

# Investigation of Two Types of Vocabulary Learning: Guessing Word Meaning from Context and Consulting the Dictionary

**Yoko Ichige**

## **Abstract**

This study explored a possible use of a self-made concordance for vocabulary learning. As a classroom activity, the students constructed their own concordances by reading a short story that included words unknown to them. The students looked up a half of the unknown words in the dictionary, while they excerpted all the sentences or phrases from the story that contained the other half of the unknown words so that they could infer the meaning of them without consulting the dictionary. A week later, the students' retention of the meaning of unknown words was tested. The test scores were statistically compared between the group of words that the students looked up in the dictionary and the group of words that they inferred based on the lists of sentences and phrases they excerpted. The results of comparison indicated that vocabulary learning using a self-made concordance worked more effectively than using the dictionary, particularly on the students with a higher test score.

## **Introduction**

One of the problems that the students in my reading course have is vocabulary size. As their average vocabulary level is low, they often have hard time handling the words that are beyond their level. They often stop reading when they come across a low frequency word. Moreover, the students usually choose books, based on their vocabulary level, that are easy to read. Accordingly, they rarely challenge themselves read books of a higher level. In general, English words are divided into high frequency and low frequency words with the criterion of 2000 word level (Nation, 2001). Nation explained an effective way of learning high frequency words

(1983), “The strategy of guessing words using context clues is particularly useful and is worth spending time on in class” (p. 17). As a technique to enhance this kind of strategy, use of concordance on computer program was recommended by Cobb (1997). In his study, he attributed the improvement in the subjects’ test scores to their efforts using concordances to guess the word meanings. The positive effects of use of concordances on vocabulary learning was emphasized by Carroll, who writes, “a way could be found to mimic the effects of natural contextual learning, except more efficiently; the way may be some version of concordancing” (Cobb, 1997, p.314).

In the present study, students tried two types of vocabulary learning to see which was more efficient for retention of the meanings of new words. The research question was:

Do the students better learn the meanings of new words by guessing the words using context clues or by checking the definitions of the words directly in the dictionary?

## **Methods**

### ***Course***

The present study was conducted in one of the regular lessons of an English reading course of a women’s university in Tokyo. The course was an elective course and was designed to develop the basic skills to read English, such as, understanding the organization of the passage, skimming and scanning, and making inferences about the situation and the feelings of characters in the story, *etc.* The lessons usually proceeded based on the course textbook, in which several kinds of reading materials were introduced with exercises about them. Besides the regular lessons in the class, the students were supposed to read English materials of their favorite kinds outside the class as a part of an extensive reading project and record their reading experiences in a journal along with their comments on what they read.

### ***Participants***

Fifty two female university students of two classes of the reading course were in the study (27 and 25 students respectively). About two thirds of the participants in each class were first-year students and the other third were in their second or third year. As the course was elective, their majors were different, which included, English literature, Japanese literature, art history, sociology, food science, or life

science. However, they seemed to have almost the same level of motivation and attitudes for the course as well as English reading ability. On average, their reading ability was low-intermediate, but they were motivated and have a positive attitude. The reading materials they chose for extensive reading were mostly the graded readers of 400 - 600 word level lower.

### **Materials**

The text: A short story from “Dublin People” (Oxford Bookworms Library, human interest), a book from the graded reader series of 1000 - word level, was chosen for the present study. The seventeen pages in the beginning part of the book were excerpted. From the excerpt, seventeen words were selected as the target words for the classroom activity. These words were chosen based on their frequency. Taking the participants’ vocabulary level into consideration, most of the words were taken from the frequency levels ranging from K1 to K4; three words came from K6, K9, and K17 respectively (Table 1). These words were thought beyond the participants’ vocabulary level and seemed unknown to them. In the classroom activity, nine of these words were to be looked up in the dictionary for their meanings, and the meaning of eight words were to be inferred from the context. Each word of the latter group appeared more than once in the excerpted text.

