#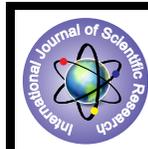 Learning the Vocabulary of English as a Foreign Language without Using Japanese Translations: A Step-by-Step Approach for Beginners

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ABSTRACT *This study presents a new step-by-step picture-based no-Japanese-translations approach to acquiring English vocabulary for beginner students. Four days of experimental lessons were conducted with 76 seventh graders at a Japanese public junior high school. Their pronunciation skills were assessed by a native English speaker. The picture-based-pattern experimental lessons resulted in higher scores than the no-picture ones. We found that even students without special needs have difficulty learning word pronunciation, spelling, and meaning simultaneously. The results of experimental lessons clearly indicate the need for a step-by-step approach to effectively teach English vocabulary to students in the public school classroom.*

Introduction

Currently, elementary school fifth and sixth graders in Japan need to acquire 35 credits in English (approximately 26 hours) in one school year. Prior to 2011, students only began formal English classes in grade 7. Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) recommended that elementary school students should become familiar with English. The students do not initially learn the English alphabet, phonics, and words (MEXT, 2008); they begin learning the alphabet as seventh graders (junior high school). This is called the seventh graders' gap (shock) in English learning.

The complexity of the correspondence between letters of the English alphabet, their names, and the sounds they represent, leads to the first major obstacle for beginner Japanese students learning English as a Foreign Language (EFL). Each character corresponds to one sound in Japanese (*Hiragana* and *Katakana*, but not *Kanji*). This makes it easier to recognize sounds and to master pronunciations. In contrast, English has several sounds per letter, making it more difficult to learn how to read and write. Japanese students are significantly affected by how individual English letters are pronounced. However, many of the spellings and pronunciations of basic English words do not match the way they are read when spelling out individual letters. Furthermore, the pedagogy for pronunciation instruction has remained unchanged since 1970 (Tejima, 2011).

This paper presents a new step-by–step picture-based no-translation approach to teaching EFL vocabulary in beginner classrooms in Japan, which may help students successfully overcome the challenge of learning English words. We conducted experimental lessons with 76 seventh graders at a Japanese public junior high school. The picture-based-pattern experimental lessons resulted in higher scores than the no-picture ones. It was found that even students without special needs have difficulty learning word pronunciation, spelling, and meaning simultaneously. The results clearly indicate the need for a step-by-step approach to effectively teach English vocabulary to students in the public school classroom.

Literature review

Literature is undecided about whether the use of students' native languages in EFL vocabulary instruction is effective. According to Gibson (1975), beginners can easily learn English vocabulary without using their first language. Learners can grasp a word's meaning by looking at a picture illustrating the word, without translations. However, Swan (1997) noted that teachers have great difficulty explaining word meanings without translations. Furthermore, Cook (2010) says that translation is effective

in language teaching. He explains that translation is essential to learning words, but learning words with pictures and gestures can help express the meaning of the words. He adds that there is a difference between pre-adolescent and post-adolescent learners—pre-adolescent learners lack the ability to think logically about language itself. They cannot organize their thoughts nor clarify their new knowledge well. Hasegawa (2007) mentioned that elementary English education is "affective," and junior high school English is "cognitive." He states that there is a gap between an elementary school and a junior high school in their teaching approaches. According to Fenson, Dale, Reznick, Bates, Thal, and Pethick (1994), word imageability ratings for nouns and verbs are correlated with the age of acquisition. Therefore, it is reasonable to suggest that the no-translation approach is suitable for pre-adolescent learners. Seventh graders are 12 or 13 years old, and this period is the beginning of adolescence.

First language acquisition and second language learning

What does it mean to "know a word"? A word has a sound, and the sound has a meaning. In written languages, individual letters or characters can symbolize sounds and meanings. Connecting the sound of the word to its meaning is an essential part of the process of acquiring the word. A child may learn the word "chair," for example, when her mother points to a chair and says " /tʃɛ́ər/ t" to the child.

First, the child connects the sound with the meaning, then pronounces the word, and then learns the word's spelling.

Learners must connect the sound to the meaning, and then pronounce the word; when they can do this, they can also spell the word on their own.

The general approach to learning new English words in Japan is that the teacher first shows flashcards to students (one side displays an English word, while the other side displays its Japanese translation). Thereafter, the students imitate the teacher's pronunciation of the word. Finally, in the next lesson, the students have a spelling test. The problem with learning words using the ordinary approach is that students have to learn an English word's sound, spelling, and meaning at the same time.

Purpose of this study

McDonough, Song, Hirsh Pasek, Michnik Golinkoff, and Lannon (2011) examined a hypothesis about the difference between noun and verb acquisition. They suggest that at the beginning of word learning, imageability might be a driving factor. Fukuda (2008) examined the learning effect of flashcards in enhancing students' vocabularies in his English lessons. He noted that the

flashcards approach is superior to the word list approach. EFL teachers in Japan try to teach new vocabulary without using translations. However, this approach has not been subject to a validity assessment; no rigorous testing of teaching vocabulary without providing Japanese translations has been performed.

