



EFFECTIVENESS OF OUT-OF-CLASS INSTRUCTIONAL MEDIA INTEGRATED SONGS TO ENHANCE VOCABULARY KNOWLEDGE OF EFL UNIVERSITY STUDENTS

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The study developed out-of-class interactive instructional media integrating songs to enhance students' English vocabulary, examined its effectiveness, and explored the students' perspectives on using these media to enhance their vocabulary. The instruments utilized were needs analysis form, vocabulary test, the developed instructional media and learning log, and evaluation questionnaire. The media development procedures followed the systematic model in developing learning materials known as ADDIE, using 172 EFL students from an English reading course in the second semester of the 2017 academic year. Both quantitative and qualitative methods were used to examine the effectiveness of the media. The study data were analyzed using descriptive analysis (percentage, mean, and SD), the paired sample t-test, and content analysis. Based on information from the needs analysis, the instructional media "Learning Vocabulary through Music and Lyric" were developed as a 1.30-hour interactive learning package. This set of seven main parts of practice exercises comprised 26 songs and 60 target vocabulary items and phrases used in daily life, standardized tests, and vocabulary in academic fields. The results revealed that the students' vocabulary knowledge was significantly improved after they were exposed to songs, the instructional media, and components in the media. In addition, the students' opinions toward the instructional media were very positive. They agreed that the media were useful; they were satisfied with the content and components of the media. They also agreed that the media promoted out-of-class language learning motivation and autonomous learning. They were content with the quality and the developed instructional media overall.

Keywords: Instructional media, Development of application for PC, Vocabulary knowledge, Independent learning, EFL university students.

Introduction

English is a universal language which can be used not only among native speakers of English but also non-native speakers. Because English is everywhere and it is used in various contexts, it is considered to be an essential language for students in order to help them succeed academically and professionally. Even though English is one of the compulsory subjects in many schools and universities, Thai students still had some difficulties in communicating English effectively with confidence. This problem may result from English as a foreign language (EFL) learners regularly use their mother tongue language as a common means of communication; they consider English as a subject matter, not a skill for life. As compared to the English as a second language students (ESL), Thai EFL students have fewer chances to be exposed to

English in their daily lives. Also, with the dominant characteristic of Thais as EFL learners, they may be shy or reluctant to take opportunity to speak English among non-native and native speakers. Because there is no urgent need to use English for survival, many students do not put enough effort to take charge of their learning to improve their English skills. Some of them have a low level of perseverance in accomplishing learning goals by practicing the language themselves regularly. As a result, the average English skill level of Thais in 2017 measured by TOEFL iBT is below the international average (ETS, 2017). Comparing to other major ASEAN countries, Thailand is still far behind many countries like Singapore, Malaysia, the Philippines, Indonesia, Vietnam, and even Myanmar. Furthermore, the Education First (EF) analyzed English language skills of 1.3 million test takers (non-native English speakers), around the world. According to the EF's English Proficiency Index (EF, 2018), it revealed that Thailand ranked 64th out of 88 countries. The average of Thais' English language proficiency index score was 48.54 out of 100 which was considered as low proficiency. From the above results, it indicates that Thai students still have limited ability to use English effectively; they still have a low level of motivation to engage in learning and practice English by themselves outside classes.

Famous educators (Brown, 2001; Ellis, 1994) in English Language Teaching have realized that the lack of ready-made context for communication outside the classroom is a major problem and obstacle for EFL learners, so they have provided some guidelines to help compensate. Ellis (1994) suggested the students make use of the abundant resources and media to help them improve language skills beyond the classroom. Therefore, teachers should make efforts to analyze students' needs, provide motivation-stimulating activities, and create an atmosphere for learning, and give students the opportunity to use English in their daily situations or every day's lives.

With the Internet and the cutting-edge technology of the 21st century, EFL students can find plenty of out-of-class learning resources such as online materials, media, movies, and songs. The students can take advantage of technology and authentic resources as a chance to acquire language inputs and practice language skills on their own pace outside the classroom. Cook (2001) suggested employing authentic materials in language instruction as they provide ample examples of language use in daily life. Therefore, to fulfill students' language proficiency, many modern teachers in EFL have shifted their central role from spoon feeders to be facilitators who can also give the students some advice on how to practice English with abundant resources.

Songs, which people can hear daily, are a form of authentic material. Using songs in learning is beneficial for learners for several reasons. First, songs can create a friendly, enjoyable, and relaxing atmosphere in which to learn a language; learning English through songs helps students reduce a tense atmosphere (Lo and Fai Li, 1998). Second, songs normally deliver comprehensible input with fun and entertainment to listeners (Monreal, 1982; Domoney & Harris, 1993; Adamowski, 1997). Third, songs can be used to focus on different language aspects, especially vocabulary and pronunciation. Songs can be used as a sample of language to be analyzed or used as exercises for practicing many aspects of language (Handcock, 1998). They are effective authentic resources in introducing vocabulary as they provide meaningful contexts for vocabulary (Griffiee, 1992). Songs can be used to provide an opportunity for vocabulary learning because they are typically based on a theme or a topic (Millington, 2011). Fourth, Murphey (1992) recommend that songs can be used in English language teaching as they are an efficient way to keep students' attention while learning, to increase memory retention, and to reinforce the language. Moreover, Maess & Koelsch (2001), the researchers in Neurological field have revealed that music and language processing occur in the same area of the brain. Since songs comprise rhyme and story, they support people's memory and enhance language learning. Abbott (2011) expresses a similar view that even how many years have passed, adult learners can still recall their favorite songs. The melody and the songs still stick in their minds subconsciously. He also proposes that pop and rock music are highly effective teaching tools and useful in the language classroom, particularly at the college level.