The worksheet: There were two sections. On page 1, the nine words were listed for dictionary use. On page 2, the eight words for guessing were listed in a table

Table 1

	Words for dictionary use (Group A)	Words for guessing (Group B)
Nouns	district (K1) biscuit (K2) ornament (K4) excursion (K9)	flat (K1) landlord (K2) bedsitter (K17)
Verbs	warn (K2) pretend (K2) disturb (K3)	assume (K1) struggle (K2) annoy (K2)
Adjectives	wicked (K3) discontented (K6)	exhausted (K3)
Adverbs	eventually (K2)	immediately (K2)

(Appendix 1).

The quiz: A quiz was developed to measure the participants' retention of word meaning. The quiz consisted of seventeen statements with a blank in each and a list of the seventeen words targeted in the class activity. Most of the statements were taken from the dedicated lexicon-VocabProfile with some modification, while others were written by the author of the present study so that the participants could easily guess the appropriate meaning for the blank in the statement. Each blank was to be filled in with one of the seventeen words (Appendix 2).

### ***Procedure***

The teacher (the author of the present study) briefly explained the reading material and the related activity the participants were to do. The reading materials and worksheets were handed out to the participants with instructions. Firstly, the participants looked up the meanings of the nine words on page 1 of the worksheet in the dictionary and wrote down the definitions they found. When most of the participants finished, the teacher asked nine participants to write the definitions on the board in the front and confirm the meanings as a whole class so that every participant could understand the correct meanings of the words equally. Secondly, the participants scanned the text for the eight words listed on the table on page 2 of the worksheet. Then, they listed in the table as many sentences including the target words as they could find. Thus, the participants made a kind of concordance of the target word. After most participants listed all the sentences they found and filled out the table, the teacher put the participants into groups of three to four and assigned one of the target words to each group. Each group reported the sentences including the target word and the meaning of that word they guessed from the context. Then, as a whole class, the teacher gave the comment about the group's work and the correct meaning of the target word, and made sure every participant got the meaning of the word.

One week later, at the end of the lesson, the quiz was administered to the participants. Students were given 15 minutes to complete the quiz.

### **Results**

The scores of the quiz were analyzed statistically using a paired-samples *t*-test between the two groups of target words (*Group A* : nine words for dictionary use

and *Group B* : eight words for guessing from the context, hereafter). The result was also analyzed by two-way ANOVA with the participants' major and score groups as the independent variables. Two major groups were the literature group consisting of the participants majoring in English literature, Japanese literature, Art and Sociology, and the science group consisting of those majoring Food science and Life science. As for the score groups, the participants were divided into a high-score group and a low-score group at the cutoff point of 7. The number of participants in all the groups was balanced enough for analyses. The quiz, itself, was also examined for its validity and reliability with the Rasch model analysis as well as factor analysis on SPSS.

Descriptive statistics showed that the mean scores for Group A and B were very low (2.79 and 2.06 respectively), that is, the quiz seemed too difficult for the participants (Table 2). The paired-samples t-test was significant at  $p. < .005$ . It revealed that Group A words were answered correctly by more participant than Group B words. Thus, the participants retained the meanings of the words they looked up in the dictionary better than the meanings of those that they inferred from the context.

To investigate how the characteristics of the participants influenced the quiz scores, two-way ANOVA was conducted with the quiz scores as the dependent variable (DV) and major and score groups as the independent variables (IVs). Firstly, the total quiz scores were used as DV. The difference between the two major groups as well as between the two score groups was significant at  $p. < .005$  and  $p. < .05$  respectively. However, significant interaction effect between major groups and score groups was not observed. Two-way ANOVA using Group A (dictionary use) scores as DV with major groups and score groups as IVs, and two-way ANOVA using Group B (guessing) scores as DV with major groups and score groups as IVs, were conducted. But, both analyses showed significant difference ( $p. < .005$ ) only between two score groups. There was no significant difference between the two major groups.

