L2 Vocabulary Acquisition Through Reading
—Incidental Learning and Intentional Learning

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Abstract

Basically, in L2 teaching and learning vocabulary through reading, there are two instructional techniques: incidental learning and intentional learning. This case study explores the role of reading in L2 vocabulary acquisition, and the effect of different vocabulary instructional techniques on the vocabulary learning of ESL students of different levels in Chinese universities. The results of the study yield following findings: 1) Both instructional treatments result in significant gains in learners’ receptive vocabulary knowledge, but the combination of the incidental and intentional learning instruction leads to greater vocabulary gains and better retention. 2) Students’ vocabulary size plays a decisive role in acquiring the productive aspect of the vocabulary knowledge.

Key words: L2 vocabulary acquisition; reading; incidental learning; intentional learning

1. Background

In L2 lexical teaching and learning, there are two types of vocabulary learning: incidental learning and intentional learning. Incidental learning is defined as the type of learning that is a byproduct of doing or learning something else; whereas, intentional learning is defined as being designed, planned for, or intended by teacher or students. In terms of vocabulary learning, incidental learning always means the approach of learning vocabulary through texts, working on tasks or doing other activities that are not directly related to vocabulary. In contrast, the intentional learning always focuses on vocabulary itself, and combines with all kinds of conscious vocabulary learning strategies and means of memorizing words. Vocabulary form, collocation, parts of speech are mainly the results of incidental
learning, while the sense of a word, meaning symbolizing and innuendo between words need intentional learning (Nation, 1990).

Although acquiring vocabulary incidentally through reading in context fosters an elaborate processing of words and facilitates its retention in memory (Huchin & Bloch, 1993; Nation, 1990; Schouten-Van Parreren, 1992), guessing, from context is a complex and often difficult strategy to carry out successfully. As many linguists put it, acquiring the vocabulary incidentally through reading has following limitations:

Firstly, students have less vocabulary than sufficient for successful incidental learning. Nation (1990) argues that successful guessing in context occurs when about 95% of the lexical items in a text are already known.

Secondly, inferring word meaning is an error-prone process. Even if one knows 98% of the words in a text, unless the context is very constrained, which is a relatively rare occurrence, or unless there is a relationship with a known word identifiable on the basis of form and supported by context, there is little chance of guessing the meaning correctly (Kelly, 1990).

Thirdly, inferring word meaning is likely to be a very slow process. Considering that many L2 learners in China have a limited amount of time to learn words, it is not perhaps the most efficient way to approach the task (Hulstijn, 1989).

Finally, inferring word meaning does not necessarily result in long-term retention. Even if a student has enough vocabulary and is exposed to a word in “pregnant” contexts, contexts that are rich with clues, acquisition does not automatically result at the first time. What’s more, because guessing from context fails to direct students’ attention to word form and meaning at the same time, relatively little learning occurs.

In a word, research on learning from context shows that incidental learning does occur, but it has limitations and prerequisites and learning is small and cumulative (Nagy, Herman & Anderson, 1985). This should not be seen as an argument that learning from context is not worthwhile. It is by far one of the most important vocabulary learning strategies and an essential part of any vocabulary learning program. However, focusing on incidental learning alone is not sufficient (Nation, 1990). For fast vocabulary expansion, however, more and more research points to the ineffectiveness of just using incidental vocabulary instruction and the need to accompany it with intentional learning (Haynes, 1993). For instance, the meta-analysis of nearly one hundred independent studies by Stahl and Fairbanks (1986) demonstrates that vocabulary intentional instruction is a useful adjunct to natural learning from context. Moreover, Paribakht and Wesche (1993) argue that contextualized learning through reading is effective but that contextualized reading plus explicit instruction is superior. Consequently, they concluded that although reading for meaning does contribute to vocabulary knowledge, a supplementary regime with specific vocabulary exercises produces more significant gains.
2. The Study

2.1 Research Purpose and Research Questions
The purpose of the present study was to explore the role of reading in L2 vocabulary acquisition and the effect of different vocabulary instructional techniques (incidental learning and intentional learning) on vocabulary acquisition of ESL students of different levels in Chinese universities.

The main question addressed here was whether the combination of incidental vocabulary learning technique (reading plus comprehension questions) and intentional vocabulary instruction technique (vocabulary enhancement exercises) was the most effective vocabulary learning style for Chinese non-English major university students. Those students lacked the natural language learning environment, and couldn’t acquire enough “comprehensible input” through extensive reading and listening within a four-semester English course.

Our specific research questions were:
1. Which instructional technique facilitates the learning of receptive aspect of vocabulary knowledge, incidental learning or the combination of incidental learning and intentional learning? Which instructional technique results in better retention?
2. Which instructional technique facilitates the learning of productive aspect of vocabulary knowledge, incidental learning or the combination of incidental learning and intentional learning?
3. Is vocabulary size a predictor of the receptive and productive vocabulary gain?

2.2 Research Method

2.2.1 Pilot Study
A pilot study was carried out to field-test the materials and procedures. 4 students of the same vocabulary size were chosen as the subjects. They were divided to 2 groups and took part in different learning sessions. After they had finished vocabulary exercises, they were required to complete the vocabulary pre-test, post-test, writing test, which was followed by the interview of the teacher. The purpose of the pilot study is to guarantee the reliability and credibility of the test. Based on the problems that arose in the pilot study, the materials and difficulties of the words were further revised.