Furthermore, during spring 2007, special needs education became part of Japan's school education program through the efforts of MEXT. The percentage of students with learning disabilities (LD) and attention deficit hyperactivity disorder (ADHD) is 6.3%. The number of these types of students is increasing according to MEXT (2003). Roldán et al. (2014) developed a multi-touch tabletop for people with cognitive disabilities and people with Autism Spectrum Disorder (ASD). This instrument shows an image depicting the user's feelings through a visual approach. In their study, the students who worked with this system performed better than the students who worked with paper. However, the teaching approaches for such types of students in an EFL class have not been studied in Japan.

In this study, we offer a new approach for all students, including students with special needs in EFL lessons.

This study aims to verify the effectiveness of learning English words step-by-step, in a way that is similar to first language vocabulary acquisition, and to examine the difference between lessons without Japanese translations and lessons using Japanese translations for learning English vocabulary items. Finally, the research also included a questionnaire designed to gauge students' attitudes to the proposed approach.

Experiment
We shall verify the differences between picture patterns and no-picture patterns. Moreover, we will examine the differences between students who are effective at learning English and students who are not. We categorized the students into two levels—advanced students and average students. Each class underwent four experimental lessons with both picture patterns and no-picture patterns. We ran a paired t-test and a Wilcoxon signed-rank test on the students' pronunciation assessment and their spelling test. After the lessons, each student was administered a questionnaire.

Participants
Participants comprised 76 seventh grade students at a public junior high school. We categorized them into two levels based on their mid-term test scores, with 43 advanced students and 33 average students. The average-students group included several students with a learning disability (LD); students who may have an LD, ADHD, ASD; and a student who has dyslexia.

Methods of experimental lessons
Method 1 employs a picture pattern without Japanese translations. Method 2 employs a no-picture pattern with Japanese translations. The goal of the two kinds of experimental lessons is to pronounce an English word correctly and to spell it correctly.

Procedure in the step-by-step approach
Table 1 presents the target words used in these experimental lessons. We chose the words from an English textbook that had not been used previously by students. The words in Lesson 1 and Lesson 2 are adjectives that describe human emotions. The words in Lesson 3 and Lesson 4 are noun words that the students will learn from the English textbook.

Table 1. The target words

lesson 1	pictures	sad	Angry	excited	tired	sleepy
lesson 2	no pictures	bad	Happy	nervous	bored	scared
lesson 3	pictures	oil	Radio	judge	stone	patient
lesson 4	no pictures	sea	Hotel	blood	river	parent

The students imitate the teacher's pronunciation of the word. Finally, in the next lesson, the students have a spelling test. Our new step-by-step approach makes the students take the pronunciation assessment before the spelling test.

Method 1: Picture pattern without Japanese translations

Step 1. Practice a word's pronunciation with a teacher
The students repeat the word after the teacher while looking at a picture depicting the word's meaning. The teacher pronounces each target word twice, including it in seven rounds. Therefore, the students pronounce each word 14 times.

Step 2. Self-directed pronunciation practice
The students pronounce each word while looking at the corresponding picture.

Step 3. Pronunciation assessment
A native English speaker then assesses their pronunciation one-on-one. The students pronounce the words while looking at the corresponding pictures. The assessment criteria are as follows:

A.（3 points）　　　Very good

B.（2 points）　　　Good

C.（1 point）　　　Needs more practice

Step 4. Memorizing the words' spelling
Homework includes memorizing the spelling of the target words. The teacher gives the students a worksheet with pictures and their associated spellings.

Step 5. Spelling test
We assessed the results of the spelling test to check whether each student could spell the words correctly. The students spell the words while looking at the corresponding pictures.

Method 2: No-picture pattern with Japanese translations

Step 1. Practice a word's pronunciation with a teacher
The students repeat the word after the teacher while looking at flashcards, which contain English words and their Japanese translations. The teacher pronounces each English word along with its Japanese translation. This is done twice for each word, including it in seven rounds. Therefore, the students pronounce each word 14 times.

Step 2. Self-directed pronunciation practice
The students pronounce each word while looking at the corresponding flashcard.

Step 3. Pronunciation assessment
This step is the same as in Method 1. The students pronounce the words while looking at their Japanese translations.

Step 4. Memorizing the words' spelling
Homework includes memorizing the spelling of the target words. The teacher gives the students a worksheet with the English words, their associated spellings, and their Japanese translations.

Step 5. Spelling test
The students spell the words while looking at their Japanese translations.

Results
Results of the pronunciation assessment
We would like to verify the differences between the picture pattern and the no-picture pattern. The scores of the average-stu-

dents group conformed to the normal distribution in the results of the pronunciation assessment and, therefore, we ran a paired t-test. In contrast, the scores of both the advanced-students and the all-students groups did not conform to the normal distribution. Therefore, both groups were compared via a Wilcoxon signed-rank test.

