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The effects of instruction type on vocabulary learning: A psycholinguistics study

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Abstract

The present study aims at investigating the effects of depth of processing in three approaches on teaching vocabulary. Taking into account Craik and Lockhart (1972) model of memory, it intends to find out if any of the current approaches to vocabulary teaching: a) Incidental Learning or b) Task-based approach, or c) the old method of using dictionaries and repetition is more helpful. The results of the study revealed that implementation of tasks and use of output as a means of drawing learners' attention to the form is much more beneficial than the other two approaches. The outcome is in line with the hypothesis in the Craik and Lockhart model of memory.

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1. Introduction

How vocabulary is acquired and what the most efficient tools and methods of promoting effective acquisition are have consistently been important lines of investigation in the field of second language acquisition (SLA). A second area of interest in psycholinguistics and SLA involves how a word is remembered and recalled. Memory is so central to cognitive processes that it influences almost every

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aspect of any topic in learning. From the four proposed models of memory *the level of processing* can hold a connection between these two aspects.

1.1. Levels-of-processing model

The levels-of-processing model proposes that deep, meaningful kinds of information processing lead to more permanent retention than shallow, sensory kinds of processing. In addition, this theory states that the more analysis an item receives, the better it will be recalled. Craik and Lockhart (1972) proposed that a shallow encoding, dealing with superficial characteristics such as physical analysis of an item or in this experiment just having the word italicized or bolded led to poor recall. While deep encoding was of a more semantic nature with a greater analysis of meaning such as the formation of a vivid image.

Two specific pedagogical approaches to draw learners' attention to form are *Visual Input (textual or typographical) Enhancement* and learners' *output*. These approaches share a basic characteristic, namely, an attempt to direct the learners' otherwise elusive attention to problematic aspects of input in order to promote their acquisition. They differ, however, in how this is achieved. Whereas attention in the case of visual enhancement is induced by the external means (i.e., by highlighting selected input forms), attention in output arises internally through production processes.

1.2. Approaches under study

1.2.1. Incidental learning and visual input enhancement

It seems most scholars agree that, except for the first few thousand most common words, vocabulary learning predominantly happens through extensive reading, with the learner guessing at the meaning of the unknown words (Coady & Huckin, 1997; Krashen, 1993). This secondary type of learning is called "incidental" learning because it is a by-product, not the target, of the main cognitive activity, reading. Krashen (1981), in a review of 144 studies, argued that incidental acquisition of vocabulary occurs through the operation of his Input hypothesis, with reading providing the comprehensible input that leads naturally to acquisition.

Visual input enhancement is an implicit and unobtrusive means to draw learners' attention to form contained in the written input (Doughty & Williams, 1998). This basic method of enhancement, is simply enhancing the perceptual salience of the target form via combinations of various formatting techniques (e.g. bolding, capitalizing, or underlining), which may sometimes be accompanied by an explicit mention to learners to attend to the highlighted form.

1.2.2. Task-based approach

Since the early 1980s, a subfield of Second Language Acquisition (SLA) Research has developed that has now become known as research into task-based language learning and teaching (TBLT). The central goal of TBLT is to establish a close relationship between a certain learning environment (the task), a communicative behavior resulting from this learning environment (task-based L2 performance), and second language acquisition (task-based L2 learning).

Task-based research focusing on the negotiation of meaning is largely based on Long's *Interaction Hypothesis* (1996) where he claims that negotiation provides learners with feedback on their own L2 production, and that it prompts learners to adjust, manipulate, and modify their output. In proposing the *Output Hypothesis*, Swain (2000) argued that producing the target form may serve as "the trigger that

forces the learner to pay attention to the means of expression needed in order to successfully convey his or her intended meaning". The present study focuses on the noticing function of output which posits that learners may notice the gap in their knowledge in an attempt to produce the TL, which then prompts them to solve their linguistic deficiency in a way and elicits it in an interactive speaking task.