2.2.2 Subjects
Two parallel groups from Grade One, majoring in civil engineering, participated in this study. There are altogether 93 subjects in the groups, ranging from 18 to 21 in age, who had just finished the national entrance examination. All the subjects are divided into two groups. The control group consists of 46 students, the experimental 47 students. They did not know the real purpose of the experiment and were informed that the experiment was about reading tasks and language learning.
2.2.3 Materials
This part presents the descriptions of texts, vocabularies, and exercises designed for this study.

Text Description
There were two reading passages, adapted for use in the experiment. Reading passage A “Going Home”, written by American journalist Peter Hamill, was selected from New Advanced Reading Skill Builder 1. Reading passage B “The Date Father Didn’t Keep” was also a narrative story. It was from Reader’s Digest (1975), written by Robert Zocks, ready for use in the incidental learning session. Reading passage B was a supplementary text to reading passage A, composed to present the target words again from the main text. The aim was to further expose students to the target words through reading (see Appendix A and B).

Vocabulary Description
Subjects of the experiment were high school graduates, who had just finished the national entrance examination. They were expected to have grasped at least 1800 words upon graduation from the high school. Therefore, except for target words, difficult words in the text were replaced by simple words. The aim of reducing the number of unknown words in the text is to free up the amount of cognitive space required to attend to the message, for tasks demanding greater mental effort or more decision-making use up more processing space (Nation, 1990).

26 target items were finally chosen from reading passage A “Going Home” and repeated in reading passage B. Three criteria of word difficulty were considered, when choosing the target words (see Appendix F). First, the vocabulary list in New College English Syllabus was consulted to determine the level of difficulty of words in the text. Second, target words should be of high information value and should bear rich inferring cues in the context. Thirdly, different categories of words should be explored.

Exercises Description
Different exercises were designed for different learning sessions. Accompanying comprehension questions were designed for the incidental learning session; whereas, explicit vocabulary exercises were designed for the intentional learning session. In the incidental learning session, there were two kinds of comprehension questions. Students were either asked to answer the comprehension questions based on reading passage A and reading passage B or asked to put the statements in the right order (see Appendix C).
In the intentional session, there were five kinds of vocabulary exercises, designed for the experimental group, namely, 1) Synonym; 2)Word-matching; 3)Blank filling; 4)Second-hand cloze; 5)Translation (see Appendix D).

2.2.4 Measures
Three measures were used to assess the effects of the different instructional techniques on vocabulary knowledge, including vocabulary size test, vocabulary multiple-choice test and writing test.
Vocabulary Size Test
Vocabulary size test was used to measure the vocabulary size of the subjects, so that subjects could be divided into 2 groups based on the mean score: those subjects above the group medium were categorized as students of “high” vocabulary level and those below the medium as “low”.

100 words were chosen from every 42 words from the vocabulary list in New College English Syllabus. The vocabulary items were of medium difficulty and different categories of words were explored in the test. The subjects were required to give the Chinese meaning of each vocabulary item within 10 minutes (see Appendix E).

Vocabulary Multiple-choice Test
There were 26 target items in the vocabulary MC test. Each of them consisted of a stem, a key, three distracters and a “don’t know” option. Each of the distracters was semantically close to the target item.

Example of multiple-choice items:

| vanish v. | A) 上升 | B) 下降 | C) 出现 | D) 消失 | E) 我不知道 |

Writing Test
In the writing test, students were required to write a summary of the story based on reading passage A within 30 minutes. These 16 words, which demanded keen awareness to its productive vocabulary knowledge, such as grammatical collocation, associations, appropriateness and etc., were chosen from 26 target words in the vocabulary MC test. Students were probably familiar with the meaning of those words, but may not be sure of how to use it correctly and appropriately in the writing. Besides, Chinese meaning was provided to each of the 16 words, reducing the possibility that students’ incorrect use of the word was attributable to the fact that they didn’t know or were not quite sure of the meaning of the word. Credit would be given to the grammar correctness and appropriate use of the word in the writing (see Appendix G).

2.2.5 Procedure
Both of the two groups were required to complete the vocabulary size test, pre-test, post-test, writing test, and the delayed post-test. The difference lied in the nature of the treatment.

Treatment
In the first stage, students both in the control group and experimental group were asked to read passage A and then answer the questions based on the passage A. In the second stage, subjects in two groups had different tasks. Students in control group were required to read another passage(B) and answer the questions based on the passage B. Which is called incidental learning, because the focus is not on the learning of words. By contrast, students in experimental group don’t have to read another passage; instead, they were asked to do some explicit vocabulary exercises relevant to passage A, which is called
intentional learning, because subjects’ focus is on the learning of words.

Two different treatments cost the same amount of class time: approximately 55 minutes. The same vocabulary multiple-choice test was conducted three times: before the learning session (pre-test), immediately after the learning session (post-test), and one week after the learning session (delayed post-test). The target words tested in the vocabulary size test and vocabulary MC test were identical, but ordered differently in order to get reliable statistics. Moreover, during the whole experiment, learners were forbidden to use any kind of dictionary, whether it is a traditional dictionary or an electronic dictionary.

3. Data Analysis

All the data were collected input into the computer, and then given paired t-test through SPSS 11.5 software.

**Question one:** Which instructional technique facilitates the learning of receptive aspect of vocabulary knowledge, incidental learning or the combination of incidental learning and intentional learning? Which instructional technique results in better retention?

