The Effects of Word Repetition on the Recognition and Acquisition of Words by Iraqi EFL Learners

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1. **Introduction** :

Academically, word repetition is defined as the number of times that a word is found in college textbooks where it is assumed that the repetition is approximate to the distribution of words in spoken languagein classrooms by both teachers and students(Marinellie & Chan, 2006, p. 1002). Studies have established significant effects of word repetition on the spoken word recognition, lexical access and phonological acquisition with high repetition words being recognized faster and more accurately in tasks of word recognition (Marinellie & Chan, 2006). It is widely acknowledged that word repetition is a useful predictor of word difficulty as the vocabulary employed on many beginning learners is selected based primarily on the word repetition. Most readability formulas apply a given measure of word repetition as the principal factor.

At Thi-Qar University, learners of EFL are usually encouraged to employ their mental capacities to the maximum as their teachers may not always teach them technical vocabularies, except those words in subjects of Literature. The leaners are required to be able to form meaning, comprehend and store new words in memory in order to enhance acquisition of English as they gain more word knowledge by forming several meanings of the words that they read.

Vocabulary is central to learning English and looking for order among

the hundreds and thousands of words comprising the lexicon is an incomparable task.Repetition remains one of the many properties of the wordthat leads to the

recognition of the orthographic and phonetic aspects of it (Kordjazi, 2011).Wordrepetition; however, has profound effects on learning and on education in general. Several studies such as Bradlow&Pisoni (1999)and Walley& Fledge (2005) showed FL learners performing well on recognition of English words with high repetition. A study by Marinellie and Johnson (2003)in their first attempt at extending the study of word repetition to the definitional literature discovered the robust effect of word repetition on adjective definitions of Grade 6 and Grade 10 children and of college students. Several content responses categories showed significant main effects of word repetition. Furthermore higher repetition words showed overall higher scores for most of the response categories. The study hypothesized that high repetition words often lead to the activation of a class term. The data also suggestedthat there is a difference in the progress of development for high and low repetition words. For instance, younger participants used synonyms more often in defining high repetition words while older participants used synonyms more often in defining low repetition words.Word repetition may therefore have effects on the choice of words used by individuals especially on word input and word output (Marinellie & Chan, 2006).

1. **ResearchObjective**

The aim of this study is to measure the Iraqi EFL undergraduates' ability to process high and low repetition words according to the recognition of the spoken words and their orthographic representations.

2. **Research Assumptions**

1. This research is based on the assumption that high repetition words are recognized and perceived faster and more accurately in tasks of word recognition.
2. This research is based on the assumption that lexical access to low repetition words is difficult because they are more confusable lexically.

3. **Research Significance**

This research can be considered as a useful ground for English University teachers to focus on vocabulary and to develop methods for teaching Reading Comprehension and Writing Composition. This research shows the importance of high repetition words in learning vocabulary; therefore it suggests to give vocabulary a high profile in the syllabus and the classroom so that students can see its importance and understand that learning a language isn't just about learning grammar. It may be worth teaching students an easier formulation

of Wilkins's view that "without grammar very little can be conveyed, without vocabulary nothing can be conveyed" (1972, p. 5). Focusing on this evidence puts vocabulary learning firmly on the classroom agenda.

4. Lexical Effects: Orthographic Representation

A lexical decisiontask refers to a decision criterion of familiarity that falls between the average level of familiarity for words and non-words that could be used as the base for categorization.According to Balota and Chumbley (1984),a lexical decisiontask can be conducted based on an early familiarity measure. The moment an item is introduced during a lexical decision task, a representation of the item begins to form in the mind of the leaner which becomes more and more like something that is already stored in memory. For word items, the similarity between the forming representation and memory will increase at a greater rate than the non-words rate. Words also reach a higher familiarity level than non-words. In case the decision criterion of familiarity is determined on the basis of the average familiarity for words and non-words, increasing the variability of word lists should have a significant effect on the accuracy but no effect on the reaction time. Increasing the variability of a list of words will not affect the average

familiarity level; however a highly variable list of words will have items that are not very familiar and these items are more likely to be referred to as non-words (Azarbehi, Piercey,& Joordens, 2011).