1.2.3. Repetition and dictionaries

According to psycholinguistic studies repetition of a form involves a shallow level of processing as it requires just mere repetition of the same kind of analysis carried out in terms of physical or sensory characteristics such as intonation, pitch, pronunciation and so. Here dictionary is used as a medium for having access to some characteristics of the words; therefore, a correct sample of pronunciation, meaning and usage.

2. Review of related literature

Previous studies on the effects of visual input enhancement produced quiet mixed results. Some studies (Shook, 1994; and Williams, 1999) conducted previously emphasize the positive facilitative effects of IE, whereas other studies (Alanen, 1995; Robinson, 1997; Leow, 1997; White, 1998; etc.) either showed limited effects or no significant effect at all. For example, Alanen (1995) suggested that noticing seems an important factor in accounting for subsequent learning, but the cross-comparison of the noticing results and learning outcomes showed that noticing seemed to be induced by a variety of factors, one of which was input enhancement. White (1998) stated that many learners noticed the form but were not sure of their relevance or importance, which accounted for the limited improvement in learning. On the other hand, Williams' (1999) that conjoined the whole process of study with another kind of task showed a better result.

Izumi (2002) stated significant facilitative effects as the result of pushed output-input treatment, though his study revealed no significant improvement due to only input enhancement treatment in comparison to only output (as a communicative task) treatment impact. Besides, a great body of research sheds light on the effectiveness of implementing tasks into instruction (Fotos, 1994; de la Colina& Garcia Mayo, 2007). Therefore, it seems IE can be more effective when combined with other forms of instruction and practice.

Regarding negotiation of meaning, Pica (1994) claimed that negotiated interaction may be beneficial for learning lexicon and Long (1996) stated that negative feedback obtained in negotiation work or elsewhere may be facilitative for SL development, at least for vocabulary and morphology. Mackey et al. (2000) explored the type of interactional feedback provided to EFL and IFL learners and the learners' perceptions about the feedback provided to them, which illustrated an improvement in lexical acquisition. Ellis et al. (1994) established that negotiation resulted in better comprehension and receptive acquisition of vocabulary than personified input.

3. Objectives of the study

Taking into account all these controversies, the present study intends to find out if any of the approaches is more effective for vocabulary retention and to explain the results in terms of the level-of-processing model of memory introduced by Craik and Lockhart. To achieve this, the following null hypotheses were formulated:

- Incidental learning of vocabulary by itself cannot be significantly beneficial to enhancing learner's knowledge of target vocabulary.
- None of the groups undergoing a different approach can outperform the other groups in terms of immediate remembering the target forms.
- No approach will show significantly more beneficial to learners' long-term retention of the target forms.

4. Methodology

4.1. Participants

This study was conducted with 48 female EFL learners, with an age range of 17 to 25, recruited from the student population at one language school located in Isfahan. First, 55 learners tested by an FCE test to make sure their homogeneity and 45 learners met the requirements of the advanced proficiency level. The learners were later assigned to four groups, one served as the control group and the rest undergoing the approaches under study. Teaching approaches were assigned to the groups in random.

4.2. Materials

For this study, the participants were given three pieces of reading material, each consisting 5 target words, modified according to the needs of the study. All the three texts were taken from Murray's *1100 words* (1999) (The Story of a Haircut). To meet the requirements of the study, the new words were italicized and bolded for the first group undergoing the Visual Enhancement approach.

A multiple-choice test was given on the words introduced in the three texts which was later modified for the long-term recall of the target words.

4.3. Procedure and data analysis

The study was conducted in three weeks. Within the first week, the subjects were introduced to the material, each text on every other day.

For the group with enhanced input material, students were to read the texts and just look for the main idea and the gist of the passage, not for any detailed information or the meanings of the unknown words. The next group was engaged in reading the passages, checking the new words in dictionaries, and if students asked for, the teacher would explain the new words for them and make examples. There was no output and production on their part, and after asking some questions about general meaning of the text, the words were practiced by repetition in group and individually. The third group material reading was

followed by negotiation of meaning of the new words (students-teachers or students-students. Then they were involved in tasks of production: discussion and storytelling. The control group was provided with the texts without any enhancement or undergoing any special instruction type. They just read the material and were later involved in a question-reply exercise.