<table>
<thead>
<tr>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>48.77</td>
<td>9.93</td>
<td>.29</td>
<td>42</td>
<td>.773</td>
</tr>
<tr>
<td>Control</td>
<td>49.30</td>
<td>9.31</td>
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</tbody>
</table>

Table 1 shows that there is not much difference between the mean score and SD of both groups in vocabulary size test, indicating that students as a whole in the experimental group and control group have performed equally well in the vocabulary size test. Besides, since $t = 0.29 (P > 0.05)$, there is no significant difference between the mean score of both groups in vocabulary size test. Therefore, from a statistical point of view, it can be said that the students in both groups are of the same level at the very beginning of the experiment.

<table>
<thead>
<tr>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>10.12</td>
<td>3.12</td>
<td>.363</td>
<td>42</td>
<td>.719</td>
</tr>
<tr>
<td>Control</td>
<td>10.37</td>
<td>3.21</td>
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</table>

Table 2 shows that students in both groups recognized almost 10 words before the instruction, and there is also no difference between the SD of the two groups. In addition, the most important statistics that would indicate there is no significant difference between both groups is the $t = 0.36 (P > 0.05)$. Therefore, it can be said that the students in both groups are of the same vocabulary size before the instruction.
From Table 3, we can see that the growth of the receptive vocabulary in both two groups is not identical, with the improved mean score (14.14) of experimental group considerably higher than that (8.91) of control group. Besides. Since \( t = 6.91 \) (\( P < 0.05 \)), there is a significant difference between the improved mean scores of the two groups.

Since \( t = 3.68 \) (\( P < 0.05 \)), there is a significant difference between the lost vocabulary of the two groups. In addition, from Table 4, it is obvious that control group has forgotten 2 more words than the experimental group one week later after the instruction.

**Question 2:** Which instructional technique facilitates the learning of productive aspect of vocabulary knowledge, incidental learning or the combination of incidental learning and intentional learning?

From Table 5, we can see that students in the experimental group outperformed the students in the control group since that the mean score (12.93) of the experimental group is much higher than that (7.53) of the control group. In addition, since \( t = 8.21 \) (\( P < 0.05 \)), there is a significant difference between the mean scores of the two groups in the writing test.

**Question 3:** Is vocabulary size a predictor of the receptive and productive vocabulary gain?

Table 3. A comparison of the receptive vocabulary gain of both groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>14.14</td>
<td>3.43</td>
<td>6.91</td>
<td>42</td>
<td>.000</td>
</tr>
<tr>
<td>Control</td>
<td>8.91</td>
<td>3.99</td>
<td></td>
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</table>

Table 4. A comparison of the receptive vocabulary retention of both groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>.12</td>
<td>2.15</td>
<td>3.68</td>
<td>42</td>
<td>.001</td>
</tr>
<tr>
<td>Control</td>
<td>2.05</td>
<td>2.86</td>
<td></td>
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</table>

Table 5. A comparison of the mean score of both groups in writing test

<table>
<thead>
<tr>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>12.93</td>
<td>2.61</td>
<td>8.21</td>
<td>42</td>
<td>.000</td>
</tr>
<tr>
<td>Control</td>
<td>7.53</td>
<td>2.60</td>
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</table>

Table 6. A comparison of the mean score of students (high/low) in vocabulary size test

<table>
<thead>
<tr>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental (High)</td>
<td>57.12</td>
<td>8.14</td>
<td>8.83</td>
<td>23</td>
<td>.000</td>
</tr>
<tr>
<td>(Low)</td>
<td>41.45</td>
<td>4.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control (High)</td>
<td>56.38</td>
<td>5.27</td>
<td>7.28</td>
<td>20</td>
<td>.000</td>
</tr>
<tr>
<td>(Low)</td>
<td>42.29</td>
<td>7.05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Since t = 8.83 and 7.28 (P<0.05), there is a significant difference between the vocabulary mean scores of the students of high level and low level in both groups, indicating that the vocabulary mean score of students of high level (M=57.12/56.38) is much higher than that of students of low level (M=41.45/42.29) at the beginning of the experiments.

**Table 7.** A comparison of the mean score of students (high/low) in pretest

<table>
<thead>
<tr>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>11.04</td>
<td>3.44</td>
<td>1.43</td>
<td>23</td>
<td>.166</td>
</tr>
<tr>
<td>(High)</td>
<td>9.83</td>
<td>2.94</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(Low)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>10.66</td>
<td>3.37</td>
<td>1.68</td>
<td>20</td>
<td>.109</td>
</tr>
<tr>
<td>(High)</td>
<td>9.23</td>
<td>2.90</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(Low)</td>
<td></td>
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</tbody>
</table>

Since t = 1.43 and 1.68 (P>0.05), there is no significant difference between the students of the two levels. Therefore, from a statistical point of view, it can be said that the students of the two levels in both groups are of the same vocabulary size in terms of the 26 target words.

**Table 8.** A comparison of the receptive vocabulary gain of students (high/low)

<table>
<thead>
<tr>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>14.25</td>
<td>3.57</td>
<td>.41</td>
<td>23</td>
<td>.689</td>
</tr>
<tr>
<td>(High)</td>
<td>13.92</td>
<td>3.31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Low)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>9.61</td>
<td>4.14</td>
<td>1.10</td>
<td>20</td>
<td>.285</td>
</tr>
<tr>
<td>(High)</td>
<td>8.33</td>
<td>3.87</td>
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<td></td>
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<tr>
<td>(Low)</td>
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Since t = 0.41 and 1.10 (P>0.05), there is no significant difference between improved mean score of the students of the two levels, from which we can safely draw a conclusion that the students of low level in both groups, have improved their receptive vocabulary as many as those of the high level. In other words, students’ vocabulary size is not the key factor to determine the receptive vocabulary gain in both groups.

