L1 Glossing and Lexical Inferencing: Evaluation of the Overarching Issue of L1 Lexicalization

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Abstract

This empirical study reports on a cross-linguistic analysis of the overarching issue of L1 lexicalization regarding two (non)-interventionist approaches to vocabulary teaching. Participants were seventy four juniors at the Islamic Azad University, Roudehen Branch. The investigation pursued (i) the impact of the provided (non)-interventionist treatments on both sets of (non)-lexicalized items related to the difference between the two groups (ii) the importance of the cross-linguistic issue of L1 lexicalization in reference to the significance of the difference between the scores obtained for the two sets of (non)-lexicalized items within each group distinctively. The results of the independent *t*-test between the two groups indicated a significant difference between the experimental and control groups dealing with both sets of vocabulary items. The obtained findings related to the paired *t*-test demonstrated a significant difference between the scores achieved for the two sets of words in favor of lexicalized items in the interventionist group. The results related to the non-interventionist inferencing group demonstrated that the learners had greater familiarity with lexicalized items at pre-testing, and they were more successful in learning lexicalized items compared to non-lexicalized ones at post-testing. However, no significant difference was found regarding the gain scores for the two sets of (non)-lexicalized items in the non-interventionist group. These findings are discussed both theoretically and practically for L2 lexical representation and instruction.

Keywords: L1 glossing, inferencing, L1 lexicalization, institutionalization, bilingual mental lexicon

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1. Introduction

Lexis was blatantly underrated in the field of L2 acquisition and has traditionally been regarded as the Cinderella of the field of SLA. Chacon-Beltran, Abello-Contesse and Torreblanca-Lopez (2010) stated that vocabulary has suffered a lower status in comparison with the other fields of L2 acquisition, primarily grammar. One reason for such a blatant negligence was the apparent dominance of structuralism, language teaching methods and approaches which depicted language as a closed system of manageable grammar rules rather than an open-ended vast system, referred to as vocabulary.

However, in 1986 vocabulary acquisition occupied a legitimate and outstanding position within applied linguistics and the following two decades were dominated by brilliant perspectives regarding different approaches to vocabulary acquisition like lexical development, corpora analysis and bilingual mental lexicon. Today, it is prevalently confirmed that vocabulary should be located at the heart of any language teaching program since as Lewis (1993) would say "language consists of grammaticalized lexis, not lexicalized grammar'' (p. 89).

There is a transparent compatibility between the communicative approaches to language acquisition and the lexical approach to vocabulary acquisition in that both parties pinpoint the fact that all the tasks utilized by teachers should have a crystallized lexical focus. To achieve such an objective, teachers should fulfil several tasks to encourage lexical and not structural comparison between L1 and L2, which is directly related to the theme of our discussion (Lewis, 1997 cited in Hasbun, 2005).

In the field of L2 vocabulary acquisition, the issue of L1 lexicalization has been identified as one of the important factors in reference to its underlying psycholinguistic mental processes about which we do not yet have sufficient knowledge. Therefore, conducting research directed towards the underlying psycholinguistic mechanism involved in this area would be helpful in filling the existing gap in recent literature.

2. Rationale Behind the Study

It is worthwhile to consider the fact that the previous decades were funded with a considerable augmentation of research in the field of L2 lexical acquisition due to the recognition of the fact that vocabulary is crucial to SLA. Yet, what should be technically noticed is that the bulk of research projects conducted in the field of L2 acquisition is devoted to the analysis of

the lexical development in L1 and L2 separately without providing an overarching psycholinguistic perspective. Such scantiness fragmented the field to studies designating, for instance, vocabulary size, passive/active facets of word knowledge, vocabulary instruction and vocabulary learning strategies, stated by Augustin Liach (2011).

Paribakht (2005) contributed a lot by examining the role of L1 lexicalization as a factor of difficulty in the process of inferring lexical items. In other words, she pinpointed an area of difficulty which was recognized by some scholars but totally ignored for a long period of time. However, her research was focused on the process of lexical inferencing which did not allow exploring learning deeply from a pedagogical perspective.

Chen and Truscott (2010) worked on the effect of repetition and L1 lexicalization on incidental vocabulary acquisition dealing with a different L1 and a set of concepts different from those monitored by Paribakht (2005). Their study was mainly concerned with the investigation of the effect of different number of exposures on incidental vocabulary acquisition. In fact, the difference between the present study and the one carried out by Paribakht (2005) and Chen and Truscott (2010) is that it takes a step forward by treating the issue pedagogically in situations in which the likelihood of acquisition of different facets of the selected words are more enhanced.

This being the case, the researchers were motivated to try at least to unravel the enigma of bilingual mental lexicon and the psycholinguistic underlying mechanisms involved in L2 acquisition by uncovering the overarching issue of L1 lexicalization both pedagogically and psycholinguistically pertinent to two (non)-interventionist empirical situations. As such, it claims novelty and originality for its approach to the analysis of the overarching issue of L1 lexicalization in the field of foreign language pedagogy with the hope of being helpful in developing novel theories when combined with the results of the future research.

