report that for any multimedia system to be successful these elements must be in balance. It means each component should be employed for what it does best and not letting one element dominate over the others. In the field of language learning and teaching, several studies also indicated that the use of technology had a positive impact on vocabulary teaching and learning (Agca & Özdemir, 2013; Suwantarathip & Orawiwatnakul, 2015; Solak & Cakir, 2015). It potentially increases students' mastery of English as a second or a foreign language (ESL/EFL). Consequently, multimedia is beneficial and advisable in language learning and teaching, especially in the era that a wide variety of multimedia sources are ubiquitous since it facilitates ESL/EFL students to acquire English language skills.

Kolb's Experiential Learning Cycle

Kolb (1984) claims that learning is the process of knowledge creation through the conversion of experience. He presents a cyclical model of learning that consists of four stages, which are concrete experience, reflective observation, abstract conceptualization, and active experimentation. The proposed learning cycle explains the process of experience translation via reflection into concepts that guide active experimentation and enhances the choice of new experiences. The first stage of the cycle is where the learner experiences an activity, such as fieldwork, and the second stage is when the learner reflects on that encountered experience. The third stage is where the learner attempts to conceptualize a theory or model of what he or she observes. Finally, the fourth stage is where the learner tries to plan for a forthcoming experience.

Regarding the abovementioned literature, the current study integrated the four theories to develop Thai EFL students' vocabulary ability. Figure 1 presents the theoretical framework of the study.
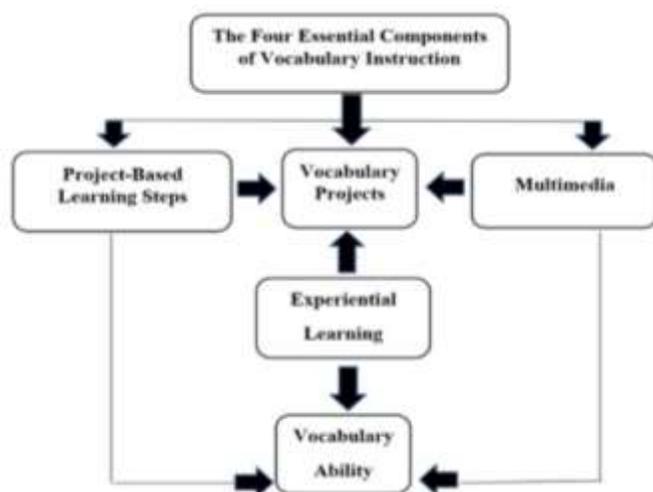
Figure1. The theoretical framework of the study

Methodology
Research Design
The present study adopted the mixed-methods embedded experimental research design (Creswell & Clark, 2007). Quantitative and qualitative methods were employed in this study to collect data for answering the two research questions. A one-group pre-test and post-test design were integrated to examine the impacts of the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning on improving Thai EFL senior high school students' vocabulary ability.

Research Participants
The participants, selected via a purposive sampling method, were 45 tenth-grade students who enrolled in a compulsory English course in the first semester of the 2019 Academic Year. Out of the 16 classes of the tenth-grade students, the chosen participants were consistently the lowest and were academically among the weakest students. Considered to be low English proficiency students, their GPA was from 2.00 to 2.50, while the other students' GPAs were ranging from higher than 2.50 to 4.00. Their Ordinary National Educational Test (ONET) scores in English were also low.

Instruments
Pre-Test and Post-Test for Vocabulary Ability
Before and after the learning through the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning, the participants took a pre-test and a post-test, respectively. The pre- and post-test aimed at assessing the participants' vocabulary ability. In this study, vocabulary ability refers to the ability to match the vocabulary with the correct definition, recognize and use context clues to determine the meanings of new words, and apply new words to write short sentences. Therefore, the pre- and post-test comprised three parts, and each part attempted to assess the students' vocabulary ability as previously mentioned. The contents of the test were as the following.

Part 1: Matching Word to Definition Test
Part 2: Multiple-Choice Sentence Test
Part 3: Short Sentence Writing Test

Students' Reflective Journal (SRJ)

In this study, the students' reflective journals (SRJs) were employed to elicit students' perception towards the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning. The participants were assigned to write a reflective journal for three times after each stage of learning. Prompts, in the form of questions, were provided to help the participants focus on aspects that were relevant to the current study. Students were allowed to write their reflections in Thai to minimize any language problems. When analyzing the data, the researcher translated Thai responses into English, and the translated responses were rechecked by the experts.