**Table 9.** A comparison of the mean score of students (high/low) in writing test

<table>
<thead>
<tr>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>13.00</td>
<td>2.79</td>
<td>.30</td>
<td>23</td>
<td>.771</td>
</tr>
<tr>
<td>(High)</td>
<td>12.79</td>
<td>2.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Low)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>9.33</td>
<td>1.43</td>
<td>3.83</td>
<td>20</td>
<td>.001</td>
</tr>
<tr>
<td>(High)</td>
<td>7.14</td>
<td>2.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Low)</td>
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</table>

In the experimental groups, since t = 0.30 (P>0.05), there is no significant difference between students of the two levels on the writing test and the mean score of the students of two levels is nearly the same (13.00/12.79). However, in the control groups, since t = 3.83 (P<0.05), there is a significant difference between the students of the two levels on the writing tests. Besides, the mean score of the students of the high vocabulary level is 2 points higher than students of low level.
4. Discussion

Since we adopt an Experiment & Control Groups Pre-test—Post-test design, and from the Table 1 and Table 2, we know that the subjects in this experiment are of the same language level at the very beginning, the errors within subjects are generally under control.

4.1 Students’ Receptive Vocabulary Gain and Retention

The results of the study (see Tables 1-4) indicated that both instructional treatments resulted in significant gains in learners’ receptive vocabulary knowledge, but the combination of the incidental and intentional learning instruction led to greater vocabulary gains and better retention. It seems reasonable to explain the significantly different receptive vocabulary gain and retention with two theories: “Depth of Processing” theory and “Involvement Load” theory.

“Depth of Processing” Theory

The more cognitive energy a person expends when manipulating and thinking about a word, the more likely it is that he will be able to recall and use it later. This idea was first formalized as the “Depth of Processing Hypothesis” (Craik & Lockhart, 1972), which has been applied to several vocabulary studies as the theoretical basis for explaining how different levels of cognitive processing are engaged in as a result of the demands of a task (Brown & Perry, 1991; Stahl & Fairbanks, 1986).

“Involvement Load” Theory

“Involvement load” is defined here as the combination of the presence or absence of the involvement factors: need, search, and evaluation. The model predicts that task effect does not depend on the model as such, i.e., whether the task is aural, oral or visual. What matters is the motivational-cognitive dimensions of the task, i.e., its involvement load. Higher involvement in a word induced by the task will result in better retention (Batia & Jan, 2001).

It is noted that language acquisition cannot be expected unless students notice the form, understand the meaning and establish the form-meaning mapping between them. Through the incidental learning, inferring the meaning of the word fosters the elaborate processing of the word, however, this process offers no guarantee for the retention of the link between the word’s form and its meaning. In other words, guessing from context does not necessarily result in long-term retention. This finding verifies the study of Parry (1993), Mondria and Wit de-Boer (1991). As a result, even if they happen to acquire a word incidentally from reading a passage, it is likely that it will be quickly forgotten after a week, as indicated in Table 4 that students in the control group forgot more vocabulary items through incidental instruction, than those in the experimental group who had done the explicit exercises. In contrast, in the instruction that involves both methods, answering the accompanying comprehension question (the incidental learning) enables the students to acquire the meaning of a word. But only incidental learning is not sufficient for retaining a word (Nation, 1990). By doing the explicit exercises, learners are asked to
manipulate words, relate them to other words and to their own experiences, and to justify their choices, so word associations are reinforced. Moreover, words practiced in a series of exercises are retained better than words inferred from context (Paribakht & Wesche, 1997), because these exercises help the students to be more certain in what they know about words and to be more ready for using them in production. By incorporating the exercises into the inferring activities, words will become more salient and students feel encouraged to engage in further exploration. Therefore, deeper level of semantic processing and a higher involvement load is required because words are encoded with elaboration (Craik & Lockhart, 1972).

In short, how well students remember the words depends on how deeply they process them. Incidental learning with no tasks is low-level processing and badly remembered; incidental learning plus comprehension questions is deeper and leads to better memory; working out the meaning of the words (incidental learning) and practicing them in a series of exercises (intentional learning) is the deepest level of processing and ensures the best memory.

4.2 Students’ Productive Vocabulary Acquisition

The results of the study (see Table 5) indicated that learners in the incidental instruction treatment acquired some words but their knowledge of many of these words tended to stay at the recognition level. By contrast, the words acquired in the reading plus explicit exercises treatment tended to stay at the productive level. Students, who had practiced the words in a series of explicit exercises, could effectively manipulate the words and put the target words into use correctly and appropriately in a writing test.

The reason lies in teacher’s focus. In incidental learning, the teacher’s focus is on general understanding of a text or on the meaning of a word, ignoring or paying less attention to the form of a word. However, recognizing the word meaning in the context is only one aspect of word knowledge. Knowing a word also involves many other aspects, such as grammatical patterns and collocation. It also includes how to use it in suitable situations and using the word to stand for the meaning it represents and being able to think of suitable situations for the word (Nation, 1990). In order to deepen the knowledge of these words, students, especially the beginners, sometimes need the guidance of the teacher to help them to “notice” such aspects of knowledge as the collocation and register and semantic relationships, because the generation of morphologically and syntactically appropriate forms comes from a conscious process (Nation, 1990). Without the teacher’s help, despite the great effort students spend on the learning, it is not likely for students to acquire the knowledge, nor do they have large amount of time to read extensively to learn it subconsciously. However, in intentional learning that involves explicit exercises, one of the teachers’ focus is to deepen the knowledge of the words, and draw students’ attention to the form of the words. For example, in the lesson, the trained instructor emphasized that the phrasal verb “object to” should be followed by a gerund or a noun rather than by a verb. Therefore, with the teacher’s help, students were very clear about the usage of the phrasal verb “object to” and could use it in the right situation in the writing test. In contrast, in the incidental
learning, although the majority of students know the meaning of the phrase “object to”, few students know how to use it. So without teachers’ guidance, morphological and syntactical errors usually occur.

