The Effects of Frequency of Occurrence on L2 Lexical Acquisition from Reading

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Abstract

The acquisition of L2 lexical knowledge primarily follows two approaches in L2 teaching-learning contexts: explicit or intentional and incidental vocabulary acquisition. However, acquisition of vocabulary from contexts such as reading significantly contributes to one's lexical development in L2 in contrast to the explicit isolated nature of vocabulary learning. Research in second language vocabulary acquisition (SLVA) has often defined lexical acquisition from reading as incidental acquisition when learners' focus is on the message of the text rather than the individual target words. In addition, researchers argue that such acquisition is made possible when learners experience the target words multiple times in reading texts. Hence the present study was conducted to investigate the effects of frequency of occurrence ($1 \times 3 \times 7$) on acquisition of six aspects of target word knowledge from reading by 60 sixteen year old Odia speaking learners of English at the higher secondary level. The research was carried out in the quantitative paradigm and followed an experimental design which included several tools. The study was conducted in two different stages: stage 1 (preparation of tools and the pilot study) and stage 2 (the main study). Sixty learners were equally divided into three groups (Exposure 1, Exposure 3, and Exposure 7) based on their performance on the 3000 word level VLT and were provided a specified number of reading texts followed by the immediate post-test. The t-test analysis of the data revealed that there was no significant difference between one exposure and three exposures in terms of acquisition of the six aspects of lexical knowledge. However, seven exposures to target words could result in significant lexical gain. The findings can inform practitioners in ELT to promote autonomous vocabulary development by exposing learners to L2 target vocabulary multiple times in reading.

Keywords: lexical knowledge, incidental vocabulary acquisition, reading, exposure frequency

Introduction

The importance of vocabulary in language learning cannot be overemphasized since the knowledge of it highly correlates with the language proficiency of learners in second/foreign language contexts. The concerns towards teaching-learning of vocabulary in ESL/EFL contexts were developed after Richard's (1976) introduction of the term 'lexical competence', which highlighted the multi-dimensional nature of a 'word'. Subsequently, the notion of 'lexical competence' came to be perceived from different perspectives: applied linguistics, sociolinguistics, psycholinguistic, and paved way for research on several issues: strategy instruction, approaches and techniques to teach vocabulary, role of memory in vocabulary learning, and sources of acquisition and their effectiveness. In contexts where real life exposure

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Dr. P. Sunama Patro, Ph.D. (ELE), EFL-U
The Effects of Frequency of Occurrence on L2 Lexical Acquisition from Reading   321

to English is limited, teachers rely on different sources such as books, newspapers, and the like to enable learners experience the language.

The effectiveness of reading in second language lexical development has been a major area of interest in research and pedagogy. Reading in second language largely contributes to the lexical knowledge base of learners and often remains one of the chief sources of acquisition. Ooi and Lee Kim-Seoh (1996) have stated that, "vocabulary taught through reading would give the learner more opportunities to process the language at a deeper level and to develop semantic networks and other kinds of associative links…" (p.57). The incremental nature of lexical development in second language learning primarily follows to principal approaches to learning: explicit or intentional and incidental vocabulary acquisition. The former has been defined as language focused and the latter as message focused (Schmitt, 2000; Nation, 2001, 2011). However, compared to the decontextualized isolated nature of learning followed in intentional or explicit approach, the incidental vocabulary acquisition approach is believed to have long term benefits in terms of retention and enhanced strategies. And acquisition of vocabulary from reading has often been termed as incidental with regard to the contextual and message focused nature of learning. Incidental acquisition of vocabulary from reading is facilitated by several factors such as context, task type, and repeated encounters with target words. However, repeated exposure to target lexical items is considered to have significant effect on lexical gain in incidental vocabulary acquisition from reading (Chen and Truscott, 2010; Heidari-Shahreza & Tavakoli, 2012).

Objectives

In ESL contexts reading remains conducive for incidental vocabulary acquisition facilitated by multiple exposures to target words in different contexts. However, the acquisition of a word is not an all or nothing phenomenon. Each time a learner encounters a word he/she might acquire some of the aspects involved in the particular word. More exposures or encounters enable learners build associations with the target words at different levels of linguistic knowledge i.e. orthography, phonology, morphology, syntax, semantic, and discourse. Hence the present study aimed to investigate how varying numbers of exposure(s) ($1 \times 3 \times 7$) to target words could impact acquisition of selected aspects of lexical knowledge and have any effect on the pattern of acquisition.

Methods and Procedure

The study was carried out in the quantitative paradigm and followed an experimental design. It included several tools: a) 3000 word level Vocabulary Levels Test (VLT) to select sample, b) Academic Vocabulary List (Gardener and Davies 305-27) to select target words, c) seven reading texts to contextualize the target words and control their frequency of occurrence, d) diagnostic test in order to ensure that the target words were within learners' proficiency level in vocabulary use, e) questionnaire on reading texts and vocabulary exercises to know whether they posed any difficulty to the learners in terms of length, complexity, motivation, and the vocabulary exercises in terms of clarity of instruction, format familiarity, task familiarity, and f) the immediate post-test. It was conducted in two different stages: stage 1 (preparation of tools and the pilot study) and stage 2 (the main study).