Vocabulary has been seen as one of the fundamental and crucial issues in second language acquisition, especially for EFL learners. Famous scholars in English language learning and teaching (Wilkins 1972; Harmer 1991; Krashen as cited in Gu, 2003) pointed out the importance of vocabulary in relation to communication. As Wilkins (1972) says "...without grammar, very little can be conveyed;

without vocabulary, nothing can be conveyed.” (p.111). Krashen (as cited in Gu, 2003) has mentioned that students normally carry their dictionaries along with them when they take a trip, not a grammar book. Thus, it can be assumed that without sufficient vocabulary, the learners cannot show their potential in using English appropriately and accurately. It is clear that vocabulary, rather than grammar, helps them to communicate. Many researchers agree that to help students fully understand a word or vocabulary, the instruction must be rich, interactive, and multifaceted (Beck et al. 2005; Brett et al. 1996; Coyne et al. 2004; Penno et al. 2002 as cited in Jalongo & Sobolak, 2010, p.424). Studies by Chou (2011) and Borgelt (2008) revealed that there is a strong relationship between vocabulary knowledge and language learning. Since vocabulary knowledge helps promote students’ English literacy, it allows the students to become successful readers and eventually become thoughtful, productive, and innovative citizens. Those who have sufficient vocabulary knowledge not only improve academic performance, but they also feel more confident using the four basic skills of English. As teaching vocabulary is considered a vital part in learning English language, teachers should encourage and motivate students to practice vocabulary in their daily situations. English teachers should find ways for students to participate actively in vocabulary learning to enhance their vocabulary knowledge.

Since the researcher has seen the advantages of integrating out-of-class instructional media with songs as well as realized the importance of enhancing students’ vocabulary, this research is conducted along with the rationale mentioned above. The current study has three objectives: 1) to develop an instructional media integrating songs to enhance students’ English vocabulary knowledge; 2) to examine the effectiveness of the developed media in enhancing the students’ vocabulary knowledge, and 3) to explore the students’ perspectives on using the developed instructional media in enhancing their vocabulary knowledge.

Methodology

This study employed both quantitative and qualitative methods. The study was carried out using purposively sampling with EFL university students from an English reading course at Kasetsart University Sriracha campus. The procedures were a model called ‘the ADDIE Model’ (Branch, R. M., 2009). This systematic instructional design model consists of five processes: Analysis, Design, Development, Implementation, and Evaluation, which were explained further in the first part of the findings. Data were collected over approximately 4 months from the second week of January to the last week of April 2018.

Participants

As expected to have English language proficiency above the basic user levels (above A1 - A2), the population was 176 EFL university students who had passed the pre-requisite English subjects (Foundation English I - III) and was enrolled in the regular and special programs of the English Reading course in the second semester of the 2017 academic year at Kasetsart University Sriracha campus, Thailand. In total, 172 university students from five faculties (Management Sciences, Economics, Science, Engineering and International Maritime Studies) participated in this study in order to evaluate the effectiveness of the instructional media.

Instruments

There are four instruments in this study as follows:

1) The needs analysis questionnaire: This questionnaire was developed from the needs analysis which was divided into three parts. It was translated into Thai before being distributed to the study samples to obtain the required student data including language learning, information on listening to music, opinions

about songs, and opinions on the development of English language learning using computer-based instructional media.

2) Instructional media and learning log: They were designed to serve as extensive learning media and were used to address the first objective of the study. The instructional media were produced in an application for Desktop/PC and self-study DVD format, integrating songs and keys vocabulary as well as phrasal verbs or idiomatic expressions. The DVD was developed and used to enhance the students' vocabulary. The main software packages used in developing the CALL program were Macromedia Authorware 7 (educational version), Adobe Photoshop, and Microsoft Windows Media Player. In addition, the three major elements of media production were: 1) visual inputs (photographs of actors/singers, photographs that would probably enhance vocabulary comprehension and recognition were applied in the wrap-up pages, 2) text description provided in the learning objective, direction, definitions, examples, and wrap-up page in each content or exercise, 3) audio inputs (melody, background music, songs, and sound effects) to get the students' attention and to motivate student learning engagement, and 4) interactive features such as navigation buttons, sound buttons, and interactive tasks. Apart from the media, the vocabulary learning log was used to record and assess vocabulary and also as a formative test by which students could self-evaluate their vocabulary knowledge.

2) Vocabulary test: Parallel pre-and-post vocabulary tests were employed to measure the students' vocabulary knowledge. The test was constructed using a list of 60 target vocabulary and phrases from reference books and textbooks used in the reading course. The vocabulary in the tests could be used in real life situations and in academic fields and consisted of a frequency words list, academic word list, and vocabulary items used in standardized tests. The finalized vocabulary test consisted of 30 vocabulary items (14 multiple-choice items, 5 matching items, 5 fill-in-the-blank items, and 6 items on spelling, definition, and vocabulary usage).

3) Evaluation questionnaire: This interview questionnaire was used to explore students' views on using the developed instructional media. It was divided into three parts, followed by open-ended questions to collect further comment on the developed instructional media. A 5-point Likert scale was used to collate data in the part of closed-ended questions about contents, components, and perspectives toward the developed instructional media.

Data Analysis

To examine the effectiveness of the instructional media, the researcher: 1) compare the students' pre-test and post-test vocabulary scores; 2) evaluating the effectiveness of the media by analyzing students' perspectives from the feedback questionnaire. Once the vocabulary tests were returned, the data were analyzed using descriptive statistic and t-test. The questionnaire data were analyzed using the IBM SPSS Statistic package version 22.0 and the descriptive analysis (percentage, mean, SD), and a paired sample t-test.

Results

In response to the research objectives, the findings are presented in three parts as follows.

Part I: Major elements in developing the out-of-class instructional media

In response to the first research objective, the researcher followed the ADDIE model the finding was investigated and described through the ADDIE model's 5 main stages: *Analysis, Design, Development, Implementation, and Evaluation*. Each stage of the ADDIE model used in this study was explained as follows:

Analysis refers to analyzing students' needs, problems, and characteristics through a needs analysis form. In this first stage, the past studies as well as related studies were reviewed to investigate vocabulary-learning problems occurred with the EFL students and to study the concepts of developing the instructional media. The needs analysis questionnaire was conducted; it also helped to select the appropriate vocabulary, songs, and exercises used in the instructional media. The results from the needs analysis are presented below.