Students' Perception Questionnaire

The designed questionnaire aimed to elicit students' perceptions toward the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning to develop their vocabulary ability. The questionnaire was adapted from Phisutthangkoon's (2012), and it consisted of 17 question items formatted in a five-point Likert-type rating scale, ranging from 'strongly agree' to 'strongly disagree.' Moreover, the questionnaire was followed by three open-ended questions, which were written in both Thai and English.

Semi-structured Focus Group Interviews

Semi-structured focus group interviews were conducted with 15 participants to obtain their perceptions towards the instructions and to gain a deeper understanding of their perceptions in performing vocabulary ability assessment tasks. Participants were divided into three groups of five participants based on the levels of their vocabulary ability based on their mean score of pre-tests and post-tests vocabulary ability assessment. From all 45 students, mean scores, the highest mean score was 63, and the lowest score was 40. Therefore, the researcher divided the students into three groups of five according to their mean scores.

Table 1. *The criterion for dividing students for the interviews*

Students' Mean Scores	Students' Groups
40-46	Weak Students
47-54	Moderate Students
55-63	Strong Students

Data Collection Procedure

Table 2 presents the data collection procedures outlining what activities had been planned and what teaching methods would be used to help the students learn new target vocabulary words. The data collection plan covered the eight weeks of English teaching.

Table 2. *Data collection procedures*

Week No.	Class session	Activities
Week 1	First Meeting	- Introduction of the current research - Distribution of the consent form - Distribution of the English proficiency profile
	Second Meeting	- Pre-Test
Week 2	First Meeting	- Teacher Model 1 - The first demonstration and provision of class lecture, activity engagement, a project, and a PowerPoint presentation of the teacher
	Second Meeting	- Teacher Model 2 - The second demonstration and provision of class lecture, activity engagement, a project, and a PowerPoint presentation of the teacher
Week 3	First Meeting	PBL Step 1 Planning - Group work assignment: Planning a project to teach ten vocabulary words to peers using PowerPoint presentation
	Second Meeting	PBL Step 2 Researching - Assigning tasks to individual group member: Doing research for more information, reading related articles, visiting the library, using online search engines
Week 4	First Meeting	PBL Step 3 First draft - Getting all ideas down on a paper - Writing a vocabulary project
	Second Meeting	PBL Step 4 Rewriting - Rewriting and editing the project based on the corrections and suggestions received from the teacher PBL Step 5 Submitting Projects - Submitting of the edited project
Week 5	First Meeting	Peer teaching - Group 1 Presenting the project - Writing a student reflective journal
	Second Meeting	Peer teaching - Group 2 Presenting the project - Writing a student reflective journal
Week 6	First Meeting	Peer teaching - Group 3 Presenting the project - Writing a student reflective journal
	Second Meeting	Peer teaching - Group 4 Presenting the project - Writing a student reflective journal
Week 7	First Meeting	Peer teaching - Group 5 Presenting the project

Week No.	Class session	Activities
	Second Meeting	- Writing a student reflective journal Peer teaching - Group 6 Presenting the project - Writing a student reflective journal
Week 8	First Meeting	- Post-test - Distribution of students' perception questionnaire
	Second Meeting	- Conducting of semi-structured focus group interviews

The participants were also required to answer the designed questionnaire inquiring about their perceptions towards the intervention, followed by the semi-structured focus group interviews. There were three groups of five interviewees, divided according to their pre- and post-test mean scores. The interviews were recorded with the prior permission of the interviewees. Simultaneously, the researcher also took notes during the interview sessions.

Data Analysis
Vocabulary Ability Scores on Pre-test and Post-test
    The quantitative data obtained through the pre- and post-test were analyzed using descriptive and inferential statistic protocols. The data were calculated to find the mean score and standard deviation. The statistic comparison was to identify the significant differences between the pre- and post-test scores. Moreover, inferential statistical analysis was employed, and a dependent Sample T-test (2-tailed) was used to indicate if the discrepancy between the pre- and post-test scores were significantly different. Additionally, t-value and df-values were included to calculate the effect size to help validate the results.

Students' Reflective Journals
    The qualitative data were analyzed using the thematic coding, as suggested by Creswell and Poth (2013). The data were categorized into themes regarding the frequency of repeated words and keywords. Similar information was grouped into categories with assigned and specific labels. Member checking was also assigned for triangulation, and independent observers examined the categories to ensure the consistency and creditability of the researcher's analysis.

