Explicit Instruction of Context-embedded Hyperlinked Thematic Words and Vocabulary Recall

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Abstract

This follow-up study examined the effect of some strategies on vocabulary recall of 75 Iranian intermediate learners through PowerPoint. Three groups were in the study. Seventy new hyperlinked thematically-related words were explicitly taught in context. The first experimental group used L1 translation via hyperlinks for vocabulary learning, while the second experimental group received English definition in the same way. The control group learned the words using a handout through a traditional method. The results indicated a significant difference between the experimental groups and the control group but not between the experimental groups. The study has some theoretical and pedagogical implications.

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Keywords: explicit strategy instruction; thematic clustering; cognitive strategies of L1 translation and English definition; hyperlinks; vocabulary recall

1. Introduction

Since vocabulary continues to be a major area for language learning into higher education, it is essential for learners to use effective strategies for improvement in this area (Leeke & Shaw, 2000). By recognizing the importance of Vocabulary Learning Strategies (VLSs) in facilitating Second Language (L2) or Foreign Language (FL) vocabulary learning, a boom of interest has been shown in utilizing them since the last few decades (Atay & Ozbulgan, 2007). Cohen (1996) indicates that many learners fail to develop sufficient mastery of a strategy

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repertoire allowing them to make progress in language learning on their own. Hence, to become more aware of and proficient with a broad range of learning strategies, they need to be given explicit instruction (Oxford, 1996, 1993). As a matter of fact, explicit strategy instruction has been found to have the most significant effect on the performance of students (Luke, 2006). Moreover, presenting words in thematically-or semantically-related sets is one of the most popular techniques for introducing words in FL classrooms (Tagashira, Kida, & Hoshino, 2010). Tinkham (1997, p.141) believes that “thematic clustering [is] based upon psychological associations between clusters [of] words and a shared ‘thematic concept.”

A boom of interest has been seen in applying new technologies in educational arena after the development of them (Sokolik, 2001). Nowadays, the instruction of vocabulary is increasingly supplemented by software products (Wood, 2001). By reviewing related Computer Assisted Language Learning (CALL) literature, it can be revealed that some integrated forms of technology such as hypertext/hyperlink environments have been used for teaching new vocabulary items (Al-Jarf, 2007). Hawkes (2009) believes that PowerPoint remains just a tool at an expert teacher who retains the responsibility to plan, craft, and author the lesson. The act of laying down the thinking process for a specific lesson sequentially as a series of PowerPoint slides has the impact of clarifying thought during lesson planning. It makes the progression plainer within a lesson and even within a sequence of lessons, and it can also aid the teacher in ensuring that the lesson outcomes meet the learning objectives. A hyperlink, an innovative feature of a software program, is a radical departure from a linear text. Using it, viewers can access related information often in the form of icons. Such icons are labeled differently. In fact, a hyperlink provides a situation in which readers can digress from the available treatment and search through related data bases (Wood, 2001).

1.1. Statement of the problem and significance of the study

Based on our experience and other teachers’, vocabulary is one area of difficulty in some contexts such as English as a Foreign Language (EFL) context, specifically in Iran. Unfortunately, most Iranian EFL learners still have some problems in vocabulary learning and recalling in spite of their strategy use. Therefore, there is still a gap between theory and practice. According to Moir and Nation (2002) one of the certain goals for a vocabulary program is retaining the learning so that the knowledge of vocabulary can be still available after the course ends. Consequently, it is inferred that immediate vocabulary learning is not the only specific vocabulary learning goal; one must go beyond this and consider effective, long life vocabulary learning and recall. Moreover, there are some conflicting views and findings concerning the effectiveness of two cognitive strategies of L1 translation (e.g. Chepyshko & Truscott, 2009; Laufer, 2005) and English definition (e.g. Chepyshko & Truscott, 2009; Hunt & Beglar, 2002), thematically clustering words (e.g. Hippner-Page, 2000; Tinkham, 1997, 1993), and hyperlink/text environments (e.g. De-Ridder, 2002; Svenconis & Kerst, 1995). By addressing the above arguments and findings, it was intended to explicitly teach learners specific VLSs via PowerPoint to increase not only their vocabulary recall but also their motivation and knowledge of VLSs. In other words, the aim was to touch upon effective vocabulary recall in general and explicit strategy instruction via PowerPoint in particular. The study was carried out in a way to have some pedagogical and theoretical implications.