3. Background Literature

To evaluate the significance of the issue of L1 lexicalization as the major cornerstone of this research, it seems beneficial to initiate the discussion with a more general view regarding the distinctions between L1and L2 acquisition and gradually glide toward painting a more detailed picture of the lexical transfer.

Jiang (2000) proposed a psycholinguistic model with the aim of elaborating on the cognitive distinctions between first and second language vocabulary acquisition. He classified the differences into two primary categories: The first category deals with the contextualized input available to children. It is worth mentioning that the presence of such a contextualized input facilitates the extraction and combination of lexical meaning for children. In contrast, the amount of contextualized input available to the adult language leaner is scarce. The second view however, refers to the adult L2 learners' access to an already established conceptual and lexical system of their L1 which makes the act of translating the items from L2 to L1 possible.

However, the two processes could be viewed from different perspectives. In L1 acquisition, the child becomes exposed to both word form and its meaning simultaneously which leads to an effortless and spontaneous acquisition of the word. However, in L2 acquisition the adult language learner is deprived of having simultaneous access to a rich conceptual or semantic system in L2. Instead, he resorts to the existing linguistic and conceptual system of his L1 which has an intermediating role in the process of L2 acquisition. Jiang (2000) referred to this stage as the hybrid-entry stage because an L2 entry state at this level is an amalgamation of L2 linguistic and conceptual information and the syntax and semantic system pertinent to the learner's L1. From a processing perspective, such a stage could be termed as L1 lemma mediation stage since lexical processing at L2 is mediated by the lemma information provided as a result of the act of translation from L2 to L1. Rationally thinking, such a hybrid entry stage is of great significance because it makes L2 vocabulary acquisition different from L1 vocabulary acquisition.

Kroll and Stewart (1994) and Potter, So, Von Eckardt, and Feldman (1984, both cited in Finkbeiner & Nicol, 2003) described L2 vocabulary task as follows: "The learning of new L2 labels for already established concepts requires the creation of new form-meaning connections. A strong, stable, one-to-one connection between a concept and its L1 needs to give way to a one-to-two connection between the concept and both the L1 form and L2 form'' (p. 370).

The semantic transfer claim depicts the L2 vocabulary acquisition as a process of mapping the already available meanings or concepts in the learners' L1 to the new lexical item in their L2. However, it should be noticed that "the transition from mapping to existing meanings to mapping

to new concepts may not occur for a majority of words, and as a result, L1 lemma mediation often becomes the steady state of lexical performance in advanced learners'' (Jiang, 2004 , p. 419).

The hybrid entry stage encompassing the process linking a word in L2 to its translation in L1 is directly related to the major theme of this research referred to as L1 lexicalization. Logically speaking, foreign language vocabulary items not lexicalized in learners' L1 might be regarded as being more difficult to acquire due to the difficulty of the formation of the hybrid entry stage that involves the process of transferring the semantic and syntactic information in L1 into the empty space of the L2 word. This process makes L2 lexical acquisition possible at the intermediate level and prolongs until the particular information relevant to an L2 word is stabilized in its entry as a result of which the L1 translation is discarded (Jiang, 2000).

However, the lexicalization model provided by Jiang (2000) presents the idea that many lexical items fail to enter this third stage and consequently L1 lemma mediation may become a fixed state of lexical processing even at advanced levels. To provide a vivid description of the relationship between the two concepts of hybrid entry stage and L1 lexicalization, we do require a very transparent and straightforward perspective regarding the two general terms of lexicalization and institutionalization as integral components of the word-formation club indicating the changes that happen to a new word or concept in a language.

Brinton and Traugott (2005) elaborated on the issue of lexicalization as a dynamic process of word formation encompassing compounding, conversion and derivation through which novel lexical items come into existence. This process augments the lexical breadth of a language and simultaneously enriches the sources relevant to any particular field. Accordingly, this dynamic process may lead to the construction of nonce forms. These forms may or may not be conventionally accepted by the other speakers of the community through a process referred to as institutionalization. Brinton and Traugot (2005) defined institutionalization as "the spread of a usage to the community and its establishment as the norm'' (p. 45). Several terms such as 'routinization, 'petrification,' and 'canonization' were coined in the literature to elaborate on the process of creating institutionalized or 'frozen' forms (Brinton & Traugott, 2005).

The issue of L1 lexicalization could also be linked to the idea of lexical relativity proposed by Sprouse (2006, cited in Stringer, 2008). When a second language learner becomes exposed to an English lexical item, he/she

naturally looks for the exact equivalent of that item in his/her L1. In case, he/she becomes provided by the expected information either by referring to an interlocutor or a dictionary, the English lexical form will be ready to be re-labeled with the already perceived phonological and selectional features of his/her L1, stated by Sprouse (2006, cited in Stringer, 2008). "As lexical semantics determines aspects of syntax, non-target-like argument structures are a product not of transfer of lexical parameter settings, but of lexical transfer'' (Juffs, 1996; Inagaki, 2001 cited in Stringer, 2008, p. 238). This belief is generally accepted as lexical relativity. Accordingly, it could be speculated that words not lexicalized in the learners' L1 are more difficult to be relabeled as a result of lexical acquisition.