The results are presented in table 2. They show that the scores of the pictures pattern were statistically significantly higher than those of the no-picture pattern for each group (the average-student group P = 0.005; the advanced-students group P = 0.017; all students P = 0.001)

Table 2. Results of the statistical analysis of pronunciation assessment

class	n	P-value
Average	33	0.005
Advanced	43	0.017
Total	76	0.001

Results of the spelling test
The spelling test scores of the average-students group conformed to the normal distribution; therefore, we ran a paired t-test. However, both the advanced-students and the all-students groups' scores did not conform to the normal distribution. Therefore, both groups were compared via a Wilcoxon signed-rank test. The results are presented in table 3. They show that there is no statistically significant difference between the picture pattern and the no-picture pattern for all groups (the average-students group P = 0.795; the advanced-students group P = 0.988; all students P = 0.887).

Table 3. Results of statistical analysis of spelling test

class	n	P-value
Average	33	0.795
Advanced	43	0.988
Total	76	0.887

Results of the questionnaire
After the four days of experimental lessons, we conducted a survey to determine which approach is better for the students.

Table 4 displays the results of the questionnaire. We see from table 4 that the average-level students prefer the picture pattern more than the advanced students do. Furthermore, 69% of the students in total prefer the picture pattern.

Table 4. Results of questionnaire: Which approach do you think is better?

class	Pictures	No pictures	I don't know.
Average	76%	17%	7%
Advanced	62%	14%	24%
Total	69%	15%	16%

Table 5 also displays the results of the questionnaire. It shows that 80% of the advanced students and 90% of the average students stated that knowing the pronunciation leads to better spelling recall. Furthermore, 85% of all the students find it easier to remember the spelling when they can pronounce the word.

Table 5. Results of questionnaire: Is it easier to remember the spelling when you can pronounce the word?
6: I strongly agree.

5: I agree.

4: More likely than not.

3: I disagree.

2: I strongly disagree.

1: Never.

Class	6	5	4	3	2	1
Average	17%	38%	35%	5%	0%	5%
Advanced	12%	35%	33%	10%	0%	10%
Total	15%	36%	34%	7%	0%	8%

Results and discussion
Japanese translations of English words were not shown to the students in the picture pattern learning here. Students might misunderstand word meanings on this approach. For abstract words, possibilities of misunderstanding increase. Teachers find it difficult to explain an abstract word's meaning without translation. Therefore, the no-translation approach might be suitable for beginners and younger pre-adolescent learners in EFL.

Table 4 shows that the average students prefer the picture-based approach. Table 2 shows that the picture-based approach resulted in a better performance than the no-picture approach, especially for the average students. We infer that the students with special needs are not effective at reading and writing, but they can easily understand by using the visual materials.

In this study's questionnaire, some students said that they would like to listen to the word's pronunciation more. Students clearly need more time to listen to pronunciation and practice it. We suggest using a computer program that would play the word's pronunciation when students click the image picture of that word. This program would allow students to listen to words' pronunciations as much as they liked before the pronunciation assessment tests.

Moreover, most of the students are in favor of taking the pronunciation assessment test before the spelling test. However, testing each student consumes too much time. Therefore, computer programs that assess students' pronunciation are also needed.

In this study, we did not include the pattern without our step-by-step approach. Thus, we need to verify the differences between the step-by-step approach and the traditional approach.

Conclusion
This study suggested a new picture-based step-by-step approach to teaching English vocabulary to Japanese beginner students through a technique that eschews Japanese translations. One of the guiding ideas of this study was that learning English words is difficult for Japanese students because they rely on the names of individual letters in English words when they are learning the pronunciation of these words. Our proposed approach tested here removes this difficulty by first practicing meanings and pronunciations, and adding the spelling later. We found no significant difference between the two approaches in the spelling test results (although the picture-based pattern resulted in higher pronunciation scores than the no-picture pattern), which suggests that the picture-based approach may be at least as effective as the translation, no-picture approach. However, the post-study questionnaire revealed the advantage of the picture-based approach: most of the participating students found that practicing the pronunciation of a word while looking at its picture made it easier to subsequently memorize the word's spelling; this can significantly alleviate students' stress when learning English vocabulary. Thus, the results indicate the importance of the picture-based step-by-step approach for effectively teaching

English vocabulary to Japanese public school students including the students with the special needs.

In future research, we plan to develop computer programs allowing students to acquire pronunciation through self-study. Such computer programs would help them be more proactive in learning English vocabulary. One of our goals is to help students with dyslexia and learning disabilities. Although we did not focus on such students in this study, an approach to vocabulary learning for their use is clearly needed in the Japanese English teaching system, and the picture-based no-translation approach proposed here may help them too.

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