In this study, the respondents were 172 EFL interdisciplinary students at Kasetsart University, Sriracha Campus. Based on the first parts of the needs analysis, the students were both male and female; aged between 19 and 25 years. They were studying in Management Sciences, Economics, Science, Engineering and International Maritime Studies; they were sophomores, seniors, juniors and above. The respondents enrolled in the Fundamental English Reading course (both in the regular and special programs). Their learning styles were visual learners (38.92%), auditory (38.32%), kinesthetic (14.97%), and read and write learners (8.38%) respectively. The part of English lesson that the students had troubles the most were vocabulary and phrases (27.84%), followed by speaking (26.70%), writing (14.20%), reading (11.93), grammar (11.36%), and listening (7.95%), respectively.

The results in the second part reported that about 32.95% spent approximately 1 hour listening to music per time, followed by 30 minutes (23.30%), 2 hours (17.05%), more than 2 hours (14.77%), and 15 minutes (11.36%), respectively. Only 0.57% spent 5 minutes listening to music per time. Regarding the most generic styles of music preferences, nearly half of respondents (47.16%) stated that pop music was their most favorite one. The second favorite type of music was soundtrack (24.43%), the third was any kinds of music (multi-genre) (14.77%), followed by acoustic (5.68%), jazz (2.84%), country (2.27%), and rock (1.70) respectively. Bossa nova (0.57%) and hip-hop (0.57%) were the least favorite genres of music in the findings. In addition, the most favorite female singer/ band that students liked was Taylor Swift followed by Adele, and Katy Perry, respectively. The most popular male singer or band was Bruno Mars. Followed by Ed Sheeran, and Justin Bieber, respectively. Moreover, the first ranked expectation from English songs was to enhance knowledge of vocabulary and phrases (37.18%). The second expectation was to develop their listening skill (18.12%). The third expectation was to increase ability in speaking (16.17%) and reading (16.17%). Other expectations were grammar (6.24%) as well as fun and entertainment (6.12%). The top-3 skills/knowledge that the students expected from English songs are shown in bold in Table 1.

Table 1. List of expectations from listening to English songs with top-3 in bold

No.	Expectations from listening to English songs	Percentage	Rank
1	Vocabulary and Phrases	37.18%	1
2	Listening	18.12%	2
3	Speaking	16.17%	3
4	Reading	16.17%	3
5	Grammar	6.24%	4
6	Others (fun and entertainment)	6.12%	5

The results in the third part from the needs analysis described the opinions of respondents on the development of English language learning using CALL or the out-of-class instructional media. A summary of the results follows.

Table 2 points out the ranking of preferred vocabulary topics from English songs. It reveals that the top-ranked preferred vocabulary topic that students wanted to learn from the computer-assisted instruction was vocabulary and phrases in daily conversation (38.06%). The second preferred vocabulary topic was vocabulary in an academic field and standardized tests (25.28%). The third was vocabulary in the workplace (20.62%), followed by vocabulary for traveling (6.34%), vocabulary about health and sports (5.41%), and vocabulary in entertainment (4.29%).

Table 2. Preferred vocabulary topics selected by the students with the top-3 in bold

No.	Preferred vocabulary topics	Percentage	Rank
1	Vocabulary and phrases in daily conversation	38.06%	1
2	Vocabulary in academic field and standardized tests	25.28%	2
3	Vocabulary in workplace	20.62%	3
4	Vocabulary for traveling	6.34%	4
5	Vocabulary about health & Sport	5.41%	5
6	Vocabulary in entertainment	4.29%	6

In selecting vocabulary and phrases, besides numerically ranking their 3 most preferred vocabulary topics, the students were asked to choose unfamiliar words and phrases that they wanted to study. Table 3 shows top-10 unknown words and phrases that the students desired to learn from the computer-assisted language learning (35 unfamiliar out of 60 vocabulary items).

Table 3. Top-35 unfamiliar vocabulary and phrases selected by students

No.	Phrasal verb	Percentage	Rank
1	figure out	9.01	1
2	count on	6.26	2
3	peculiar	5.35	3
4	feel blue	5.35	3
5	overdue	4.07	4
6	collide	4.07	4
7	consequences	3.49	5
8	run out of	3.49	5
9	over the moon	3.49	5
10	flaw	3.49	5
11	conceal	3.49	5
12	fluctuate	3.49	5
13	shallow	2.19	5
14	frown	2.91	6
15	odd	2.91	6
16	run into	2.91	6
17	move on	2.91	6
18	rain on one's parade	2.91	6

No.	Phrasal verbs	Percentage	Rank
19	out of mind	2.91	6
20	come across	2.91	6
21	rock the boat	2.33	7
22	toss and turn	2.33	7
23	compliment	2.33	7
24	hold one's tongue	2.33	7
25	stand tall	2.33	7
26	superficial	2.33	7
27	bare	2.33	7
28	grin	2.33	7
29	deal with	2.33	8
30	hang in there	2.01	9
31	physical	0.58	10
32	bubbly	0.58	10
33	bump into	0.58	10
34	make a mess	0.58	10
35	parallel	0.58	10

Concerning the types of English exercises that students preferred doing, some students (36.93%) answered that matching was their most favorite type of English exercises. The second highest-ranked type of English exercise which students prefer was multiple-choice (33.52%), followed by true-false (10.80%) and filling in the blank (10.80%), finding errors (4.55%), and short answer (3.41%), respectively. In terms of the kind of illustration that students wanted to see if they had a chance to learn English from the computer-assisted language learning (CALL), more than half of the students (57.95%) answered that they preferred to see pictures of people such as singers or actors/actress's images, while

27.84 percent would love to see cartoons and some wanted to see scenery or a view (13.07%) or all of the mentioned illustrations (1.14%). In addition, most students (34.66%) answered that DVD with lyrics was their most favorite type of media that the students desired to utilize, followed by DVD with games (27.84%), DVD with music MV (26.14%), and DVD songs (10.80%), respectively. Only 0.57% preferred every type of media.