Students' Perception Questionnaire
    Students' self-rating scores from the perception questionnaire were analyzed and calculated for the mean and standard deviation and interpreted into five levels as follows.

        4.21-5.00 = very high
        3.41-4.20 = high
        2.61-3.40 = moderate
        1.81-2.60 = low
        1.00-1.80 = very low

Furthermore, all students were asked to respond to three open-ended questions. The responses were labeled and grouped to yield themes of perception. The data gathered were analyzed via open coding methods (Strauss & Corbin, 1990).

Semi-structured Focus Group Interviews

Interviews were transcribed verbatim to capture the richness and in-depth of the data. Thematic coding was used to interpret the transcriptions of the semi-structured focus group interviews. The triangulation of qualitative data gathered from students' reflective journals, a students' perception questionnaire, and semi-structured focus group interviews intended to increase the credibility and validity of the study.

Results and Findings

The findings of this study are divided into two parts, namely 1) the impact of the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning, and 2) students' perceptions toward the application of the integrated instruction to improve their vocabulary ability.

The impacts of the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning on improving vocabulary of Thai EFL senior students

This section demonstrated the effects of the integration of implicit and explicit vocabulary instruction, PBL, multimedia, and experiential learning to improve the students' vocabulary ability. Table 3 presents the students' pre- and post-test scores before and after participating in the current study.

Table 3. *Findings from pre- and post-tests*

	Pre		Post				
	$\bar{x}$	SD	$\bar{x}$	SD	t	p	d
Vocabulary ability	43.84	6.17	61.77	7.10	41.32*	.000	2.69

As presented in Table 3, the paired-samples *t*-test shows a statistically significant difference in the pre-test mean scores of vocabulary ability ($\bar{x}$ = 43.84, *SD* = 6.17) and the post-test mean scores ($\bar{x}$ = 61.77, *SD* = 7.10); *t* (22) = 41.32, p < .001. In addition, Cohen's D (*d* = 2.69) indicates a large effect size, suggesting that the intervention had a large effect on language ability pre-test compared with post-test.

Students' perceptions towards the integration of project-based learning, implicit and explicit vocabulary instruction, multimedia, and experiential learning

Regarding the students' perceptions toward the application of the integrated vocabulary instruction obtained from students' reflective journals, a students' perceptions questionnaire, and

semi-structured focus group interviews, it revealed that all 45 students had positive perceptions toward the instruction. They all reflected that integrated vocabulary instruction was advantageous and practical, and it helped to improve their vocabulary ability significantly. Moreover, they reported that they could learn new vocabulary faster and more easily, and their level of self-confidence also increased. With the improvement of vocabulary learning and self-confidence, the students mentioned that their speaking skills were also better. The instruction also created a pleasant learning atmosphere, which encouraged them to participate in classroom activities and use technology for learning. The students' comments gathered from the interviews were presented as the following.

Memorizing New Vocabulary Faster and More Easily
S29: Activities and techniques of this course help me remember new words faster because I get more techniques to guess the meaning of new words such as looking at context clues and using prefixes and suffixes. These techniques are very useful for me to apply to guess the meaning of other words.

S6: The use of motivating and attractive PowerPoint presentations consisting of definitions, related pictures, pronunciation clips, and sample sentences helps me remember more easily.

Increasing Self-Confidence
S29: This course helps develop my self-confidence in using English to speak in front of the class because I practice presenting with my friends my times before the actual presentation.

S1: With the teacher's support, feedback, suggestions, and assistance through this course, I have more confidence to present in English in front of others.

Improving Speaking Skills
S41: I practice presenting so many times that I can remember everything. Finally, I can do my job perfectly. It has given me much confidence in speaking English.

S8: From previous teaching and learning, I have very little chance to speak English and present in front of the class. This course allows me to speak more. I have developed my English speaking and presenting in front of others.

Creating a Pleasant Atmosphere to Study
S26: Instead of lecturing, using various activities makes my classroom more fun and interesting to study. I, therefore, enjoy this class the most.

S1: The implementation of many activities, such as Q&A sessions, pronunciation practice, and various fun games, make me enjoy the lesson and make my classroom environment more relaxing and interesting.

Providing Students with the Opportunity to Participate in Classroom Activity
S9: Having the opportunity to teach friends and study with friends encourage me to join the classroom teaching and learning a lot.

