

## 科学研究費助成事業 研究成果報告書

平成 27 年 6 月 23 日現在

機関番号：21602

研究種目：若手研究(B)

研究期間：2013～2014

課題番号：25770206

研究課題名(和文) Improving English Listening and Reading Comprehension via Using Visuals

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## 研究代表者

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交付決定額(研究期間全体)：(直接経費) 900,000円

研究成果の概要(和文)：視覚からの情報の、リスニング、リーディング、語彙の記憶への影響を調査した2013年の研究では、これらが好ましい影響を与えることがわかった。特に視覚情報は語彙の記憶に最も大きな影響を与え、語彙リストが適切な絵を伴うと語彙の定義のみのリストより効果的であった。これを受け、2014年は視覚教材を作成し、実際の授業で使用した。特に、2013年の研究で効果の高かった語彙指導に使用したところ、大きな効果を上げた。

研究成果の概要(英文)：In 2013, experiments were conducted to test whether the extensive use of visuals in listening and reading improves students' listening/reading comprehension and memorization of vocabulary items. The results of the tests show that the materials with extensive use of visuals were better understood/memorized by participants. The largest effect of using visuals was found in the vocabulary memorization. When wordlists are provided with relevant pictures, students could remember them far better than when only the definitions are given. In 2014, class materials were developed and used in the English classes at UoA. Using visuals had the most positive effect on memorizing vocabulary items, so the visuals were most extensively incorporated in the teaching materials for introducing vocabulary items. In the lecture materials for English courses, relevant visuals were incorporated for new vocabulary items and also for listening and reading, and they were effectively used in English classes.

研究分野：Second Language Acquisition

キーワード：English education Visual English listening English reading English vocabulary

### 1. 研究開始当初の背景

It is very common for Japanese learners of English to focus on translating the meanings of words during the listening and reading of English instead of trying to grasp the general or key ideas described. During the reading, many English instructors point out that the reading speed of Japanese students is very slow due to their effort to do careful reading using dictionaries. While it is more important to find out the main ideas in texts, students rather spend most of their reading time translating English sentences into their native language Japanese, focusing on meanings of individual words. Such reading style is attributable to the habit they have developed as they prepared for the university entrance exam. Such reading style results in not only slow reading speed but also poor understanding of the text; translating using a dictionary while reading make learners focus on individual sentences reinforcing sentence-by-sentence translation without analyzing the general topic and some important points in the text. By providing visuals in reading passages and also along with listening materials, students can focus more on the key ideas of materials by pressured less from not knowing certain vocabulary as they are given some hints of them through visuals.

It is well known that learners understand and remember things better when they are given materials both in visual and verbal. First, providing both visual and text help students learn better since different learners have different learning styles; one finds it more effective/interesting to learn when using visuals than texts and vice versa (Price 2004, Mupinga, Nora & Yaw 2006, Felder & Solomon 2007). Second, learners remember things better when presented with both visuals and texts. According to Dual Coding Activating both the left and right hemisphere of the brain using both visuals and texts have many advantages over using just texts in language learning. In addition, using pictures can help learners read fast (skimming) since they do not have to look up in the dictionary. When they are asked not to use the dictionary while reading as part of the skimming training, they feel very insecure and less confident. However, if they are given visuals, they can be relieved from the pressure that they do not understand certain vocabulary. Even without

previously stated pedagogical advantages, showing pictures itself can help students enjoy the reading in class. Especially for Japanese learners, who grow up reading Manga (given in both visual and text), it is easier to familiarize themselves with reading if it is given in both forms of representation, and they become more motivated in engaging themselves in reading.

### 2. 研究の目的

The purpose of this project is to improve the 1) listening and 2) reading comprehension as well as the 3) memorization of English vocabulary by effectively providing pictures corresponding to 1) specific situations and 2) the meanings of words used. The ideas of using pictures in teaching vocabulary and teaching reading are similar to each other, but showing pictures in reading can bring about much more positive results in many different respects compared to using pictures in teaching vocabulary. Additional to those previously mentioned results—improving the speed and comprehension, learners can better understand the vocabulary since they are given in the context (i.e., understanding the usage better) and remember them better. Using pictures while listening is often used when young learners acquire their native language, but it can be similarly effective in adult learners' learning a second language.