Design refers to systematically plan the instructional media design based on the results from the needs analysis. This stage of material development focuses on stating learning objectives, designing screen and graphics components, demonstrating overall composition and contents, and selecting the most appropriate media. In this stage, the instructional media were planned to be developed as an application for desktop/ PC or interactive learning package to enhance the students' vocabulary knowledge. The terminal learning objective was to promote student autonomy along with the development of vocabulary knowledge. The media were created based on students' preferences so that students would be able: 1) to understand vocabulary in the out-of-class instructional media, 2) to monitor their learning outside the classroom, and 3) to use the vocabulary learned accurately. Then, the researcher searched for popular songs that appeared on the Billboard's Hot 100 singles chart or were popular songs from YouTube. The nominated songs were carefully screened and subsequently 26 songs were selected for inclusion in the CALL program. Then, suitable stanza and 60 key vocabulary items were selected. The plan aimed to divide the contents/theme exercises of the media into seven parts: 1) 'Musical Pictionary', 2) Collective Words, 3) Vocabulary in Context, 4) Phrasal Verbs and Idiom, 5) Synonyms, 6) 'Write Them Right', and 7) 'Odd One Out'. The needs analysis results showed that the primary focus for the media vocabulary was the students' unknown words that they needed to learn regarding vocabulary and phrases in daily conversation, standardized tests, and vocabulary in academic fields. Moreover, the storyboard was designed to organize the content in the storyboard systematically. The samples of the detailed storyboard are described below.

Figure 1 and 2 illustrate sample screenshots from the developed instructional media entitled "Learning English Vocabulary through Music & Lyrics", consisting of the welcome page, introduction, learning objectives, the home page, some contents/exercises, and references.

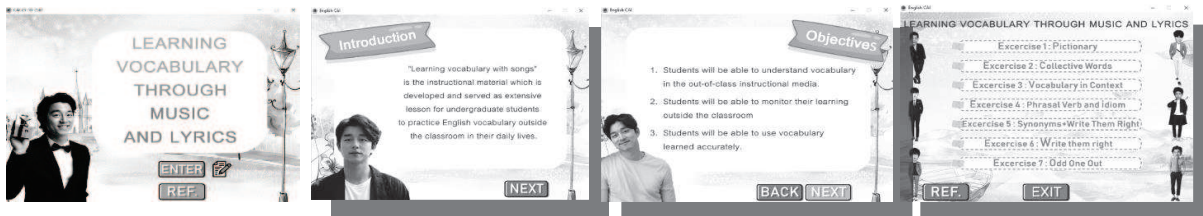


Figure 1. Sample of the welcome page, main learning objective, and the home page from the instructional media

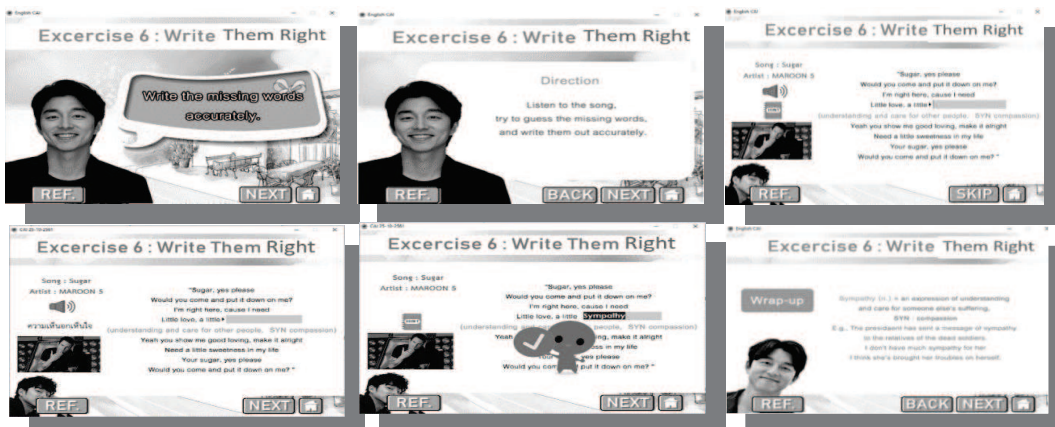


Figure 2. Sample of the developed instructional media from exercise 6

Development refers to the development of the tools used in the second phase of this study consisting of 1) the needs assessment form, 2) instructional media with the learning log, 3) vocabulary test, and 4) evaluation questionnaire. All of the instruments were constructed based on theories and empirical studies. Both native and non-native experts in the field of Humanities and Social Sciences or Educational Technology were invited to validate the instruments using the Items-Objective-Congruence Index (IOC). From the experts' judgments, the IOC values of the needs analysis form, instructional media together with learning log, vocabulary test, and evaluation questionnaire were high as they had the IOC index of 0.95, 0.96, 0.95, and 0.95. The results of the IOC index indicated that all overall were acceptable. After the instruments were adjusted accordingly, a pilot study was conducted in the Business Information Center of the Faculty of Management Sciences. The instruments were piloted in February 2018, on 25 voluntary undergraduate students who shared the same educational background and knowledge. After having the rationale and the objectives of the study explained to them, the students took the vocabulary test for 50 minutes. Then the instructions on how to use the instructional media, how to open and how to close the software were given before the tryout, the students spent 90 minutes participating in learning through the developed instructional media independently. In the pilot study, the researcher served as the facilitator and observer to oversee students' interaction, trial the possible problems that would happen with the experiment, primarily check whether the instruments were applicable, and receive useful feedback from the users.

