

Recalling Foreign Vocabulary Words among Learners of ESL

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Abstract

The present study replicated the experiment of Carpenter and Olson (2012) where the effect of picture and English word translation on recall of foreign words (Swahili) was investigated among bilingual learners whose second language is English. A 2 X 2 experiment was designed where Swahili words were presented involving four conditions: (1) picture with English word, (2) picture with the Swahili word, (3) no picture and only English-Swahili word pairs, and (4) no picture and only Swahili words. The results showed that the main effect of word translation was significant where Swahili words were recalled better when paired with an English translation, $F(1, 59)=121.69, p<.001, \eta=0.83$. The effect of pictures was not significant which did not support the picture superiority effect. The present study highlights the extension of the word association model for a foreign language and L2 link.

Key words: word recall, learning foreign words, ESL

Introduction

There are several studies indicating ways to teach foreign words to learners. An example of a widely used approach would include teachers teaching grammar-translation approach by which language is learned through rule memorization and through repetition (Beacher & Thuy, 2011). For beginner students learning a foreign language, the foreign word is taught by illustrating the words through pictures and diagrams (Griva, Semoglou, & Geladari, 2010). The use of pictures to facilitate better recall of words is supported in the picture superiority effect of Paivio and Csapo (1973). In picture superiority effect, concepts are much more likely to be remembered experimentally if they are presented as picture rather than as words (Nelson, Reed, & Walling, 1976; Paivio, 1971; Paivio, 1976).

There are several experiments that support the picture superiority effect. For example, in a study by Deason, Hussey, Budson, and Ally (2012) that among older adults with probable amnesic mild cognitive impairment, hit rates of recall was more superior for words with pictures. In another study by Hockley and Bancroft (2011), they still demonstrated that the picture superiority for associative recognition is still observed when subjects have correctly identified the individual items of each pair as old. In another study by Stewart, Stewart, Tyson, Vinci, and Fioti (2004), they found that picture superiority effect was even more powerful than serial position effect in group recall tasks.

However, another set of studies indicate that there are no significant difference in the recall of words with pictures and English translations. For example, Lotto and de Groot (1998) contrasted word learning and picture learning. In word learning, participants were

shown the foreign word (Dutch) with the translation (Italian) called as the Dutch-Italian word pair. The picture learning presented the foreign word (Dutch) with a corresponding picture (picture-word stimuli). The participants are all Italian. The result showed that word learning was higher on test scores than picture learning. Their results did not support the picture superiority effect. They further explained that an L1-L2 matching provides a better opportunity for acquiring L2 words than picture-L2 matching. Their findings support the word association model (Chen, 1990) where words are represented in separate stores: The lexical representation stores the word forms while the conceptual representation stores the meaning. Two languages are represented in two separate lexicons. Furthermore, the word association model proposes that form representations of the L2 are connected directly to the L1 making L2 easily accessible. The better performance in the L1 L2 pair are explained by the direct connection of the two representations gaining easy access to the L2. This postulate is tested in the present study where foreign words are matched with the L2 among bilinguals. However, the word association model proposes an L1 and L2 connection and not between an L2 and foreign language (FL) among bilinguals.

Given the findings of the picture superiority effect, one notable study by Carpenter and Olson (2012) tested whether new words in a foreign language are learned better from pictures than from native language translations. They used Swahili words in their experiment as the foreign language. They conducted four experiments in their study and saw the apparent lack of picture superiority effects in foreign language vocabulary learning. In Experiment 1, they manipulated Swahili words encoded with pictures vs. English translations, and free recall of pictures vs. English translations, or cued recall of Swahili words from pictures vs. English translations. They found that free recall of English words were higher than cued recall of Swahili. Experiment 1 saw that the presence of picture did not help in the recall of Swahili words. In experiment 2, picture with the Swahili word and pictures with both English and Swahili words were compared across three phases of testing. It was seen that across the three phases of testing, the overconfidence in learning pictures with Swahili words was reduced. However, recall of Swahili words with pictures became better as compared to Experiment 1. In Experiment 3, the researchers removed picture superiority effect in the manipulation and overconfidence was also controlled through instruction (one group was given a warning and another group was not). They found that the group that was given no warning had overconfidence in learning picture-Swahili pairs than for the English-Swahili pairs. In Experiment 4, the same manipulations was done in the first two experiment but measures were added on the ease-of-processing heuristics: (1) Ratings on how easy it was to study the Swahili word from either the picture or English translation, (2) rating how easy it was to understand the Swahili word from the picture or English translation, and (3) rating on how easy it was to link the Swahili word to the picture or English translation. The result in experiment 4 showed that picture-Swahili pairs were consistently rated as significantly easier to study, easier to understand, and easier to link. The studies were consistent that pictures paired with Swahili words were not better recalled however, participants showed overconfidence in learning them to be better.