In 2013, the effectiveness of using visuals in L2 listening and reading was tested through examining and comparing the two classes of UoA. Based on the results gathered in 2013, teaching materials were developed in 2014 for teaching listening and reading with visuals.

### 3. 研究の方法

In 2013, based on the results of the pilot study, further experiments on how visuals during the reading affect the comprehension of written materials and memorization of English words was conducted. Forty-four students (two groups of students enrolled in two different sections of English classes participated in this experiment.

Based on the results of experiments conducted in 2013, listening and reading class materials were developed in 2014. Teaching materials will be incorporated in Moodle—the current e-learning software

platform at UoA. Materials could also be used purely online outside the classroom if the materials are developed in a way that can be managed by learners without the help of instructors.

#### 4. 研究成果

##### (1) Experiment in 2013

The research questions of the experiment conducted in 2013 were the following. 1) Do visuals in reading improve reading comprehension? 2) Do visuals in reading help students memorize vocabulary better? Forty-four university students in two English classes (22 in each section) were provided with four reading passages with two versions (with pictures vs. without pictures). Table 1 below summarizes different combinations of passages for two sets of materials used.

Table 1. Two sets of passages

	Group 1 (22 students)	Group 2 (22 students)
Passage 1	No pictures	+ Pictures
Passage 2	+ Pictures	No pictures
Passage 3	No pictures	+ Pictures
Passage 4	+ Pictures	No pictures
	SET A	SET B

After reading each passage through a computer monitor, students participated in 1) an immediate comprehension test (5 comprehension questions: 4\*5=20 questions in total) and 2) a delayed vocabulary test (one-week interval\_10 vocabulary questions: 4\*10=40 questions in total).

The results of the immediate comprehension tests are shown in Table 2 below.

Table 2. Result of the comprehension tests

	Mean	Std. Deviation	N
ReadingP	4.500	1.7388	44
ReadingNP	4.693	1.3986	44

Comparing the scores of the two types of passages (with pictures vs. without pictures), we did not find any effects of visuals on reading comprehension. It could possibly be due to the level of reading passages were not appropriate for comprehension tests. Although the results do not suggest direct influence of visuals, participants anecdotally reported that the passages with visuals were much more fun and easier to understand. While the influence of visuals embedded in texts were not obvious, the influence of pictures on

vocabulary memorization was statistically significant as shown in Table 3.

Table 3. Results of the vocabulary test

	Mean	Std. Deviation	N
VocabP	6.0211	3.33595	44
VocabNP	5.2175	3.39584	44

The vocabulary items provided with visuals were memorized significantly better in a vocabulary test conducted a week later. The results support that learners remember vocabulary items better when they are provided with both verbal and visual information. It is not just that they remember these vocabulary items better, they can better understand the concepts and easily recall what is associated with them by being presented with relevant pictures. The experiment in 2013 confirmed that teaching materials with visuals can help students learn English better, especially with memorizing vocabulary items.

##### (2) Developing teaching materials in 2014

In 2014, class materials were developed and used in the English classes at UoA. The total of 48 Power Point presentations were created (12 presentations each for Listening & Speaking 1, Listening & Speaking 2 and Listening & Reading 4). All materials were shared with English learners by uploading them on Moodle. PDF versions of Power Point Presentations were uploaded to avoid the situation where the arrangement of pictures is shown differently depending on the setting of individual computers. Students could freely download all the materials for their review. As found in the results of experiments in 2013, using visuals had the most positive effect on memorizing vocabulary items, so the visuals were most extensively incorporated in the teaching materials used for introducing vocabulary items. In the lecture materials for Listening and Speaking, relevant visuals (e.g., photos, cartoons, symbols) were incorporated in the slides for new vocabulary items and also for the sentences they listen to during the listening session. Below are some examples of slides used for vocabulary (Figure 1) and listening comprehension (Figure 2).