4.3 Vocabulary Acquisition of Students of Different Levels
The result shows that the combination of the incidental and intentional learning instructional methods worked equally well for the students of two levels on receptive vocabulary gain and productive vocabulary gain. However, in the incidental treatment, the students of big vocabulary size and the students of small vocabulary size had nearly the same improved mean score of the receptive vocabulary knowledge, but with regard to productive vocabulary gain, a different picture emerged. Students of big vocabulary size did much better in the writing test than those of small vocabulary size, which showed that students’ vocabulary size was a decisive factor that affected their performance in the writing test.

Then a question arises as to why in reading plus explicit exercises instruction, students’ vocabulary size is not a key factor affecting the vocabulary gain, whether receptive and productive, and why in incidental learning instruction, students’ productive vocabulary gain rather than the receptive vocabulary gain will be affected by students’ vocabulary size.

In the reading plus explicit exercises treatment which involves not only the incidental but also the intentional learning instruction, the instruction is meaning-focused (incidental learning) as well as form-focused (intentional learning). With the teachers’ explanations of the target vocabulary, not only advanced students, but also poor students could recognize the words and become aware of the usage of the words through the explicit exercises and, in the meanwhile, put them effectively into use in the writing test, as long as they had paid attention to what teacher said in the class, so vocabulary size wouldn’t be a factor affecting the vocabulary gain, whether it is receptive or productive.

However, in the incidental learning treatment, although there were comprehension questions accompanying reading instruction, teachers’ focus was on the meaning of the words. Therefore, students of two levels were equally capable in recognizing the meaning of the words after the instruction (although the vocabulary gain is less than that in the reading plus explicit exercises treatment and is easily forgotten). But in the writing test, since the teacher did not deal with the form and usage of the words, it was students’ own task to acquire the vocabulary knowledge, such as the collocational and grammatical usage of a target word, so students’ vocabulary size began to play a decisive role in the productive vocabulary gain. Learners of bigger vocabulary size (usually, they are of higher language level) were more independent in study, and self-initiated than learners of small vocabulary size. They used a variety of strategies while learning and were more aware of the productive aspect of the word’s knowledge than the poor learners. In addition, they were more conscious of the semantic relationships between new and previously-learned L2 words and how to connect the new knowledge to the old (Nation, 1990). As a result, even without the teacher’s help, students of big vocabulary size could be more capable in acquiring the usage of the words and phrases (although less capable than the students in
the reading plus exercises treatment) than the students of small vocabulary size, who were more dependent on the teacher and did not know how to put them in use correctly in the production, if without the teacher’s help.

5. Conclusion

From the above analysis and discussion, we can know that given the same amount of time devoted to the two treatments, although reading for meaning appears to produce significant results in vocabulary acquisition, such reading supplemented with specific vocabulary exercises leads to the acquisition of even greater numbers of words as well as greater depth of knowledge. This suggests that although instruction makes a difference, more focused instruction is desirable to the Chinese college students when the learning period is limited and specific vocabulary outcomes are sought. What’s more, reading plus explicit exercises instruction results in better retention than incidental learning instruction. And students’ vocabulary size plays a decisive role in acquiring the productive aspect of the vocabulary knowledge.

Limitations and Suggestions

After careful examination, there are following two limitations of the study. 1) There are only 26 word items serving as the target word items to be tested in the study. If there were larger number of sample word items, the reliability of the study could be promoted. 2) Of all the 26 word items, most of the word items are “verbs”(13), and there is no single word item that is “adv.”, so the study could be better designed if it covered a variety of word item.

Further Research

It is important to bear in mind that the investigation was not concerned with extensive reading as it is generally understood. Thus the next step should be a longitudinal research project into the relationship between extensive reading and the learning of vocabulary by second language learners.

References

Reading passage A: (12 min)

Going Home

They were going Fort Lauderdale (地名)—three boys and three girls—and when they boarded the bus, they were carrying sandwiches and wine in paper bags, dreaming of golden beaches and sea tides as the gray, cold spring of New York vanished behind them.

As the bus passed through New Jersey, they began to notice Vingo. He sat in front of them, dressed in a plain, ill-fitting suit, never moving, his dusty face masking his age. He kept chewing (咀
the inside of his lip a lot, frozen into complete silence.

Deep into the night, outside Washington, the bus pulled into Howard Johnson’s (地名) restaurant, and everybody got off except Vingo. He sat rooted in his seat, and the young people began to wonder about him, trying to imagine his life: perhaps he was a sea captain, a runaway from his wife, an old soldier going home. When they went back to the bus, one of the girls sat beside him and introduced herself.

“We’re going to Florida,” she beamed, “I hear it’s really beautiful.”

“It is,” he muttered, as if remembering something he had tried to forget.

“Want some wine?” she said. He smiled and took a swig from the bottle. He thanked her and retreated again into his silence. After a while, she went back to the others, and Vingo resumed nodding in sleep.