Table 2

Descriptive Statistics of scores for Group A and Group B words					
	Number	Minimum	Maximum	Mean	St.d
Group A (dictionary use)	52	0	7	2.79	1.829
Group B (guessing)	52	0	6	2.06	1.514

Table 3

Correlations between the items and the two factors			
Items		Factors	
		Factor 1	Factor 2
item 1	district (K1) (GA)	-.005	.741
Item 3	ornament (K4) (GA)	.186	.544
item 4	excursion (K9) (GA)	.037	.745
item 7	struggle (K7) (GB)	.545	.007
item 11	annoy (K2) (GB)	.563	.205
item 16	eventually (K2) (GA)	.698	.305
item 17	immediately (K2) (GB)	.549	.079

The quiz items were analyzed with factor analysis and the Rasch model analysis. Table 3 shows the two factors extracted by factor analysis on SPSS. The items on Factor 1 were mostly those from Group B (words for guessing) and were verbs and adverbs. The items on Factor 2 were those from Group A (words for dictionary use) and were all nouns. Accordingly, these two factors could be thought to represent part of speech or the type of vocabulary learning (dictionary use or guessing).

To investigate further these two factors in order to make clear what affected the participants' performance on the quiz (whether part of speech or types of learning?), the quiz scores were analyzed using the Rasch model analysis. The variance that was explained by the quiz was only 35.6%. This figure looked understandable considering the gap between the participants' vocabulary level and the quiz difficulty as demonstrated by the low mean scores. The quiz did not measure the participants' retention of word meanings with the satisfactory validity. The low validity was reflected on person separation and person reliability. While item separation (2.82) and item reliability (.89) were confirmed high enough for proper measuring, person separation (1.30) and reliability (.63) were not acceptable level. The gap between the participants' vocabulary level and the quiz difficulty was proved here again. The person map illustrated that there were not enough items to measure the ability of the participants in the low score group. From the standardized infit values, the participant No. 19, No. 32 and No. 25 were detected misfitting the model and having performed problematically. Three items, item 10 (*pretend* K2), item 15 (*wicked* K3) and item 16 (*eventually* K2), were also detected misfitting the

Table 4

Descriptive Statistics of two groups of participants on 2 factor items			
score groups	Number	Mean	St.d
factor 1			
low	34	0.85	0.821
high	15	2.07	0.799
factor 2			
low	34	0.88	0.844
high	15	1.67	0.9

model and proved to have worked problematically. These items were all from Group A, that is, dictionary use words. It is reasonable to exclude item 16 “eventually” from Factor 1. This seems to indicate that Factor 1 represents the type of learning by guessing rather than part of speech. In contrast, Factor 2 may represent the type of learning by dictionary use.

Considering all the implications from the analysis results above, Multivariate Analysis of Variance (MANOVA) was applied between the participants’ scores of the three items for Factor 1 (guessing) and those of the three items for Factor 2 (dictionary use) as the two dependent variables and high-score group and low-score group as the independent variable, with the misfitting participants excluded. The result was significant ( $p < .001$ ) to reveal that the two groups performed differently. High-score group got the higher mean score on Factor 1 items (*i.e.*, words for guessing) than on Factor 2 items (*i.e.*, words for dictionary use) on the contrary to the result of the *t*-test conducted in the beginning. With low-score group, the result was the same as the *t*-test, that is, they scored better on Factor 2 items though the difference was quite small (Table 4). This would possibly imply that vocabulary learning by guessing using the concordances that the participants themselves developed had some effects on the retention of word meanings particularly with high-score group.

## Discussion

Because of the limited time for the present study, which was designed and conducted in only three weeks, revisions should be made on some points, especially

in the methods section. One is the choice of the material and the target words for the class activity. As the participants in the present study had only low vocabulary levels, the material and the target words of lower level than those used in the present study should have been used, so that the quiz could measure the participants' retention of the target words more accurately. Another point is administration of the quiz. Only a delayed quiz was given to the participants one week later from the class activity. The class activity was done in one lesson and there was not enough time available for administering an immediate quiz. Consequently, the quiz could not be revised for the second use as a delayed quiz, and the gap between the participants' initial vocabulary learning and their scores on the delayed test was not accurately observed. Also a revision could have made the format of the quiz more suitable for the participants, such as, giving the definition of words in Japanese. The quiz format used in the study appeared too difficult for them to demonstrate their vocabulary learning. Lastly, the class activity of the present study should have been conducted over several class meetings. The students need more time to work with materials that would allow them to list the enough sentences that include the target words for guessing from the context. Therefore, to develop concordances of target words on their own and guess the meanings of target words, the participants may need much more time and materials, and should continue the activity over several class meetings or as an individual exercise outside the class.