The Present Study

The present study is a replication of the experiment of Carpenter and Olson (2012) where two main effects and their interaction are investigated: The effect of word superiority and word association. This study only manipulated as presence and absence of picture to

test picture superiority effect. On the other hand, word association was manipulated where English-Swahili words were presented and only Swahili words with no translation to see the effect of the word association model proposed by Chen (1990).

The study included the absence of word superiority of two conditions in the interaction effect to test how potent the picture superiority effect is when its counterpart has the absence of picture. In the same way, word association effect was tested on its main effect when the other condition does not have a presence of association. Unlike in previous studies where the other variation of the experimental conditions also has an association.

Previous studies used English words as the participants' native language. In the present study, English words are the second language of the participants and the Swahili words are foreign and unknown. The experiment intends to investigate whether the same pattern of performance in recall will occur when word association is not between L1-L2 but rather L2-FL.

In the present study the measure is limited in the free recall of Swahili words because it was deemed to be a more optimum dependent variable than cued recall.

Method

Research Design

A 2 x 2 factorial design was used in the present study. Picture taste association was varied for groups with presence and absence of pictures. On the other hand, word association was varied on presenting Swahili-English word pairs (L1-FL) and only Swahili words. The dependent variable is free recall of Swahili words.

Participants

The participants in the study were 60 Filipino high school students (16 years old in their senior year in high school). These students are studying in a private school in the National Capital Region in the Philippines. They were rated from average to high in their English skills based on their English teachers marking for the current quarter for the school year. These participants are both competent in speaking and writing in Filipino (L1) and English (L2).

Materials

The study made use of a list of the 42 single syllable English nouns that were between three to seven letters taken from the original study of Carpenter and Olson (2012). The word frequency ratings are over 30 and concreteness ratings were over 500. The Swahili translation for each word was obtained from the original list in the experiment of Carpenter and Olson (2012). The 42 pairs of English-Swahili words were also matched with pictures for the group undergoing picture superiority effect. The pictures were colored mixed with drawings and realistic figures.

A test was given to the participants to enumerate the Swahili words that they have recalled. Higher scores reflect higher recall of Swahili words.

Procedure

The participants at the beginning of the experiment were informed that they would be learning Swahili words. They were encouraged to try their best to learn the Swahili words and later their memory for the words will be tested. The Swahili words with their corresponding pictures were presented in a computer flashed in a wide screen. The participants were divided into four groups having its own condition. The first condition involved the participants to view a picture with the corresponding English word and later on recalled the English word. Condition 2 involved participants viewing picture with the corresponding Swahili word and later on recalled the Swahili word. Condition 3 involved the participants to study only English-Swahili word pairs with no picture. Condition 4 involved participants to study only with Swahili words with no picture. The picture and English translations were presented at the center of the computer screen. The participants were tested on their recall in a sheet of paper after studying the stimuli.

Results

The main and interaction effects of word superiority and word associations were tested using a 2 Way Analysis of Variance. The means were later compared to show which condition showed higher recall.

Table 1
Two Way ANOVA Summary Table

Source of Variation	df	SS	MS	F
Picture superiority effect	1	3.26	3.26	0.38
Word association	1	1058.40	1058.40	121.69***
Picture superiority x word association	1	0.00	0.00	0.00
Error	56	487.07	8.70	
Total	59	1548.73		

*** $p < .001$

The results of the Two-Way ANOVA showed that only the main effect of word association was significant. The main effects of picture superiority and the interaction between picture superiority and word association was not significant.

When the means were assessed, the recall for Swahili words was significantly higher when the stimulus presented to the participants involved Swahili-English pairs ($M=11.77$, $SD=3.17$) than when Swahili words alone were presented ($M=3.37$, $SD=2.62$). The effect size for word association ($\eta=.83$) was large while a small effect size was obtained for word superiority effect ($\eta=.04$).

Discussion

The findings of the study highlight the effect of word associations involving translated foreign words in the performance on recall tests. The study also supports the lack of picture superiority effect on recall of foreign words. More specifically, the study

showed to have higher recall of foreign words when participants are shown an English word with the Swahili translation.

The main findings supporting the word association of L2-FL was consistent with the word association model espoused by Chen (1990). The difference in the word association in the present study is that it involves a foreign language associate (FL) while Chen's model is an L1-L2 pair. However, the same postulate applies as supported by the results of the study. FL is easily accessed when it is directly connected to ones L2. In case of the present study L2 would be the English language.

Given the findings in the present study, the word association could be expanded for the link between L2 and FL. When individuals have high levels of mastery on their L2, they are able to gain better access to a word associate to their L2 as in the case of a foreign language.

The findings of the present study will have implications to other bilingual models. For example, Kroll and Stewart's (1994) revised hierarchical model explaining that, as new foreign words are learned, their meanings are at first more strongly represented by native language translations than by underlying concepts. This proposition is partly true because one's second language might be as strong in terms of proficiency as ones native language where L2 can also facilitate learning and foreign language.

Insights on the present study for the L2-FL link directs future researchers to further build and understand how they operate especially among bilingual learners.

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