Implementation refers to the implementation of the developed out-of-class instructional media and learning log with 172 participants in the study. This stage was composed of three main processes: 1) conducting the pre-test, 2) implementing the instructional media, and 3) conducting the post-test and the questionnaire. The implementation stage was conducted over approximately 4 months from the second week of January to the last week of April 2018. The pre-test was used to assess the students' vocabulary before and after using the instructional media. The pre-test took around 50 minutes. After students had completed the test, the developed instructional media, learning logs, and users' guides were distributed to the participants. The students utilized the instructional media at their own pace by themselves for 1 month. As one of the assignments in the English reading course, the students needed to record the vocabulary learned from the developed instructional media in the learning log. Then, they were required to do the post-test after the treatment. Furthermore, the evaluation questionnaire was administered to each of the participants to measure students' opinions on the developed instructional media. An interview was also conducted with some students to investigate the effectiveness of the instructional media.

Evaluation refers to 1) examining the effectiveness of the instructional media by comparing students' pre-test and post-test vocabulary scores and 2) evaluating the effectiveness of the integrated songs as out-of-class instructional media for enhancing vocabulary knowledge by analyzing students' perspectives from the evaluation questionnaire.

Part II: Effectiveness of the out-of-class instructional media on the students' vocabulary knowledge

In response to the second research objective, the researcher examined the effectiveness of the developed instructional media as a tool for enhancing the students' vocabulary knowledge. The comparative analysis between the mean scores of the English vocabulary pre-tests and post-tests used parallel pre-tests and post-tests to examine vocabulary knowledge of 172 undergraduate students in the second semester of the 2017 academic year.

Concerning the personal data of the students in this study, about two-fifths (40.12%) were studying in Management Sciences, followed by Economics (25%), Science (22.09%), Engineering (8.72%), and International Maritime Studies (4.07%) respectively. Of the 172 respondents, nearly half (47.67%) were second-year students, followed by fourth-year students (27.33%), third-year students (19.77%), and fourth year and above (5.23%). The participants were enrolled in the Fundamental English Reading course (both in the regular and special programs) and 92 students (53.5%) were studying, in Sections 800 and 801 in the regular programs, whereas 80 respondents (46.5%) were in Sections 850 and 870 in the special programs.

Table 4 shows the mean score (total score was 30), standard deviation, mean difference, t-value, and significance level of the pre-test and post-test vocabulary knowledge of the EFL undergraduate students who were studying the fundamental English reading course at Kasetsart University, Sriracha campus. As shown in Table 5, the post-test mean scores ($\bar{x} = 19.91$) of the vocabulary knowledge was higher than the pre-test mean score ($\bar{x} = 7.62$). The mean difference was 12.29, and t-value was 26.17 with a degree of freedom of 171 ($n = 172$). The results revealed that the students' post-test mean score was significantly higher than the pre-test score at the 0.05 significance level. Therefore, the first hypothesis was accepted; it can be concluded that the students had significantly improved their vocabulary knowledge after using the out-of-class instructional media.

Table 4. Comparison of students' pre-test and-post-test mean scores

Test	N	\bar{X}	S.D.	M.D.	t	df.	Sig.
Pretest	172	7.62	3.55	12.29	26.17	171	.00*
Posttest	172	19.91	6.49				

* $P < 0.05$

Part III: Students' perspectives toward the out-of-class instructional media

After finishing interacting with the developed instructional media as well as doing the posttest, the students were asked to reflect on the developed instructional media. Each student was given a sheet of paper containing 13 closed and open-ended questions. The questionnaire was in their native language (Thai) so that the students could understand the questions and answer in detail. There were four parts involving 12 closed questions with a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

According to the survey, the students had positive opinions on learning through the developed instructional media. From Table 10, in the first aspect, the overall mean score ($\bar{x} = 4.36$) revealed that students were very satisfied with the usefulness of the instructional media. The students strongly agreed that the instructional media adopted useful vocabulary for daily communication ($\bar{x} = 4.38$) as well as standardized test preparation ($\bar{x} = 4.33$).

From Aspect 2, the overall mean score ($\bar{x} = 4.38$) showed that the students were very satisfied with the content and components in the developed instructional media. The results indicated that the students strongly agreed that the contents, components, and exercises: 1) boosted their vocabulary comprehension as well as strategies in guessing the meaning of unfamiliar words ($\bar{x} = 4.52$); 2) enhanced their vocabulary knowledge ($\bar{x} = 4.40$); 3) were interesting and motivating individual learning ($\bar{x} = 4.36$); 4) were suited to their preferences ($\bar{x} = 4.36$); and 5) were suitable for their needs ($\bar{x} = 4.28$).

In Aspect 3, the overall mean score ($\bar{x} = 4.48$) showed that the students had the highest level of satisfaction on the third aspect (out-of-class language learning motivation and learner autonomy) of the instructional media. The results indicated that the students strongly agreed that songs together with this instructional media help increase motivation in learning outside the classroom ($\bar{x} = 4.56$). They also acknowledged that the instructional media together with the learning log promoted learner autonomy and life-long learning as the instructional media helped facilitate their ability to control their own learning. ($\bar{x} = 4.44$) and the media were enjoyable and helpful for learning English vocabulary at their own pace ($\bar{x} = 4.44$).

In Aspect 4, the overall mean score ($\bar{x} = 4.43$) showed that the students were clearly very content regarding overall satisfaction with the instructional media. From the results, the students strongly agreed that: 1) songs together with this instructional media help students increase motivation in learning outside the classroom ($\bar{x} = 4.46$); and 2) the instructional media were of high quality regarding designs, backgrounds, musical background, pictures, and sound effects ($\bar{x} = 4.40$).