5. Phonological Effects

There is overwhelming evidence brought forward by Werker, Pegg, & McLeod (1992) which suggests that at birth, human infants are capable of perceiving almost all contrasts that exists in the world's languages. This capability however declines considerably before the infant can ably produce their first words. Adults also are said to be only sensitive to contrasts that are phonemic in their native language According to Brown (2000), speech recognition by EFL learners has primarily been argued from phonological perspectives. The phonological transfer effects from knowledge of their first language (L1), greatly affects how they perceive the FL.

As language teachers, we all at some point experience observing certain patterns of misrecognition or misperception of English words by EFL speakers. This transfer effect mistake brought about by the knowledge of L1 is reflected in their written materials(Nadarajan,

2011).Iraqi speakers for instance are known to have difficulty perceiving and producing the consonant clusters sounds of the English language such as ‘spring’; writing the’ j’ or only ‘g’ in a word such as ‘knowledge’; deleting the ‘w’ and ‘k’ in words such as ‘write’ and ‘know’ respectively. In their formative years, EFL learners have difficulties with writing despite them being exposed to the same text, lesson, and level of interaction because of insufficient vocabulary.

This results in such visual recognition and perception of words being primarily relevant to high repetition words in the language with low repetition words still requiring phonological recoding. Furthermore, transiting from a phonological recoding to orthographic visual recognition of words is less demanding on the working memory thereby improving the summative reading comprehension. This provides opportunities for sub-vocalization as an aid to buffering the storage in working memory.

6. Methodology

Thissectionexplains the methods that have been adapted concerning the pilot study, the selection of participants, obtaining data as well as data analysis and discussion.

7.1 The Pilot Study

Participants in this experiment were twenty undergraduate students, 10 were assigned to the heterogeneous condition while other 10 were assigned to the homogeneous condition. The stimuli entailed two separate word lists both homogeneous and heterogeneous, with each list containing 80 words. Each list had one or two syllables words that in length were five letters. For homogeneous word list (see Appendix A) to reduce the variance of word repetition and orthographic neighborhood count, the chosen items had several restrictions, word repetition (M=33) for instance range was 10-50 and had a standard deviation of 11.22 while the orthographic neighborhood mean was 4.00 and a range of 3-5 with 0.81 as standard deviation. For heterogeneous word list (see Appendix B), mean word repetition and orthographic neighborhood count was similar to the homogeneous word list. However, word repetition and neighborhood count variance was made as large as possible. Word repetition range was 1-2000 and standard deviation was 149.09, the orthographic neighborhood range was 0-19 and standard deviation was 6.73. Generation of non-words was by altering only one consonant.

The results of the mean reaction time and accuracy, with standard

deviation for the two conditions are shown in Table 1(see Appendix 5: Table 1).

The purpose of the experiment was to observe word list variability effect on participants' performance in a lexical decision task. According to this experiment, researchers are now able to put the corner stone towards starting this research.

7.2 Participants

Fifty six students from the English Department / college of Education for Humanities at Thi-Qar University have been randomly chosen to participate in this study. These students were all in the second stage for the academic year 2013-2014 who had studied English for 8 years at secondary schools and at least 4 years at college. Their ages range between 22 and26. Fifty of the participants were females and only 6were males. At college, those students were learning all the four language skills: reading, writing, speaking and listening. They had been taught by the same methods, which focused on grammar instruction, texts translation, and vocabulary memorization.

7.3 Data Collection

This research is based on lexical decision experiment according to

which specific lexical features are often varied while other features are matched. This study is conducted on the repetition effect, therefore, four groups of words were created which differ on repetition but other lexical features such as the average orthographic neighborhood matches. Orthographic neighborhood count is the total number of new words which can be created when one letter is changed at a time.For instance the neighborhood of the word "light" included night, right, might, sight, tight, slight, flight, height, bite, lit, lice, lie, and life. Some of these words have only one sound difference from the target word. This technique is adopted from Azarbehi, Piercey, & Joordens(2011, p 427) which seems to be helpful and thoroughly useful for this research.