2. Literature review

A number of studies have been done in the case of vocabulary learning and recall, and their findings have been found useful. For example, Lee (2003) carried out a study to explore the effect of explicit vocabulary instruction on vocabulary use in writing. Although the results indicated that delayed writing showed no significant loss in recognized and productive target vocabulary, the retention of newly learned words and productive vocabulary was significantly reduced. In the case of thematic clustering, Tinkham (1997) examined the effects of semantic and thematic clustering on the ease of second language vocabulary learning in a research study. The thematic clustering was identified as the easiest strategy. Al-Jabri (2007) compared the effects of semantic and thematic clustering on learning English vocabulary by some Saudi students. The participants were tested immediately after the study phase and a week later on their vocabulary recall. According to the results, it was showed that the subjects recalled more words from the thematic list than from the semantic list. Later, the study of Motallebezdeh and Heirany (2011) confirmed and supported the Tinkham’s (1997) and Al-Jabri’s (2007) studies. Moreover, AlShaikhi (2011) investigated the effects of three types of clustering (i.e. semantically-related sets, semantically-unrelated sets, and
thematically related sets) on vocabulary acquisition and recall of Arabic-speaking learners. The subjects were assigned to three groups in which each received one type of clustering. Three lists of vocabulary according to their clustering type and an immediate and a delayed L2-L1 translation recall tests were employed. The findings showed that there was no significant difference among the three types of clustering on recalling new words in the immediate test. However, a significant difference was found for the delayed test.

Jacobs, Dufon, and Hong (1994), in an attempt, examined the effects of vocabulary glossing on vocabulary learning and recalling. Based on their findings, glossing did not significantly affect recall for the participants overall; no significant difference was found between L1 and L2 glosses. Moreover, the effects of L1 and L2 glosses on incidental vocabulary learning and recalling in a multimedia environment was examined by Yoshii (2006). The results showed that there was no significant difference between L1 and L2 glosses in vocabulary recall. In fact, the results of Jacobs et al. (1994) were confirmed by the findings of Yoshii (2006). Besides, Yan's (2010) study demonstrated that two experimental groups outperformed a control group in vocabulary learning and retention via a vocabulary learning multimedia software. For the effects of Hyperlinks on vocabulary recall, De-Ridder (2002) investigated the effect of highlighting of hyperlinks on incidental vocabulary learning, text comprehension, and reading process. It was found that the subjects obtained significantly lower scores in a delay vocabulary test than in an immediate one.

2.1. Research questions

Three research questions along with their null hypotheses were formulated to fulfill the purpose of the study. The research questions are as follows.

Question 1: Does explicit instruction of clustering new words into their L1 translation using hyperlinks have any positive effects on vocabulary recall of Iranian intermediate EFL students?

Question 2: Does explicit instruction of clustering new words into their English definition using hyperlinks have any positive effects on vocabulary recall of Iranian intermediate EFL students?

Question 3: Is there any significant difference among vocabulary recall of the groups?

3. Methodology

3.1. Materials and methods

The present study had a quasi-experimental comparison design in which the classes were considered intact groups. Seventy five female Iranian intermediate EFL learners (age range 14–17) were non-randomly selected from an 85 population based on their performance on the homogenizing test of Nelson English Language (Test 200 A) (Fowler & Coe, 1976). We had two experimental groups and one control group for the study; the subjects were randomly assigned to one of the three groups. Only 11 passages from 11 different topics were selected from the book Intermediate Vocabulary (Thomas, 1995). The passages, next, were typed in the first 18 slides of a 90-slide PowerPoint program for the experimental groups. Words which had a thematic relation with their topic and with each other were highlighted and hyperlinked to their meanings in the rest of the slides. Two versions of the PowerPoint program were designed. One version presented the meaning of the new words in their L1 translation for the first experimental group and another version presented the meaning of the same words in their English definition for the second experimental group. The hyperlinked words were in pink color, and they became light pink whenever they were clicked on. The control group was expected to learn the same target words through a traditional method of teaching without any specific strategies. They used a researcher-made handout of the same words in which the words were introduced out of context without any thematic relationship to each other. Consequently, each participant was given a copy of the handout. Two different MC researcher-made tests were given to the subjects: a posttest (r = .82) and a delayed posttest (r = .79). The tests had an acceptable degree of face, content, and construct validity.
3.2. Procedure of teaching: The experimental groups

Step-by-step explanations of how to work with the program having been provided, a CD already written from the original CD of the researchers was given to each experimental subject for reviewing the vocabulary items at home. In each session of the class, about six new words were taught. When the hyperlinked words were left-clicked on, a separate slide automatically appeared on the screen deciphering the meaning of that clicked word. Through a Back button, the participants could turn back to the main slide having the passage in which the target vocabulary had been clicked on. The whole teaching procedure lasted for 12 sessions. The subjects were told nothing about the posttests.