Table 5. Students' opinions toward the instructional media

Statement	Scale					\bar{x}	S.D.	Rank
	5	4	3	2	1			
Aspect 1: Usefulness ($\bar{x} = 4.36$)								
The instructional media adopted useful vocabulary for daily communication.	74 (43%)	90 (52.3%)	8 (4.7%)	0	0	4.38	.576	1
The instructional media adopted useful vocabulary for standardized test (TOEIC/ TOEFL/ IELTS) preparation	72 (41.9%)	85 (49.4%)	15 (8.7%)	0	0	4.33	.631	2
Aspect 2: Content and components in the instructional media that enhanced language learning ($\bar{x} = 4.38$)								
The contents and exercises of the instructional media boost your vocabulary comprehension as well as strategies in guessing the meaning of an unfamiliar word by looking at its context.	100 (58.1%)	62 (36%)	10 (5.8%)	0	0	4.52	.607	1
The contents and components of the instructional media enhance your vocabulary knowledge.	80 (46.5%)	81 (47.1%)	11 (6.4%)	0	0	4.40	.609	2
The content and exercises of the instructional media are interesting and motivating for individual learning.	74 (43%)	86 (50%)	12 (7%)	0	0	4.36	.610	3
The components of the instructional media (e.g., songs, singers, and designs) fit with your preferences.	78 (45.3%)	78 (45.3%)	16 (9.3%)	0	0	4.36	.647	4
The design of the instructional media fits with your needs.	66 (38.4%)	88 (51.2%)	18 (10.5%)	0	0	4.28	.643	5
Aspect 3: Promoting out-of-class language learning motivation and autonomous learning ($\bar{x} = 4.48$)								
Songs together with this instructional media help increase motivation in learning outside the classroom.	104 (60.5%)	60 (34.9%)	8 (4.7%)	0	0	4.56	.584	1
The instructional media together with learning log promotes autonomous learning and life-long learning in terms of facilitating your ability to control your own learning.	84 (48.8%)	80 (46.5%)	8 (4.7%)	0	0	4.44	.584	2
The instructional media are enjoyable and helpful in learning English vocabulary at your own pace.	88 (51.2%)	71 (41.3%)	13 (7.6%)	0	0	4.44	.632	3
Aspect 4: Overall Satisfaction ($\bar{x} = 4.43$)								
I am content with the developed instructional media entitled "Learning English through Music & Lyrics" overall.	88 (51.2%)	75 (43.6%)	9 (5.2%)	0	0	4.46	.596	1
The instructional media have high quality regarding designs, backgrounds, music background, pictures, and sound effects.	84 (48.8%)	72 (41.9%)	16 (9.3%)	0	0	4.40	.654	2

Mean Scores 4.21 - 5.00 = strongly agree, 3.41 – 4.20 = agree, 2.61 – 3.40 = neutral, 1.81 – 2.60 = disagree, 1.00 – 1.80 = strongly disagree

At the end of the questionnaire, there was an open-ended question created to collect general comments or suggestions about the instructional media. In response to this section of the questionnaire, the researcher purposively interviewed 20 students; there were 10 students from the regular program and the others from the special program. The students provided both positive and negative feedback. From the interview, it was found that most of the students had positive feedback on the instructional media. “Excellent, well done, very good, and I love them” were the common words in the feedback questionnaire. The respondents gave supportive reasons that they had a positive attitude toward the instructional media (i.e., applicable in real-life situations, flexible, enjoyable, effective, useful, engaging, user-friendly, entertaining, motivate, and support learning independently). Some of them confirmed that the instructional media enhanced their vocabulary knowledge. The students stated that the instructional media were useful and the vocabulary learned could be applied in daily life communication. Some of them were pleased that they could schedule their learning through the media whenever they had free time. They also had adopted their positive attitude toward self-learning as they agreed that learning through the instructional media made them feel like they studied new words for pleasure and nearly forgot the feeling that they were studying. The students said that the learning log was useful for them to record and review new vocabulary learned in creative ways. The students agreed that lyrics, illustrations, and photographs are beneficial features for them to predict or interpret the meanings of the unfamiliar words from the songs.

The statements presented below are the students’ positive feedback extracted from the interview.

- “The instructional media were perfect for me because I could apply a lot of vocabulary and useful phrases used in real-life situations. They also offered flexibility, so I could practice or review vocabulary whenever I wanted. Practicing English by myself was not as difficult as I thought.” [Student A]
- “The instructional media were enjoyable. They encouraged me to do exercises and learned new vocabulary when I had my spare time.” [Student B]
- “The interactive instructional media helped me understand the meaning of songs, and they helped me recall vocabulary. It was an effective way to learn vocabulary that I was able to learn independently at my own pace. I could pause, go back, review, or learn many times until I comprehended the key terms and contents. I love it.” [Student C]
- “The program features vocabulary with meaningful pictures, lyrics, definitions, and understandable explanations which were very helpful for me to learn new words. The vocabulary-learning log was also useful for me to review the vocabulary learned from the media. This multimedia program supported me in learning new words effectively and independently.” [Student D]
- “This interactive learning package was entertaining. It motivated me to learn more because I did not feel like I was studying vocabulary. I also had a good chance to listen to popular international songs and soundtracks which was so cool.” [Student E]
- “Excellent! The design of multimedia in the learning package was very well and unique. The lessons and exercises in the program were interesting and entertaining. When I listened to the songs, I felt like I was studying new words for pleasure. Sometimes, I nearly forgot the feeling that I was studying vocabulary. Media with songs attract music lovers to spend time using the media as they get hooked to the songs easily.” [Student F]
- “I feel engaged with the media because they provided a variety of interactive exercises and games. The songs in the program were popular these days, and the lyrics of the songs helped me comprehend new words and expressions used among a lot of people.” [Student G]
- “Learning vocabulary through music and lyrics was so much fun that made me want to see more of this type of instructional media. I could learn new words while having fun. After I had taken notes in my learning log, I practice my pronunciation, and I usually sang along, too.” [Student H]

- “Very good! The educational multimedia program was user-friendly and attractive. The learning log was useful to record and learned new vocabulary in creative ways. I designed the learning log as flashcards. Did you see them? I was so proud of creating them.” [Student I]
- “Well done! The multimedia program with songs, lyrics, and nice pictures worked really well with me. In some parts of the song that I did not understand the meaning, I could guess the meaning of the words by reading the lyrics and try to interpret the meaning. It pushed me to learn and practice more. I enjoyed it. The program provided feedback in a friendly way, so I was not afraid to make the mistakes.” [Student J]
- “It helped me to understand the meaning of vocabulary terms, even those which were unfamiliar to me. The illustrations and photographs were very useful for me to predict the meaning of the unknown words of the songs.” [Student K]
- “It was a good learning source to supplement what I am studying in class. It helped me to understand the meaning of vocabulary items and idiomatic expressions that could not be literally translated. The learning log was very helpful and it allowed me to review what I have just learned. It is a creative way of making my own learning record and makes the vocabulary memorable.” [Student L]