Lists of items for a lexical decision task have been first made; the amount of repetition in a list of items can affect the lexical decision performance. Variability for repetition had been manipulated where participants received four trials blocks which contained a pure low repetition items list, a pure medium repetition items list, a pure high repetition items list, and a mixed repetition, high variability list. The lists of the mixed repetition were made by selecting an

equal number of items which vary in their repetition between low, mid, and high (see Appendix 3). Each list consists of 20 variables (items). It is worth noting here that the words in Appendixes 3 and 4 were collected from the variety of reading passages of first and second year college textbooks of English Department. However, the categorization into the four lists was made by two staff professors in the same Department depending on their long life experience in teaching Reading Comprehension.

In order to measure the spoken words with variance of repetition, students were first asked to write the correct word or its synonymy for the explanation given by the researcher. After this step, students were given a head word and then asked to change a letter in order to make new meaningful words (see Appendix 4).

7.4Analysis of Data

The next step is to analyze data statistically. An SPSS program was used to enter the variables. The ANOVA was implemented to test the effect of repetition on the recognition and acquisition of EFL words.

Regarding the first test, the data was examined using ANOVA in order to look for any significantly statistical difference between the scores of word

repetition four lists. Since the researchers want to examine more than two samples and more than one independent variable at a time, the Two Factor (Two way) ANOVA is statistically suitable for this test. The results are presented in Table 2.Table 3 shows the statistically significant results of EFL learners' performance in relation to neighborhood count letter (concreteness) that fulfills the second test.

Table 2 (seeAppendix 5:Table2) demonstrates that learners performed better in pure high and mixed repetition vocabulary than pure low and pure medium list of words. In these comparisons the p-value is below the '5% level' of significance ($p<0, 05$). This indicates that there is a significant difference between the fourlists of variables. The results allow us to reject the null hypothesis (at the $p = 0.05$ level of significance) and conclude that EFL learners performed significantly better at the 0.05 significance level on the high repetition vocabulary test compared to their performance on the low repetition vocabulary test. This suggests that high repetition vocabulary could assist learning of new English words more than low repetition vocabulary.

Table 3 (see Appendix 5: Table 3) demonstrates that learners performed better in correctness and pure high and mixed repetition vocabulary lists than correctness and pure low and pure medium repetition of words lists which suggests that learners are better in performing the orthographic representations of the high and mixed word repetition.

7.5Discussion of Results

The results show that when variability of a list of word items is increased, it both increases the reaction time and decreased the rate of error. It is noteworthy that the mixed lists were created when high, medium, and low repetition words were combined, the resulting list of mixed words had an average repetition rating which fell somewhere between the low and high repetition pure lists and their variability was greater than the pure lists.

Continued exposure to an unfamiliar word or low repetition word in a text or even its comprehension in its context might not result in immediate assignment of meaning to the orthographical representation of the word. Consequently, comprehension and learning are clearly not the same. Whereas comprehension of the text is for interpreting message content, word learning aims to build a lexical system. If there is no direct meaning attached to

the word then learners have to search for and infer meaning by integrating the word's semantic and syntactic aspects using multiple strategic resources.The researchers found that in addition to the easy retrieval of low repetition words, there was also low repetition disadvantage during encoding. This implies that rare words need more processes for encoding to occur. This means low repetition words lead to larger proportions of encoding and are not easy to recognize as they require a lot of time to encode. On the contrary, frequent words are easy to recall due to their familiarity. Higher repetition words are therefore responded to faster and more accurately than low repetition words in lexical decision tasks.

Several studies, such as Prince (1996) state that encoding in the mental lexicon of a new word requires that readers notice the gap in the mental lexicon first, then isolate the word from its context and allocate attention resources to the word's orthographic and semantic properties. The results of the second test show that the word in the mental lexicon requires the reader to recognize the relationship that exists between the lexical form and its meaning, which entails elaboration of some form by associating the word with existing sources of knowledge.