S32: Making a vocabulary project, a multimedia PowerPoint presentation, based on project-based learning procedures helps motivate me to be involved in the teaching and learning activities.
Encouraging Students to Use Various Kinds of Technology
S39: What I gained the most from learning this course is to use new technology beginning from making a project to teaching friends in class. Technology is involved in every procedure of the course.

S33: This course encourages me to use technology a lot especially in the process of making PowerPoint presentations because I have learned how to make, edit, and create an interesting and attractive PowerPoint presentation through this course.

Discussion
       Even though very little previous research employed an integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning to improve EFL learners' vocabulary ability, the researcher found, in the current study, this intervention advantageous and innovative in the field of vocabulary development. It can be an alternative teaching strategy for vocabulary. The researcher also found that the participants' responses in the journals, questionnaires, and interviews presented a similar idea that the abovementioned intervention hugely improved their vocabulary ability. The following section explains how the course helps to enhance the participants' vocabulary performance.

Reasons Why the Intervention Helps Students Improve Their Vocabulary
The Opportunity to Create a Project
       When students were assigned to create a vocabulary project to teach 10 vocabulary words to their peers, students have to search, study, and understand all aspects of their assigned vocabulary. Besides, they have to find the example sentences, which include target vocabulary, pictures, and pronunciation clips related to the vocabulary. These processes encourage them to learn and remember vocabulary simultaneously. Furthermore, being responsible for searching for relevant information about the target vocabulary, such as definitions, meanings, example sentences, pronunciation, and related images, help them remember words more easily.

The Opportunity to Teach Their Friends
       In this study, when students finished creating their projects, they have to use their projects to teach their peers. Having an opportunity to teach their peers and prepare their lessons enabled them to develop vocabulary ability. Besides, acting as a teacher, practicing presenting many times, and receiving feedback from the teacher greatly helped them increase their vocabulary ability.

The Opportunity to Learn with Their Friends
       Apart from teaching their friends, students also have a chance to learn vocabulary from their friends. Peers' teaching not only helped students to remember words well but also made the teaching atmosphere relaxing and not stressful. When students feel comfortable and enjoyed, they are active and willing to participate in classroom activities. When they do not understand, they feel free and ask and answer questions. This helps them to memorize vocabulary faster and more easily.

Practical and Useful Techniques

This section will discuss the practical and outstanding techniques used in this study, according to the students' responses. Most students mentioned that peer teaching techniques and the use of multimedia facilitate their vocabulary learning as the following.

Peer Teaching Techniques
Peer Teaching Techniques Help Students Learn New Vocabulary Faster and More Easily.

Most participants in the current study reported that peer teaching helped them develop their vocabulary ability faster and more easily. This is in line with various studies that peer teaching increases the students' knowledge of vocabulary acquisition (Kourea, Cartledge, & Musti-Rao, 2007), and peer teaching facilitates students to successfully master new English vocabulary words and their spellings (Greenwood, Arreaga-Mayer, Utley, Gavin, & Terry, 2001; Mackiewicz, Wood, Cooke, & Mazzotti, 2010). Since peer teaching requires students to use social skills and collaboration, students have more chances to interact with each other. Furthermore, students who are normally silent in the classroom will gradually be active and more verbal. As a result, the vocabulary retention rate will be higher, and students will acquire more vocabulary words (Malone & McLaughlin, 1997).

Peer Teaching Techniques Creates a Pleasing Classroom Environment

Most participants also mentioned that peer teaching helped create a pleasing classroom environment; moreover, it made the teaching atmosphere more relaxing and enjoyable. This finding can be supported by a study conducted by Gut, Farmer, Bishop, Hives, Aaron, and Jackson (2004) that students were more enthusiastic about their learning and enjoyed playing the part of the tutor or tutee. Besides, peer teaching seems to create a positive impact on struggling learners who find asking for help difficult. It also promotes positive feelings toward the subjects being taught, collaborative learning activities, and teachers (McDuffie, Mastropieri & Scruggs, 2009).

From the researcher's observation, when the participants were taught by their peers, they got involved in their learning more. Moreover, peer teaching encouraged the participants to admit that they had problems understanding the lessons. This situation triggered discussions, inquiries, practice, and evaluation of the learning process with direct feedback. Consequently, peer teaching grants students more opportunities to practice what they learn by doing the required activities. The students' awareness of responsibility and self-confidence also increases. The finding is in the same direction as the ones yielded in the studies of Brady, Holt, and Welt (2002), Tang, Hernandez, and Barbara (2004), Kenner and Kress (2004), and Weberschock, Ginn, Reinhold, Strametz, Krug, Bergold, and Schulze (2005) that peer teaching is an effective teaching strategy to develop students' language and social abilities.