In the morning, they awoke outside another Howard Johnson’s, and this time Vingo went in. The girl insisted that he join them. He seemed very shy, and ordered black coffee and smoked nervously as the young people chattered（唧唧喳喳的说）about sleeping on beaches. When they returned to the bus, the girl sat with Vingo again, and after a while slowly and painfully, he began to tell his story. He had been in jail in New York for the past four years, and now he was going home.

“Are you married?” She inquired.

“I don’t know.”

“You don’t know?” she blurted out.

“Well, when I was in jail I wrote to my wife,” he said, “I told her that I was going to be away a long time, and that if she couldn’t stand it, if the kids kept asking questions, if it hurt her too much, well, she could just forget me. I’d understand. No one would like to waist time on a prisoner of no prospects. I wouldn’t object to her getting a new guy, I said—she’s a wonderful woman, lovely graceful, really something—and forget about me. I told her she didn’t have to write me. And she didn’t. Not for the three and a half years.”

“And you’re going home now, not knowing?”

“Yeah,” he felt embarrassed. “Well, last week, when I was sure the parole was coming through, I wrote her again. We used to live in Brunswick, just before Jacksonville, and there’s a big oak tree just as you come into town. I told her that if she didn’t have a new guy and if she’d take me back, she should put a yellow handkerchief on the tree, and I’d get off and come home. Otherwise, if there was no handkerchief, forget it and I’d go on through.”


She told the others, and soon all of them were in it, caught up in the approach of Brunswick（地名）, looking at the pictures Vingo showed them of his wife and three children.

Now they were 20 miles from Brunswick, and young people took over（占据） window seats on the right side, waiting for the approach of the great oak tree. Vingo stopped looking, tightening his face, as if fortifying himself against still another disappointment.

Then Brunswick was 10 miles, and then five. Then, suddenly, all of the young people were up out of their seats, screaming and shouting and crying, doing small dances of joy. All except Vingo.

Vingo was stunned, looking at the oak tree. It was covered with yellow handkerchiefs—a20 of them, 30 of them, maybe hundreds, a tree that stood like a banner（旗帜） of welcome billowing in the wind. As the young people shouted, the old prisoner slowly rose from his seat and made his way to the front of the bus to go home.
Appendix B

Reading passage B: (14 min)

The Date Father Didn’t Keep

Robert Zocks

It happened in a beautiful Danish inn (small hotel), where English was spoken. I was with my father on a business-and-pleasure trip, and in our leisure (休闲的) hours we were having a wonderful time.

“I wish Mother were here,” said I.

“If your mother had come with us,” said father, “it would have been wonderful to show her around.”

He had visited Denmark when he was a young man. I asked him, “How long is it since you were here?”

“Oh, about thirty years. I remember being in this very inn, by the way. “ He looked around, remembering. “Those were good days…” He stopped suddenly, and I saw that his smile vanished. I followed his eyes and looked across the room to a woman who was setting a tray of drink before some customers. She might have been pretty once, but now she was fat and her hair was untidy, dressed in an ill-fitting clothes. Her smile couldn’t mask the tiredness. “Do you know her?” I asked.

“I did once,” he took a swig from the bottle.

The woman approached our table. “Drinks?” she inquired.

“We’ll have beer,” I said. She nodded and went away.

“How she has changed! Thank heaven she didn’t recognize me,” muttered Father, mopping his face with a handkerchief. “I knew her before I met your mother,” he went on. “I was a student, on a tour. She was a lovely young thing, very graceful. I fell madly in love with her, and she with me. The girl was deeply rooted in my mind.”

“Does Mother know about her?” I was caught up in father’s romance.

“Of course,” Father said. He looked at me a little anxiously, I felt embarrassed for him.

I said, “Dad, you don’t have to…”

“Your mother would tell you if she were here. I don’t want you wondering about this. I was a foreigner to her family. I was dependent on my father. If she had married me, she wouldn’t have had any prospects. So her father objected to our romance. When I wrote to my father that I insisted on getting married, he cut off my allowance (津贴). And I had to go home. But I met the girl once more, and told her I would return to America, earn some money to fortify myself, and come back for her in a few months.”

“We knew,” he resumed, “that her father might intercept (截断) a letter, so we agreed that I would simply mail her a slip of paper with a date on it, the time she was to meet me at a certain place; Then we’d get married. Well, I went home, got the loan (贷款) and sent her the date. She received the note. She wrote me: ‘I’ll be there.’ But she wasn’t. Then I found that she had been married about two weeks before, to a local innkeeper, a rich guy at that time, now was in jail and hadn’t got the parole. Anyway, She hadn’t waited.”

Then my father said, “Thank God she didn’t. I went home, met your mother and we’ve been completely happy. We often joke about that youthful love romance. I suggest that one day you write
a story about it.” The woman appeared with our beer.

“You are from America?” she asked me.

“Yes,” I said.

She beamed. “A wonderful country, America.”

“Yes, a lot of your countrymen have gone there. Did you ever think of it?”


We rose from our seat and left. Outside, as we saw the car pulling into the beautiful inn, I said, “father, just how did you write that date on which she was to meet you?”

He stopped, took out an envelope and wrote on it. “Like this,” he said, “12/11/13, which was of course, December 11, 1913.”

“No!” I exclaimed. “It isn’t in Denmark or any European country. Over here they write the day first, then the month. So that date wouldn’t be December 11 but the 12th of November!”

Father was stunned, tightening his face, “So she was there!” he exclaimed, “and it was because I didn’t show up that she got married.” He retreated into the silence for a while. “Well,” he said, “I hope she’s happy. She seems to be.”