In addition, there were some comments and suggestions from the students. Some of them preferred to see an online version of the instructional media so they could access the lessons from their mobile phones which allow them to study anywhere and anytime with many types of gadgets or electronic devices. Sample statements are:

- “It was a very good supplementary tool for learning vocabulary. I would like you to develop this type of media and use them in classrooms. The program should be developed into an application that can be accessed from both mobile phone and computer, so I was able to practice anywhere, anytime with many kinds of devices.” [Student M]
- “The program was very good. This computerized program made me feel active in learning and motivated me to learn English, but I would be more convenient if the program was developed for online learning.” [Student N]

Furthermore, one student preferred to see some animations in the instructional media and also suggested to have more supplementary materials to support their language learning and a lot more time in learning English. Another student suggested the researcher to provide a song-navigation button so that the users could select a lesson by choosing from the song they desired to listen to. Sample statements are:

- “In my opinion, it would be perfect if there were some animations in the media. However, it was a good start to use learning materials to support learning and teaching because I thought that studying English for three hours in Thai traditional classroom is not sufficient for me to be proficient in English.” [Student O]
- “I enjoyed learning through the instructional media and I liked listening to the songs, too. As I usually put songs as musical background when I go to university, do my homework, or go traveling. In my opinion, it will be better if we pick up the lesson by the name of the songs/singers.” [Student P]

Moreover, one student recommended that more vocabulary terms and topics should be included and another student would like to see an easier version of the instructional media. The speed of the songs should be adjusted to be able to slow down so the users can sing along or enjoy learning while they were studying through the instruction media. Another one told the researcher that Thai descriptions and explanations should be provided for those who are not very good at English. Sample statements are:

- “Songs in the instructional media made me feel relax. They were popular so they motivated me to learn well than in the conventional classes. I enjoyed learning through the media. I would suggest having more English vocabulary items and topics such as business and economics.” [Student Q]

- “I liked the designs of the instructional media that integrated songs to teach English vocabulary, but I would like the easier version of the media. Some songs in the program were too fast, so I could not sing along.” [Student R]
- “It was a very useful program; descriptions in Thai should be provided in every exercise because it’s quite difficult for me. There should be Thai descriptions and explanations for those who are not very good at English.” [Student S]

However, there was only one student that had some problems while studying through the instructional media. The statements that he/she (Student T) reported are: “I liked the features in the instructional media, but I preferred studying in the classroom with the teacher. This was because outside of the classroom there were so many things that distracted me such Line or Facebook messengers and I could not control my learning. Moreover, I was reckless -- as I thought that I could learn from this media any time at my dormitory, I put the study off until the last minute. I almost did not meet the deadline to submit the learning log.”

From the above results, it can be concluded that the students’ views toward the instructional media were positive. They agreed that the instructional media were useful; they were satisfied with the content and components of the media. They also agreed that the media promoted out-of-class language learning motivation and learner autonomy. They were content with the quality and the developed instructional media overall. Also, the students provided useful suggestions and comments for further development.

Discussion

In this section, the discussion focused on the three main aspects that had truly ensured the effectiveness of the instructional media and enhanced students’ vocabulary knowledge.

1. *The major components and features in the instructional media*

Because the majority of students’ learning styles in the current study are auditory and visual learners (77.24%), the audio and visual inputs in the instructional media can be the significant features that enhance students’ vocabulary knowledge. The audio inputs (i.e., songs, melody, and sound effects), especially songs can increase students’ engagement, capture attention, create enjoyment and learning motivation. The statements “...It motivated me to learn more because I did not feel like I was studying vocabulary...” (Students E) and “...I felt like I was studying new words for pleasure. ...I nearly forgot I was studying vocabulary...” (Student F says), can be the empirical evidence that songs can facilitate the learning process in a friendly, enjoyable, and relaxing atmosphere in which to learn a language. The belief that songs help develop language skills, retain memory, and reinforce the language with a pleasant atmosphere is also supported by several educators (Monreal, 1982; Griffee, 1990; Murphey (1992); Domoney & Harris, 1993; Adamowski, 1997). Also, Schoepp K. (2001) discuss that using songs in the ESL/EFL classroom is beneficial to language learners for 3 main aspects: affective, cognitive, and linguistic. In addition, the visual inputs (i.e., photographs and text description) in the instructional media can convey the meaning of the difficult terms and its definitions clearly and easily. The visual images accompanying the descriptions of the vocabulary enable the students to understand more vocabulary and phrases especially the abstract ideas and the expressions beyond students’ comprehension. Provided with contextual clues, the lyrics can raise students’ language awareness and enrich their understanding of the unknown words. The additional finding revealed that lyrics, illustrations, and photographs are advantageous for the students to predict, infer, and interpret the meanings of the unfamiliar words in the songs; therefore, the visual inputs promote students’ vocabulary knowledge and strategies in guessing the meaning of unfamiliar words by looking at its context. As one student said, “...In some parts of the song that I did not understand the meaning, I could guess the meaning of the words by reading the lyrics and try to interpret the meaning” (Student J), this statement can be an empirical evidence that songs and lyrics facilitate students’ vocabulary learning strategy in guessing the meaning from the contextual clues. The

findings of the study were consistent with Nation, I. S. P. (2003) that guessing the meaning of unknown words from context is one of effective vocabulary learning strategies for which learners should be trained.