Rubenstein et al (1970) argue that identification of a word involves a random lexical memory search which involves only those words containing orthographic resemblance to the presented word. Since ambiguous words have more lexical entries, the possibility of identifying one of these entries of the lexical early in the processing is enhanced hence making word identification to be more rapid (as cited in Gaskell &Altmann, 2007, p. 160).

7. Pedagogical Implications

1- This research complements previous studies and suggests some re-evaluation of current pedagogical practice. Iraqi college EFL textbooks rely heavily upon the employment of semantic clusters in their presentation of new vocabulary. Consequently, EFL curriculum writers and program planners who currently present students with clusters of semantically and syntactically similar new words may need to reconsider such practice taking into consideration high and low repetition words.

2- Because of the frequent use of linguistic categories, there is likelihood of them being assumed that they exist in the long-term memory.There are several lexical

decision models that utilize decision criteria based on some measure of similarity or familiarity between the orthographic representation and memory. According to this study, the choice of any of those models depends largely on variability, average repetition, or both variability and repetition combined.

3- Studies on word repetition have contributed immensely in understanding the existing relationship between the use of language and the structure of the language. Several recent studies, examining the ability of EFL learners' ability in identifying English words, studied the effect of psycholinguistic factors such as neighborhood density and lexical repetition (such as the study of Sekine, 2006) in determining the role of lexical factors in EFLword recognition.Therefore, it is academically better to establish the objective word repetition value and the relative repetition (=R) in analyzing the effects of lexical factors.

4- Phonological recoding gives ability to the EFL learners to decode new words in order to recognize and access the lexical semantics of the item and create lexical ambiguity. In order for learners to store an individual lexical item's specific

orthographic representation for subsequent visual recognition free of laborious phonological recoding, it is necessary to have a small number of exposures and successful instances of decoding.

5- Reading a text for meaning actually requires rapid text-based and learner-based information integration. The reader must then construct a text base primarily through bottom up processing of the textual input. A text base is constructed from elements directly obtained from the text itself. This procedure is generally gives rise to an impoverished and usually an incoherent network. The reader obtains a coherent network when they interconnect network propositions by complementing inferences and activating and integrating the existing sources of knowledge. The resultant reconstruct was referred to as "the situational model of the text" by Kintsch (1998) which is advised to be applied by teachers of Reading Comprehension of all stages as well as Writing Composition.

6- It is clear that the cognitive mechanisms that are involved in reading comprehension and lexical acquisition are different and are even possibly in conflict. The mental capacity allows learners to

handle a limited amount of materials at any given time as they naturally give more attention to some language aspects than others. Therefore, there are limitations on the amount of materials available to an EFL learner for comprehending and storing new words. This is particularly the case when texts are improved with word interventions that are favorable for word gain promotion. Therefore, teachers are required not to let learners' attention resources to be consumed by word encoding processes, not leaving enough resources for text reconstruction.

8. Conclusion

In conclusion, while it is clear that word repetition is an index of the likelihood that a learner will be familiar with the word and its' meaning, by itself, repetition is a crude index that is sharpened when factors such as pronunciation, meaningfulness, sequential probability, and letter repetition of a wordare considered. Therefore those scaling words for difficulty whether in preparing instructional materials or designing psychological experiments must consider other factors apart from repetition.This is because repetition is only a good predictor of word knowledge when very frequent words are considered.