As we made our way to our room, I blurted out, “It’s a lucky thing it happened that way. You wouldn’t have met mother.”

He put his arm around my shoulders, looked at me with a heartwarming smile, and said, “I was very lucky, young fellow, for otherwise I wouldn’t have met you, either!”

From Reader’s Digest, 1975.

Appendix C

Exercises for the Control Group:

Reading Passage A:

Exercise A: Answer the following questions: (8 min)

1. How was Vingo dressed? Was he old or young?
2. What did the young people on the bus think of Vingo?
3. What’s Vingo’s story?
4. When the girl asked him whether he has married or not, why did Vingo answer: “I don’t know.”?
5. Did Vingo object to his wife getting a new guy?
6. When did Vingo write her again?
7. How did Vingo’s wife let him know she still wanted him back?
8. When the bus approached the great oak tree, what did Vingo look like?
9. What’s Vingo and young people’s reaction(反应) when they saw many handkerchiefs on the oak tree?

Reading Passage B:

Exercise B: Put the following statements in the right order based on the story in Reading Passage B.(10 min)

a) Father began to tell his romance to me.

b) Father and I sat in a Danish inn(小旅馆), which reminded father of his old good days in Denmark thirty years ago.
c) Father didn't feel regretted about the date that he missed because he had met my mother and I.
d) Father’s smile disappeared when he saw a woman setting a tray of drinks before some customers.
f) Father didn’t keep the date.
e) The woman had changed a lot.
g) Their love was objected to by both of their parent.
h) Father and the girl fell in love with each other madly.
i) Father and girl made an agreement that they could meet at a certain place.
j) The girl was married to a local innkeeper.
k) Father realized that the reason he missed the date was cultural difference.

The right order:

c) d) e) f) g) h) i) j) k)

Exercise C: Answer the following questions: (10 min)
1. Where did the story happen?
2. Why did father’s smile disappear suddenly?
3. What did the girl look like?
4. Who was the woman? Did father know about her?
5. Why did father tell me about his romance?
6. Why did girl’s father object to their marriage?
7. What was the result if father insisted on marrying the girl?
8. Why did father not keep the date?
9. When father knew it was a mistake, what’s his reaction (反应)?
10. Did father feel regretted about the date he didn’t keep?

Appendix D

Exercises for the Experimental Group

Reading Passage A

Exercise A: Answer the following questions: (8 min)
1. How was Vingo dressed? Was he old or young?
2. What did the young people on the bus think of Vingo?
3. What’s Vingo’s story?
4. When the girl asked him whether he has married or not, why did Vingo answer: “I don’t know.”?
5. Did Vingo object to his wife getting a new guy?
6. When did Vingo write her again?
7. How did Vingo’s wife let him know she still wanted him back?
8. When the bus approached the great oak tree, what did Vingo look like?
9. What’s Vingo and young people’s reaction(反应) when they saw many handkerchiefs on the oak tree?

Exercise B: Replace the italicized（斜体） word with a synonym（同义词）.
They were carrying sandwiches, …as the gray, cold spring of New York vanished behind them. (L. 3)
He sat in front of them, dressed in a …suit, never moving, his dusty face masking his age. (L. 5)
Deep into the night, outside Washington, the bus pulled into Howard Johnson's（地名） restaurant. (L. 6)
He had been in jail in New York for the past four years, and now he was going home. (L. 17)
“Are you married?” She inquired. (L. 18)
No one would like to waist time on a prisoner of no prospects. (L. 23)
I wouldn’t object to her getting a new guy. (L. 23)
Vingo stopped looking, tightening his face, as if fortifying himself against still another disappointment. (L. 35)

Exercise C: Find a word in Column B which is similar in meaning to one of the words in Column A.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) beam (L. 10)</td>
<td>a) conditional release from prison</td>
</tr>
<tr>
<td>2) mutter (L. 11)</td>
<td>b) showing a pleasing beauty of manner</td>
</tr>
<tr>
<td>3) swig (L. 12)</td>
<td>c) move along</td>
</tr>
<tr>
<td>4) graceful (L. 24)</td>
<td>d) make …stronger</td>
</tr>
<tr>
<td>5) parole (L. 27)</td>
<td>e) smile brightly</td>
</tr>
<tr>
<td>6) fortify (L. 35)</td>
<td>f) say in a low voice</td>
</tr>
<tr>
<td>7) approach (L. 35)</td>
<td>g) a long and large drink</td>
</tr>
<tr>
<td>8) make one’s way to (L. 41)</td>
<td>h) come near and nearer</td>
</tr>
</tbody>
</table>

Exercise D:
Part A: Find the appropriate meaning for each word according to the passage.
1) blurt out (L. 20): A) say suddenly B) jump suddenly C) walk suddenly
2) embarrassed (L. 27): A) make …feel happy B) make … feel comfortable C) make … feel ashamed
3) exclaimed (L. 31): A) cry loudly B) sing loudly C) make a loud noise
4) be caught up in (L. 32): A) get hold of B) be interested in C) overtake (赶超) somebody
5) stun (L. 39): A) shock somebody B) frighten somebody C) cheat somebody

Part B: Fill in each of the blanks with one of the five words in part A. Change the form if necessary.
1) We ________________ the TV program that we forgot about the time.
2) She ____________ by the news of her son’s death.
3) He felt ____________ when his aunt commented (评论) about his shabby (破烂的) clothes in public.
4) Jack _______________ the bad news before I could stop him.
5) “What,” she ___________, “ Are you leaving without me?”.