3.3. Procedure of teaching: The control group

The teacher or one of the students read the words from the handout, around six new words per session. Next, the meanings were provided by the teacher or some students. As a matter of fact, the meaning of each word was provided by more than one student; nearly all the learners had active participation in providing the meanings. Unlike the experimental groups, the teacher did not use any specific (or even combination of) vocabulary strategies to present the meanings. The method of vocabulary teaching lasted for 12 sessions. Again, the control participants did not know anything about the posttests.

3.4. Procedure of post testing

Teaching having been finished, an unannounced vocabulary posttest was administered one week later. The posttest aimed to assess the participants’ degree of vocabulary learning. Two weeks after the first posttest, a delayed posttest was given to the subjects in the same condition to detect which of the groups outperformed the other one in recalling the words.

4. Results

4.1. Test power and effect size

Power and partial eta squared of the posttest and the delayed posttest were computed. The power value of the posttests was high. Therefore, the researchers could correctly reject the null hypotheses with confidence. The eta squared of the posttest and the delayed posttest was also high, which showed a large effect size (Cohen, 1988).

4.2. Testing normality

Both numerical (i.e. skewedness and Kolmogorov-Smirnov) and graphical methods (i.e. Quantile Quantile plot) were used to test the normality of data distribution. It was revealed that the data distribution was normal. Since the assumptions of parametric techniques were met (Mackey & Gass, 2005), parametric statistics were applied.

4.3. Testing the null hypotheses

HO1: Explicit instruction of clustering new words into their L1 translation using hyperlinks has no positive effect on vocabulary recall of Iranian intermediate EFL students.

Based on Table 1, the obtained $\text{sig. (2-tailed)}$ is .00, which is less than the specified $\alpha$ value of .05. Accordingly, there was a significant difference in the vocabulary recall of the first experimental group at time 1 (posttest) and time 2 (delayed posttest).
According to Table 2, the $M$ scores of the vocabulary test for the first experimental group at time 1 (posttest) and time 2 (delayed posttest) are 15.52 and 14.36 respectively. Therefore, there was a significant decrease (1.16) in vocabulary scores from the posttest to the delayed posttest. Consequently, the explicit instruction of clustering new words into their L1 translation using hyperlinks had no positive effect on vocabulary recall of the first experimental group’s subjects. Therefore, the null hypothesis was accepted.

Table 2: Test mean and groups’ number

<table>
<thead>
<tr>
<th>Groups</th>
<th>Posttest mean</th>
<th>Delayed Posttest mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>First experimental group</td>
<td>15.52</td>
<td>14.36</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second experimental group</td>
<td>14.68</td>
<td>13.20</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control group</td>
<td>11.24</td>
<td>10.12</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

H02: Explicit instruction of clustering new words into their English definition using hyperlinks has no positive effect on vocabulary recall of Iranian intermediate EFL students?

Based on Table 3, the obtained sig. (2-tailed) is .00, which is less than .05. Therefore, there was a significant difference between the scores of the second group at time 1 (posttest) and time 2 (delayed posttest).

Table 3: Paired-Samples t-test between the posttest and delayed posttest of the second experimental group

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>95% confidence Interval of the Difference</th>
<th>M</th>
<th>SD</th>
<th>SEM</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>df</td>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posttest -</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>delayed Posttest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The $M$ score of the vocabulary test, according to Table 2, is 14.68 at time 1 (posttest) and 13.20 at time 2 (delayed posttest). Consequently, there was a significant decrease (1.48) in vocabulary scores from the posttest to the delayed posttest. Consequently, the explicit instruction of clustering new words into their English definition using hyperlinks had no positive effect on vocabulary recall of the second experimental group’s participants. Therefore, the null hypothesis was accepted.

H03: There is no difference among vocabulary recall of the groups.
In Table 4, the sig. value is .034, which is not greater than .05. Thereby, the assumption of homogeneity of variances was not met; therefore the Robust test of Welch and Brown were calculated.

Table 4: Test of homogeneity of variances

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.611</td>
<td>2</td>
<td>72</td>
<td>.034</td>
</tr>
</tbody>
</table>

According to Table 5, the sig. value is .000; this number is less than .05. It can be concluded that there was a significant difference somewhere among the M scores of the vocabulary recall test for the groups.