Figure 1. Vocabulary learning with visuals  
: Example

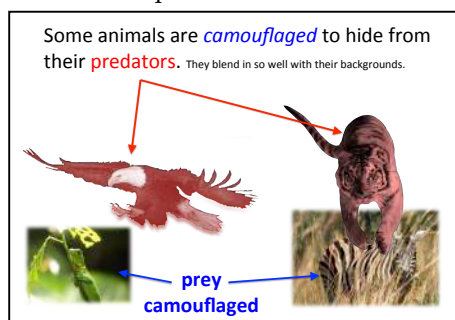
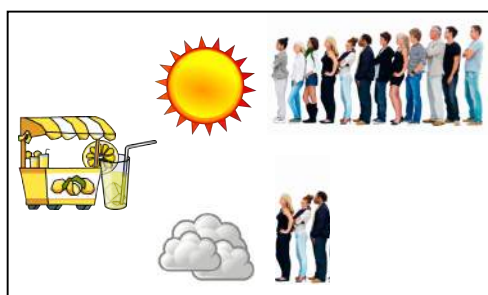


Figure 2. Visuals used during the listening  
: Example



“I suppose there will be more demand for lemonade on a hot, sunny day and less demand on a cool cloudy day.”



Students reported that they could more easily understand the listening materials with visuals. And also they said they could understand vocabulary items better.

Visuals were also used in the Reading class, which was a higher-level English course than the two Listening and Speaking classes. Therefore, visuals were more carefully chosen as many of the vocabulary items were abstract nouns and conceptual verbs, which are rather difficult to describe with pictures. Below are some examples of slides used for higher-level vocabulary (Figure 3) and reading comprehension (Figure 4).

Figure 3. Vocabulary learning with visuals  
: Higher-level vocabulary example



Figure 4. Visuals used during the reading  
: Example



As it was the case with Listening and Speaking classes, students seem to focus on the topic more with pictures and also their comprehension level improved with pictures.

At the conference (Summer Seminar 2014: Kansai University of International Studies 13th Conference on Language Teaching & Learning) where we introduced the idea of including visuals extensively in class materials and showed some sample slides, one English instructor commented that it would be much better if visuals are carefully chosen to best describe the words and the relevant situations in the listening and reading because there may be some cases where how instructors interpret pictures are different from the way students do. It was pointed out that it could be even more likely if the instructor has a cultural and linguistic background that is different from his/her students. Generational difference was pointed out as another factor. How people interpret pictures can be affected by his/her age, so teachers may not always understand what students see from certain images and vice versa. We reached the conclusion that the choice of pictures should be reviewed by a group of people including native speakers of Japanese and teaching assistants who are from the same generational background as students. After getting comments on cultural and generational difference in interpreting pictures, some modifications were made in teaching materials.

Related to the previous point is that it is also necessary to review and update the slides periodically even with those slides that are already reviewed as people's understanding on words and situations changes as the society changes; especially so in today's society, which is changing very rapidly. Ideas and concepts change at a fast rate, therefore, the matching visuals need to be updated as the society changes.

5. 主な発表論文等

〔雑誌論文〕（計 件）

〔学会発表〕（計 1 件）

Heo, Younghyon & Takako Yasuta. 2014.  
“Extensive Use of Visuals in Japanese  
EFL Reading and Listening Courses,”  
Summer Seminar 2014: Kansai  
University of International Studies 13th  
Conference on Language Teaching &  
Learning, Amagasaki, Japan, July 5  
2014.

〔図書〕（計 件）

〔産業財産権〕

○出願状況（計 件）

名称：  
発明者：  
権利者：  
種類：  
番号：  
出願年月日：  
国内外の別：

○取得状況（計 件）

名称：  
発明者：  
権利者：  
種類：  
番号：  
出願年月日：  
取得年月日：  
国内外の別：

〔その他〕

ホームページ等

6. 研究組織

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