Moreover, the additional findings revealed that the students satisfied with the features in the instructional media that they could schedule their learning through the media whenever they had free time at their own pace. Another student supported, "I was able to learn independently at my own pace. I could pause, go back, review, or learn many times until I comprehended the key terms and contents..." (Student C). Based on the additional results, some students reported attending one or sometimes two or three-hour periods per week of general English which based on the results could be considered insufficient for those students to enhance their English language skills on a broader basis. Therefore, it can be concluded that the developed instructional media helped compensate for the situation of insufficient time exposing to the target language. Furthermore, the interactive features and tasks provide students' corrective feedback promptly in a friendly way in a non-threatening environment as another student says, "...The program provided feedback in a friendly way, so I was not afraid to make the mistakes." (Student J). The corrective and supportive feedbacks in the instructional media could affect students' vocabulary achievement as well as positive perspectives toward language learning. Thus, the results of the present study are supported by some educators that the EFL students improve their vocabulary knowledge, attitude toward learning as well as promote learners' autonomy. According to Pahlavanpoorfard S. and Soori (2014), the students can control their learning; they were not fear to make mistakes when interacting with the computer software because it provided feedback in a friendly way with a secure environment.

2. *The instructional design approach*

The instruction media were developed according to the ADDIE design approach, so it primarily guaranteed the efficiency and effectiveness of the instructional media. As Branch, R. M., 2009; Branch, R. M., & Merrill, M. D. (2012) states that the ADDIE model that the ADDIE model is a fundamental process to create effective and innovative educational resources for the student-centered approach, the ADDIE model can be a guideline in designing effective instructional media. Also, each step in the ADDIE model has an outcome that can be used as formative feedback into the following steps (Culatta, 2018); therefore, the comments and feedback from experts and students were received while producing the media and the instructional media were revised accordingly. Also, the instructional media were designed based on students' needs analysis (the first phase of the ADDIE model); therefore, they can foster students' learning motivation and deal with the students' learning problems effectively. This is in agreement with Kozan K., Erçetin G., and Richardson J. C. (2015) who states that educational multimedia and computer technology can support cognitive process and language learning; the learning will be effective if the design of learning materials matched with individual learner differences.

3. *The vocabulary learning log*

The vocabulary learning log is a useful learning tool to assess students' understanding and attitude toward out-of-class vocabulary learning. This personal learning record is also evidence of students' learning progress. Some students showed an effort to implement several strategies to support the learning process and retain information such as creating the flashcards themselves, drawing images, illustrating the vocabulary, highlighting the key terms, and using a post-it to help remember the new and interesting new words as well as increase their comprehension. The findings of this study support Sinaei, M. and Asadi, J.'s study (2014) that the flashcard is useful and it significantly improved EFL students' vocabulary learning. Likewise, McCarthy, M. (1990); Walters, J. and Bozkurt, N. (2009) explains the learning logs or vocabulary notebooks can be utilized as learning tools to promote EFL students' vocabulary acquisition.



Figure 4. Sample of learning logs and flashcards from the EFL university students in the fundamental English reading course

In summary, based upon the results of the current study, the EFL undergraduate students had significantly improved their vocabulary knowledge after exposed to the out-of-class instructional media. The students also reflected positively toward the instructional media. Consequently, it can be concluded that the instructional media integrating songs facilitated the enhancement of students' vocabulary knowledge. Nevertheless, only one student (Student T) still preferred to study in the classroom with the teacher because of the inability to control his/her own learning. Therefore, the presence of teachers was still important, especially for the low-achievement language learners who still need support in learning. Teachers should follow up learners, monitor learning progress, and provide supportive feedback to facilitate EFL students' learning process both inside and outside of the classrooms' contexts.

Implications and Future Research Suggestions

The results of this study will be useful for or instructors and educational media developers. The implications are mentioned in this part. Firstly, apart from being used by autonomous learners, the developed instructional media can be used by teachers in English language classes to teach not only these types of topics: vocabulary, phrases, or idiomatic expressions in daily conversation, standardized tests, and academic fields, but also the other vocabulary topics. For example, for those students majoring in Hotel and Tourism, it would be an advantage to study meaningful vocabulary terms and expression used in hotel and tourism industry. In addition, the basic elements (such as roots and affixes) used to decode unknown vocabulary should be informed. Secondly, since the findings in the present study revealed that students could practice guessing the meanings of the words from lyrics and context clues from the instructional media, the components in the instructional media such as lyrics and visual images can be useful sources for students to practice the English language and visual literacy. As the visual literacy is one of students' important skill for the 21st century, teachers should support and provide an opportunity for learners to practice an interpretive skill from visual texts such as pictures, graphic, or infographic. Thirdly, the songs and exercises in this instructional media can be used as learning resources for students to practice English pronunciation. Teachers or instructional developers can utilize the processes of developing instructional media to design learning materials to teach phonetics and phonology (e.g. consonant sounds, vowel sounds, stress, and intonations). Finally, the present study will be a guideline for teachers to integrate out-of-class activities with English language learning and develop an out-of-class instructional media in the other courses (e.g. English through Songs or English through Media). To support learner autonomy, both online and off-line educational technology should be developed and applied in the blended-learning practice which would be advantages for students in today's global society.

The recommendations for further studies based on the study were described in this section. First, the students in today's world are digital native—they were born with cutting-edge technology; they have fairly digital literacy skill. To fulfill the students' needs and foster their learning autonomy, an online version or application of the instructional media should be developed so the students could access the lessons from many types of electronic devices (such as a computer, tablet, or mobile phone). The other types of the instructional media (such as digital gameplay, mobile-assisted language learning, and Visual reality (VR) language learning) should also be developed to support the EFL learning in the next study. Second, even though the developed instructional media enhanced students' vocabulary knowledge and the majority of the students was satisfied with the media, the present study did not assess students' inquiring mind and vocabulary learning strategies in CALL environment thoroughly. Therefore, the focus on these aspects still needs to be investigated.

Conclusions

This study reveals that the developed out-of-class instructional media created by teachers were very effective and can help enhance vocabulary knowledge of EFL interdisciplinary students. The study also highlights the three main aspects that had assured the effectiveness of the instructional media and enhanced students' vocabulary knowledge: core components and features in the instructional media, instructional design approach, and learning log. The implications for EFL instructors and instructional media developers in higher education to enhance students' vocabulary knowledge were also proposed in the study.

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