Consequently, when acquisition of word parts is examined, a similarity between learning of the L1 and FL is shown, at least in the order in which the most regular and frequent word are acquired. This has a significant implication for theEFL vocabulary knowledge measurement as it provides reassurance that word repetition plays a major role in EFL acquisition by learners at least beyond the most basic level of knowledge. It appears that less frequent lexical items are comparatively learned late in the learning process and seem to emerge systematically when large vocabularies are established. Although several studies have been done to determine the effects of word repetition on learning, there is still no clarity on the best methodologies that are conclusive and ultimate in helping leaners to acquire EFL. However, the development of this area of knowledge maybe contingent on growing a vocabulary that is big enough to ably encounter these comparatively rare word parts and appreciate their functions and significance. On a lighter note, however, the order of acquisition that emerges suggests that this knowledge aspect may have factors that it is sensitive to including what transpires in the class and the goals of teaching. Knowledge of words and word parts may therefore be taught

successfully even to learners with small vocabularies. This clearly is an area where there isa good opportunity for further research to provide us with new insights where we have limited evidence.

APPENDIXES

Appendix 1: Examples of homogeneous words that were used in the experiment
ABUSE, SHEEP, GUEST, MOUNT, NURSE, FLOOD
RANCH, PAUSE, SHELF, TOAST, VOCAL, STEAM
Appendix 2: Examples of heterogeneous words that were used in the experiment
DOLLY, AGREE, RIVER, RENEW, THIGH, LATER
DOWER, AGRID, RUPEE, RHEUM, TABAC, LABOR.

Appendix 3: Words used in the lexical decision task categorized according to their repetition

Pure low repetition words	Pure medium repetition words	Pure high repetition words	mixed repetition words
Famine	Think	like	reveal
Verdict	Something	read	probably
Forgery	People	write	quarrel
Willow	Maybe	speak	race
Cod	Ready	listen	love
Trout	day-off	good	torture

Prawn	Right	student	surgery
Squid	Because	classroom	mosque
Certitude	Guess	university	church
Tributary	Mean	college	colorful
Cove	Beautiful	teacher	pale
Lobster	Different	school	bribery
Hoax	Little	home	policeman
Menace	Always	sure	dean
Spat	Make	sad	smuggling
Prejudice	Actually	stage	trial
Tedium	Exercise	year	jury

Appendix 4:Words used in the orthographic representation test categorized according to their neighborhood count and distributed into the four lists of words repetition

Pure low repetition words	Pure medium repetition words	Pure high repetition words	mixed repetition words
Stake	Pain	light	pleasure
Steak	Pane	night	leisure
Toe	Fake	fight	treasure
Tow	Make	slight	measure

Colonel	Dream	might	steal
Kernel	Stream	right	meal
Council	Ferry	tight	book
Counsel	Fury	lice	hook
Jest	Fail	nice	heel
West	Mail	mice	feel

Appendix 5: List of Tables

Table 1. Un-weighted Mean Reaction Time (ms) and accuracies (%) of condition type (SEs/SDs are in parentheses)

Condition type		
	Homogeneous	**heterogeneous**
Reaction time		
Word	687 (96)	765 (255)
Non-word	807 (159)	858 (363)
Accuracy		
Word	91 (5)	77 (7)
Non-word	88 (8)	89 (10)

Table 2. ANOVA for comparisons between lists of words categorized according to word repetition

Word Lists	N of students	N of words	Mean value	Std. Deviation	Std. Error	Mean difference	Sig. (2-tailed)
a pure low repetition items	56	20	15,11	6,289	0,938	3,838*	0,017
a pure medium repetition items	56	20	16,60	5,040	1,301	7,532(*)	0,000
a pure high repetition items	56	20	18,13	5,290	1,366	6,861(*)	0,001
a mixed repetition high variability items.	56	20	13,09	5,325	0,794	4,021(*)	0,010

Table 3. ANOVA for comparisons of word repetition and neighborhood count/word concreteness

Word Lists	N of students	N of words	Mean value	Std. Deviation	Std. Error	Mean difference	Sig. (2-tailed)
a pure low repetition items / correctness	56	10	13,65	4,737	0,851	4,426(*)	0,030
a pure medium repetition items/ correctness	56	10	11,18	4,842	0,870	4,308 (*)	0,039
a pure high repetition items/ correctness	56	10	18,07	6,230	1,177	7,106(*)	0,000
a mixed repetition high variability items/ correctness	56	10	16,87	5,437	1,027	7, 627(*)	0,000

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