Exercise E: fill in the blanks with the given words, change the form if necessary.

vanish / pull into / exclaim / catch up in / approach / stun / make one’s way to / in jail

When the college students were on the bus to Fort Lauderdale for their spring break, they noticed a mysterious man in a nearby seat. The man seemed __________ his own thoughts, and the students wondered what stories there were behind his dusty face.
Finally, one of the girls \(\text{2}\) to his seat and introduced herself to him; and he began to tell the story of his years \(\text{3}\) and separation from his wife. As the bus \(\text{4}\) his hometown, he told the students that he had written to his wife, telling her that if she wanted to take him back, she should tie a yellow handkerchief on the big oak tree on the outskirts of the town as a sign. If there was no handkerchief, he would \(\text{5}\) from her life and never trouble her again. When the bus \(\text{6}\) the town, he and students watched anxiously for the yellow handkerchief. At last, students \(\text{7}\) their congratulations to the \(\text{8}\) man when, not one, but countless yellow handkerchiefs appeared on the oak tree.

**Exercise F: Translate the following sentences into English.**

1. 经过了一个月的休息，她又重新开始写作。(resume)
2. 当我写信告诉我父亲一定要娶那个姑娘时，他断了我的津贴(allowance)。（insist on）
3. 他的邻居不同意把门前的大树砍倒。（object to）
4. 他的笑容不能掩盖住他的愤怒。（mask）
5. 当他心情不佳的时候，他总是沉默以待。（in a bad mood, retreat）

**Appendix E**

**Vocabulary size test**

<table>
<thead>
<tr>
<th>1 conduct</th>
<th>27 beam</th>
<th>53 manage</th>
<th>78 resident</th>
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</thead>
<tbody>
<tr>
<td>2 consumption</td>
<td>28 biology</td>
<td>54 mean</td>
<td>79 revolution</td>
</tr>
<tr>
<td>3 corner</td>
<td>29 born</td>
<td>55 middle</td>
<td>80 round</td>
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<tr>
<td>4 crime</td>
<td>30 bubble</td>
<td>56 molecule</td>
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<td>31 complain</td>
<td>57 music</td>
<td>82 second</td>
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<td>6 defend</td>
<td>32 cave</td>
<td>58 nervous</td>
<td>83 setting</td>
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<td>7 desirable</td>
<td>33 circle</td>
<td>59 notebook</td>
<td>84 shoe</td>
</tr>
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<td>8 dim</td>
<td>34 characteristic</td>
<td>60 October</td>
<td>85 sin</td>
</tr>
<tr>
<td>9 disturb</td>
<td>35 circumstance</td>
<td>61 orderly</td>
<td>86 smash</td>
</tr>
<tr>
<td>10 drift</td>
<td>36 cloud</td>
<td>62 owe</td>
<td>87 son</td>
</tr>
<tr>
<td>11 economical</td>
<td>37 community</td>
<td>63 verb</td>
<td>88 spider</td>
</tr>
<tr>
<td>12 embrace</td>
<td>38 generation</td>
<td>64 party</td>
<td>89 static</td>
</tr>
<tr>
<td>13 entrance</td>
<td>39 govern</td>
<td>65 performance</td>
<td>90 strategy</td>
</tr>
<tr>
<td>14 exaggerate</td>
<td>40 grow</td>
<td>66 pinch</td>
<td>91 suffer</td>
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<td>15 explanation</td>
<td>41 harm</td>
<td>67 pole</td>
<td>92 survey</td>
</tr>
<tr>
<td>16 familiar</td>
<td>42 hen</td>
<td>68 poverty</td>
<td>93 target</td>
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<td>17 fellow</td>
<td>43 honorable</td>
<td>69 price</td>
<td>94 textile</td>
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<tr>
<td>18 flash</td>
<td>44 ill</td>
<td>70 weekday</td>
<td>95 thrive</td>
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<tr>
<td>19 fork</td>
<td>45 independent</td>
<td>71 widen</td>
<td>96 too</td>
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<td>20 fruit</td>
<td>46 insect</td>
<td>72 worse</td>
<td>97 treaty</td>
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<tr>
<td>21 acknowledge</td>
<td>47 interval</td>
<td>73 zone</td>
<td>98 typewriter</td>
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<tr>
<td>22 afraid</td>
<td>48 joint</td>
<td>74 promote</td>
<td>99 upset</td>
</tr>
</tbody>
</table>
23 although 49 kneel 74 pure 100 voluntary
24 apology 50 layout 75 rank
25 assure 51 lifetime 76 record
26 bacon 52 loose 77 relief

Appendix F

26 word items for vocabulary tests:
- parole
- fortify
- pull into
- vanish
- beam
- mask
- retreat
- jail
- mutter
- guy
- swig
- resume
- exclaim
- insist
- stun
- approach
- root
- inquire
- blurt out
- graceful
- prospect
- object to
- embarrassed
- catch up in
- tighten
- make one’s way to

Appendix G

16 word items for the writing test:
1 vanish (消失) 2 pull into (车驶入) 3 mask (遮盖)
4 retreat (陷入) 5 resume (重新开始做某事) 6 insist on (坚持)
7 jail (监狱) 8 embarrassed (尴尬的) 9 object to (反对)
10 prospect (前途) 11 exclaim (高呼) 12 catch up in (对⋯⋯发生兴趣)
13 approach (靠近) 14 stun (使惊讶) 15 tighten (绷紧)
16 make one’s way to (向某方向行进)

(…continued from p. 109)