To conclude, peer teaching can be a wonderful gift in the classroom, providing a varied approach for both the teacher and the student in the learning process. However, the teacher should be creative, take the plunge, and organize some activities where the students take the lead, discussion groups, feedback, oral presentations, and brainstorming.

The Use of Multimedia to Facilitate Vocabulary Learning
Another essential aspect gained from most of the participants' reflections is the beneficial use of multimedia to facilitate the faster and easier learning of vocabulary. Most participants reported that the use of text, sound, pictures, videos, and animations helps them learn new vocabulary more effectively in a faster and easier pace. The participants' responses in the present study are consistent with some other previous research studies as the following.

Multimedia facilitate language learning and teaching (Nation, 2001). They allow learners to use multisensory elements, texts, sound, pictures, videos, and animations as they provide a meaningful and comprehensive learning context. Paivio (1990) stated that the more learners associated target words with appropriate nonverbal referents (pictures, objects, emotions, and events), the more meaningful their connections between verbal and visual would become. As a result, when learning new words verbally and visually, ESL/EFL learners have better recall and more appropriate use of the words, compared with when the words are either verbally or visually coded individually. Therefore, additional pictorial cues are efficient and effective, and they assist learners to associate words and pictures (Oxford & Crookall, 1990).

Furthermore, some researchers discussed the impacts of the use of multimedia to information presentation on L2 vocabulary acquisition (Akbulut, 2007; Kim & Gilman, 2008). The results of these studies showed that texts, along with videos, pictures, and graphics, promoted L2 vocabulary acquisition. The results of Akbulut's (2007) study showed that students having access to word definitions, along with pictures and short video clips, achieved significantly higher vocabulary scores than those groups assigned to research only word definitions.

In summary, vocabulary development vitally influences the progress of language learning in every aspect. An integration of different modes of multimedia inputs, such as texts, sounds, pictures, videos, and animations, will yield effective English language learning procedures, not only for vocabulary teaching and learning but also for teaching and learning of other linguistic contents.

Implications
To effectively implement the teaching techniques used in this study, there are some aspects that interested teachers should take into consideration.
Firstly, teachers must have content knowledge of using a computer and various technological media since they have to give students advice and design vocabulary projects and multimedia PowerPoint presentations, as examples for students before assigning them to create their work.

Secondly, implementing implicit-explicit teaching, PBL, multimedia, and experiential learning aims to inspire students to create their projects and multimedia PowerPoint presentations to teach their friends in the classroom. The role of the teachers is to give advice, help students solve problems, boost students' critical thinking skills, and support them to work in groups efficiently. The teachers, therefore, need to be creative, patient, resourceful, unbiased, open-minded, and flexible.

Thirdly, the duration of teaching and learning management of using the integration of implicit-explicit teaching, PBL, multimedia, and experiential learning is quite long. Consequently, interested teachers should study and manage the teaching and learning time well enough and prepare the teaching plan in advance to comply with the time limit.

Conclusion

This study investigated the impacts of the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning to improve Thai EFL senior high school students' vocabulary ability. The findings indicated that the students who received integrated instruction significantly improved their vocabulary ability with higher test scores. The qualitative data analysis revealed that all 45 students showed positive perceptions of the instruction. They found that they could benefit from the integration of implicit and explicit vocabulary instruction, project-based learning, multimedia, and experiential learning in class because it facilitated them to learn and master new vocabulary faster and more easily. Besides, students reported that the instruction increased their self-confidence, improved their speaking skills, created a pleasant learning atmosphere, provided them with opportunities to participate in classroom activities, and encouraged them to use various kinds of technology in learning.

Recommendations

The present study recruited only one group of a small number of participants to participant in designed teaching plans within a short period. Thus, some further studies include two groups of a larger number of participants to examine whether the integration of implicit-explicit vocabulary instruction, PBL, multimedia, and experiential learning has different or similar impacts on the experimental group and the control group. Furthermore, intrigued researchers should conduct a research study applying integrated instruction with students in different grade levels or academic proficiency to identify if the instruction will yield the same or distinct findings. Finally, a delayed post-test is worth conducting to examine whether the positive effects of the instruction can help the students to retain their vocabulary ability.

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