Table 5: Robust tests of Equality of Means

<table>
<thead>
<tr>
<th>Statistic</th>
<th>statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welch</td>
<td>25.113</td>
<td>2</td>
<td>46.352</td>
<td>.000</td>
</tr>
<tr>
<td>Brown</td>
<td>20.175</td>
<td>2</td>
<td>65.887</td>
<td>.000</td>
</tr>
</tbody>
</table>

Therefore, Table 6 was taken into consideration, and the following conclusions were drawn based on the asterisks in the table.

- There was a difference between the experimental groups at .05 but not a significant difference ($MD=1.160$).
- There was a significant difference between the first experimental group and the control group at .05 ($MD=4.240$).
- There was a significant difference between the second experimental group and the control group at .05 ($MD=3.080$).

Table 6: Post Hoc tests: Multiple comparisons

<table>
<thead>
<tr>
<th>Confidence Interval</th>
<th>(I) Group</th>
<th>(J) Group</th>
<th>MD (I-J)</th>
<th>SE</th>
<th>Sig.</th>
<th>Lower</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>95 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1 2.81</td>
<td>Group 2</td>
<td></td>
<td>1.160</td>
<td>.690</td>
<td>.219</td>
<td>-4.9</td>
<td>2.59</td>
</tr>
<tr>
<td></td>
<td>Group 3</td>
<td>4.240*</td>
<td>.690</td>
<td>.000</td>
<td></td>
<td>2.59</td>
<td></td>
</tr>
<tr>
<td>5.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2 .49</td>
<td>Group 1</td>
<td>-1.160</td>
<td>.690</td>
<td>.219</td>
<td></td>
<td>2.81</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group 3</td>
<td>3.080*</td>
<td>.690</td>
<td>.000</td>
<td></td>
<td>2.81</td>
<td></td>
</tr>
<tr>
<td>1.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-4.3</td>
<td></td>
</tr>
<tr>
<td>Group 3 -5.89</td>
<td>Group 1</td>
<td>-4.240*</td>
<td>.690</td>
<td>.000</td>
<td></td>
<td>-4.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Group 2</td>
<td>-3.080*</td>
<td>.690</td>
<td>.000</td>
<td></td>
<td>-4.3</td>
<td></td>
</tr>
</tbody>
</table>
The eta squared value obtained was .35 which indicates a large effect size (Cohen, 1988). In this way, the last null hypothesis was rejected and a difference was found among the groups.

5. Discussion and conclusion

The findings of Lee (2003) are probably applicable to the results of the first and the second questions, which failed to show any positive effects of explicit instruction of specific strategies via hyperlinks on vocabulary recall. The results of the present study showing that the strategy of thematic clustering along with other strategies via PowerPoint failed to be very helpful for vocabulary recall of the participants seem applicable to the Al-Jabri’s (2007) findings in which thematic clustering was not fruitful for the students’ recall. The findings of Jacobs et al. (1994), Yoshii (2006), and Yan (2010) are probably in the same trend with the results of the third question that the two experimental groups outperformed the control group in vocabulary recall with no significant difference between the subjects of the experimental groups, and that the strategies were not very effective in recalling the newly learned words. Moreover the results of the current study confirmed and supported the findings of the De-Ridder’s (2002) study in a way that hyperlinks were not very good for recalling the previously learned words.

Consequently, it might be concluded that the combination of explicit strategy instruction, clustering, L1 translation, English definition, and hyperlinks was not so effective in vocabulary recall of the experimental groups. As previously mentioned (see section 3.2), the subjects of the experimental groups had to work on their CD at home; this was a good way to become self-directed learners and improve their independent skills. Finally, it is worth to conclude that learning new highlighted and hyperlinked words is located under the approach of intentional and explicit learning, the type of learning in which the attention is focused directly on the new information (Schmitt, 2000).

5.1. Implications

The current study has various pedagogical implications for learners, teachers, teacher educators, and teacher training professionals in EFL contexts. Moreover, the results may be a good starting point for those who intend to do more additional research studies in the realm of EFL contexts. Indeed, the application of the strategies enables learners to manipulate language in such a way to make its learning process easier. In addition to the mentioned pedagogical implications, the present study has some theoretical implications for textbook writers and syllabus designers who aim at designing, presenting, and revising the content of teaching and learning materials.

5.2. Further suggestions

The following suggestions are recommended to open the possible avenues for further investigations. More additional studies need to be done with different age groups, other levels of proficiency, and more representative subjects. This study can also be replicated to examine the effect of the mentioned strategies on longer retention, and the impact of gender factor on the performance of the learners.

References