However, the present study indicated some implications regarding the research question posed in the beginning, "Do the students better learn the meanings of new words by guessing the meaning of words using context clues or by checking the definitions of the words directly in the dictionary?" In the present study, the factors that affected the participants' performance on the quiz appeared to be the parts of speech of the target words and/or the types of vocabulary learning. Nation referred to the different acquisition rate of words depending on their parts of speech, and cited Rodgers as saying, "concrete nouns, verbs and adjectives were easier to learn than other parts of speech" (1985, p. 36). The target words for Factor 2 (dictionary use) were all noun and those for Factor 1 (guessing) were verb and adverb. The participants obtained a higher mean score for Factor 2 words (nouns) than for Factor 1 words (verbs and adverbs). Thus, it appears that nouns were learned more easily than verbs and adverbs. However, detailed analyses of the score and participants' performance implied that what characterizes two factors is the type of vocabulary learning rather than part of speech. Comparing the words in Group A



(words for dictionary use) and those in Group B (words for guessing) also supports this claim (Table 1). The nouns in Group B are British English and appeared unfamiliar to the participants who learn mostly in American English. Therefore, it can be safely said that the participants had familiarity and better retention with the nouns in Group A. There does not seem to be any difference between the verbs in both groups in terms of types or frequency. Therefore, as far as verbs are concerned, what differentiates the two factors might be the type of vocabulary learning. The answer to the research question can be as follows: The students appear to learn the new words better by guessing the words using context clues than using the dictionary, if their vocabulary level is high enough.

## References

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Appendix 1 (Worksheet)

What does it mean?

1. Look up the meaning of each word in the dictionary.

- district \_\_\_\_\_
- excursion \_\_\_\_\_
- ornament \_\_\_\_\_
- warn \_\_\_\_\_
- pretend \_\_\_\_\_
- disturb \_\_\_\_\_
- discontented \_\_\_\_\_
- wicked \_\_\_\_\_
- eventually \_\_\_\_\_

2. Find out the sentences including the words below and list them in the table.

flat _____	landlord _____
bedsitter _____	annoy _____
assume _____	struggle _____
exhausted _____	Immediately _____

Appendix 2 (Quiz)

**Name** \_\_\_\_\_ **Department** \_\_\_\_\_

**I.D.** \_\_\_\_\_

**Choose a word from the list for each blank.**

eventually immediately discontented exhausted wicked  
warn disturb struggle assume annoy pretend  
bedsitter excursion landlord flat ornament district

1. A \_\_\_\_\_ is an area of land.
2. A \_\_\_\_\_ is a person that has rooms and rents them to people.
3. An \_\_\_\_\_ is something to make something look beautiful.
4. The \_\_\_\_\_ is a short journey, especially by a group of people together for pleasure.
5. I shared a \_\_\_\_\_ with my friends when I was a college student.
6. I live in a small \_\_\_\_\_ near the station.
7. If you \_\_\_\_\_ to do something difficult, you work very hard to do it.
8. You \_\_\_\_\_ someone about something for a danger.
9. If you \_\_\_\_\_ something, you guess or believe something without enough information.
10. When you \_\_\_\_\_ that something is true, you know that it is not.
11. The noises \_\_\_\_\_ me.
12. Strong winds \_\_\_\_\_ the papers on my desk.
13. We were \_\_\_\_\_ by climbing up the hill.
14. He is \_\_\_\_\_ with his salary.
15. They are \_\_\_\_\_ to say such things.
16. She became a world-famous actress \_\_\_\_\_ .
17. He sat in the seat in front of me \_\_\_\_\_ .