Sample

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Dr. P. Sunama Patro, Ph.D. (ELE), EFL-U
The Effects of Frequency of Occurrence on L2 Lexical Acquisition from Reading   322

The participants involved in the study were sixty Odia speaking ESL learners from class XI aged sixteen. Prior to the study it was ensured that they had at least eight years of exposure to English which indicated that they had knowledge of the first 2000 most frequent words in English. It was assumed that the participants were from the same proficiency level and could read texts on their own. They all belonged to the same region and shared a common social background.

Procedure

Twenty words were selected as potential target words from the Academic Vocabulary List which contained 3000 core academic words having high ecological validity (table 1). Later, as part of the pilot study with 20 learners, they were used in sentences with enough clues to help the learners guess the meaning of the target words as part of the diagnostic test. The learners were supposed to match the meanings of the target words with their corresponding meanings on a matching type task. Ten words were selected as target words (table 2) on which seventy percent of the learners scored correctly. This was followed by preparation of seven reading texts with each having all the ten target words. The texts were around 200 words each with 80% of the words being from the first 2000 words. Next, six sub-tests were prepared (table 3) each representing one of the six aspects as part of the immediate post- test. The reading texts and the immediate post-test were administered to the learners of the pilot study assumed to be parallel with the sample of the main study. From their response to the questionnaire it was found that they did not have any difficulty in terms of the above factors related to the texts and exercises. Hence they were retained for the main study.

In the main study ninety learners were administered the 3000 word level VLT and based on their performance sixty learners were selected as the main sample who scored 27.5 or higher out of 30. This was significant as it indicated that the learners could operate at the 3000 word level in English. Later they were randomly divided into three groups (Exposure 1, Exposure 3, and Exposure 7) and read a specified number of texts followed by the unannounced immediate post-test. The data were analyzed using the statistical measure independent sample t-test.

Table 1 **Diagnostic test**

Verb		Noun		Adjective
implement	abandon	dilemma	fragment	apparent
constitute	advocate	instance	perspective	subsequent
attribute	comprise	prejudice	precision	strategic
endeavor	manipulate	dichotomy	constraint	substantial

Table 2 **Target words**

Verb		Noun		Adjective
implement	endeavor	dilemma	precision	strategic
constitute	manipulate	prejudice	perspective	substantial

Table 3 **Lexical knowledge measured**

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Dr. P. Sunama Patro, Ph.D. (ELE), EFL-U
The Effects of Frequency of Occurrence on L2 Lexical Acquisition from Reading   323

Order	Word knowledge	Item type
1	Productive knowledge of spelling **(PS)**	Dictation
2	Receptive knowledge of spelling **(RS)**	Objective
3	Receptive knowledge of parts of speech **(RP)**	Objective
4	Receptive knowledge of meaning **(RM)**	Matching
5	Receptive knowledge of association **(RA)**	Objective
6	Productive knowledge of parts of speech **(PP)**	Sentence formation

Results and Discussion

The performance (mean scores) of each group on the six sub-tests were compared with other two groups using independent samples t-test. The t-statistic was significant at the .05 critical alpha level ($p = 0.05$). The analysis indicates that there was no statistical significant difference between one exposure and three exposures in terms of acquisition of the selected aspects. However, learners who received seven exposures performed better than the two groups (Exposure 1 and Exposure 3) on PS, RS, RM and RA. The findings suggest that even a single exposure to target words leads to significant amount of lexical acquisition; and acquisition of the semantic properties of the target words strengthens only after three exposures. In addition, the knowledge of the parts of speech (both receptive and productive) remains least affected regardless of the number of exposures.

Table 4 **t-test analysis of the mean scores**

Order	Word knowledge	E1 vs. E3	E1 vs.E7	E3 vs. E7
1	Productive knowledge of spelling (PS)	.154	**.000***	.091
2	Receptive knowledge of spelling (RS)	.615	**.001***	**.002***
3	Receptive knowledge of parts of speech (RP)	.894	.850	.735
4	Receptive knowledge of meaning (RM)	.885	**.000***	**.000***
5	Receptive knowledge of association (RA)	.384	**.001***	**.026***
6	Productive knowledge of parts of speech (PP)	.940	.230	.229

Note: $*p < .05$

Conclusion and Implications of the Study

The findings favour the argument that increased exposure could lead to successful acquisition of different aspects of word knowledge and shed light on the argument that frequency of occurrence at varying levels can give rise to a pattern of lexical acquisition. The strength of exposure varies for acquisition of different aspects of lexical knowledge. While the acquisition of the syntactic knowledge involved in the target words is possible with a single exposure and acquisition of the semantic aspects require more than three exposures. In light of the arguments made in this study, teachers can adopt this approach to provide space for autonomous vocabulary development and help learners experience the target vocabulary frequently so as to add the target vocabulary to their productive knowledge base.

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Dr. P. Sunama Patro, Ph.D. (ELE), EFL-U
The Effects of Frequency of Occurrence on L2 Lexical Acquisition from Reading   324

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The Effects of Frequency of Occurrence on L2 Lexical Acquisition from Reading   325