On the fourth day, groups were tested on the material presented to them in order to check their short retention of the target form. In the end, a second test was given on the words introduced in all three tasks by a two-week interval to see which approach is more effective for a long-term recall.

5. Results

The results of the tests were submitted to SPSS software. The analysis showed that the groups performed differently on the tests; therefore, an ANOVA was run in order to see whether the difference was significant or not. As the ANOVA table shows (table 1), between groups difference in both posttest ($F= 396.854$) and delayed posttest ($F= 216.122$) is significant.

Table1. Description of between group differences on post and delayed tests

Group differences		Sum of Squares	df.	Mean Square	F	Sig.
Posttest	Between groups	1228.896	3	409.632	396.854	.000
	Within groups	45.417	44	1.032		
	Total	127.313	47			
Posttest	Between groups	724.500	3	241.500	216.122	.000
	Within groups	49.167	44	1.117		
	Total	773.667	47			

For a closer and more meticulous analysis of the differences, a post hoc test was run. The results demonstrated in the post hoc were as follows:

- The first group, undergoing Visual Input Enhancement, could not outperform the control group, neither in the posttest (sig. = .009) nor the delayed test (sig. = .720). Therefore, the first hypothesis was verified.
- The other two groups have outperformed the control group; therefore, have been beneficial to learner's acquisition and long term retention of the target form.
- The group undergoing the output instruction type has outperformed other three groups (sig. = .000). Consequently second and third hypothesis are rejected.

6. Discussion of the results

It is observed that in contrast to the positive effects of output and implementation of tasks, visual enhancement failed to show any significant effect on learning. The positive effect of output and tasks in this study is consistent with the hypothesized function of output in SLA. Output as one of the means of drawing students' attention to the form and deepening the processing of the input helps the learner to acquire the form better.

The second approach seems very effective on the short recall of the target forms. It can be justified through the fact that it is something more than mere repetition of the form. This approach combines repetition with dictionary use, thus providing the learners with a deeper processing as it involves learners in looking for the meaning of the words by themselves in addition to having them go over the pronunciation. Besides, they face a rather different context (examples) in which the target word can be used as they are provided by examples in each dictionary entry. All these result in a deeper processing, hence a better recall of the form.

There exists a significant difference between learners' recall of the forms acquired through the second two approaches, though both of them have been significantly beneficial. It can be justified in terms of the level of processing involved in each, originated from the difference in type of practice, production (output) vs. search for context (dictionary). As mentioned before, while learners are required to produce the form, it prompts the learners to find problems in their production and knowledge, helps the learner to acquire the form better. For the second approach, they do not use the form which does not result in the same processing effort as for the second group (Popham, 1978).

On the other hand, the result of the study indicates insufficiency of the comprehensible input as the sole medium of instruction, seen in the case of visual input enhancement. Though the process of instruction was embedded in a meaningful context they did not learn the target form which was presented to them as a by-product of the main focus. According to the model of level-of-processing this type of instruction leads to a very weak recall and learning. This is in line with Schmidt's Noticing Hypothesis (1994) which states that the type of attention and notice given to the form is in direct relationship with the learning process.

7. Conclusion

In sum, according to level-of-processing framework of human memory, the persistence of memory traces is understood to be a function of the depth of analysis, with deeper levels of analysis leading to more elaborate, longer lasting, and stronger traces. Maintaining information at one level of processing by rehearsing it repeatedly or by sustaining continued attention to certain aspects of the stimulus will not, by itself, lead to improved retention unless a shift to deeper levels of analysis occurs. The results of the study were in favor of output and implementation of tasks into vocabulary teaching, and next having dictionary and using its potentials beside mere repetition of the target forms.

The present study faced some limitations which call for more rigorous and refined studies on the role of age, sex, level of proficiency, and type of tasks implemented in the study on the present outcome.

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