The existing recent literature on glossing has stirred polemical debate among different scholars with reference to several fields of study including reading research and vocabulary acquisition. Roby (1999) believes that "glosses are many kinds of attempts to supply what is perceived to be deficient in a readers' procedural or declarative knowledge'' (p. 96). Glossing is defined by Segler (2001) as translations or brief explications of difficult or technical texts especially pertinent to unusual vocabularies.

Glossing in the form of direct contrasting with L1 provides brief explications as a lexical task and necessitates the learner to notice new word forms specifically dealing with the non-lexicalized ones which may be considered as being more cumbersome for processing. Such an activity requires attention, increased salience and understanding the fact that no specific item is available to match the input with previously stored mental representations.

As mentioned by James (1994, cited in Lee, 2004) "by contrasting the L1 and L2, learners can recognize that what they already know in the L1 may appear quite new in the L2" (p. 212). In the same way, Nisbet (2010) believes that "when students know a particular word in their native language, learning an English label is a relatively straightforward, easy process'' (p. 13). Such an idea confirms the beneficial effect of L1 on L2 lexical acquisition. Besides, Laufer and Girsai (2008) stated the idea that through the act of translation the learner subconsciously notices the meaning and the word form at the initial levels which leads to the subsequent process of attending to the use of that word at productive levels.

The pedagogical intervention as L1 glossing in this study could be regarded as being justifiable in terms of the idea of consciousness as intention proposed by Schmidt (2001) in which paying attention through

explicit teaching may be required to help the learners notice the non-salient cues or complex ones which are considered to be complicated due to the differences existing between the learners' L1 and L2. As it is evident the non-lexicalized vocabularies are considered to be good exemplars for such a case due to the differences involved in processing such words.

Liu (2008) stated the following idea regarding the role of the learners' L1 in L2 language acquisition "In fact, L1 is present in L2 learners' mind, whether the teacher wants it to be there or not, and the L2 knowledge that is being created in their mind is connected in all sorts of ways with their L1 knowledge'' (p. 65). It is interesting to know that the results of his study regarding the effect of L1 use on L2 vocabulary teaching demonstrated the fact that the proper application of L1 can effectively improve the memorization of new words. In the same way, the results of the study conducted by Latsanyphone and Bouangeune (2009) regarding non-proficient language learners at the National University of Laos in Japan denoted the idea that the application of the learners' mother tongue (L1) as an explicit vocabulary teaching method enhanced the learners' retention of novel vocabulary items both in isolation and in context which could have pedagogical implications for English professionals.

Lexical inferencing is defined by Kispel (2008) simply as the ability to implement two or more pieces of information derived from a text with the purpose of detecting the third piece of information that is implicit. Among several studies pertinent to inferencing, the one conducted by Paribakht (2005), is directly related to lexicalization as the major theme of this study. Paribakht treated the issue of lexicalization in the learners' L1 with respect to their success in inferring the lexicalized and non-lexicalized patterns in reading text through incidental learning. The results of her study presented considerable success in favor of lexicalized words; however, little difference was reported with regard to learning. The obtained findings by Paribakht (2005) revealed the fact that non-lexicalized words may cause a noticeable obstacle in lexical inferencing since the learners were almost three times more successful in guessing the meaning of lexicalized words than that of non-lexicalized ones in both pre-inferencing and post-inferencing administrations.

On the basis of the findings of her study, she concluded that words not lexicalized in EFL learners' L1 may require a special treatment especially dealing with homogeneous groups of learners. She clearly stated the idea that inferencing alone does not provide the learners with the opportunity to

acquire word knowledge beyond familiarity with the word form. Therefore, "it may be more productive to combine inferencing exercises with other vocabulary-related activities and tasks over a period of time to enhance the likelihood of acquisition of different aspects of knowledge and use of selected vocabulary items.'' (Paribakht, 2005, p.731).

Consequently, this research attempted to provide a small contribution to the study of vocabulary acquisition with reference to the cross-linguistic issue of L1 lexicalization in two different empirical situations with the hope of providing a chance of recognizing the process well enough to formulate a theoretical explanation of its mechanism when combined with the strength of the other relevant research programs in future.

4. Research Questions

1) Is there any significant difference between the experimental group that received L1 glossing treatment and the control group involved in the inferencing procedure dealing with L2 words lexicalized in Persian?

2) Is there any significant difference between the experimental group and the control group dealing with L2 words not lexicalized in Persian?

3) How does L1 glossing in the form of direct contrasting affect the L2 learners' acquisition of lexicalized and non-lexicalized words (in reference to the difference between the two sets) in the interventionist group?

4) How does the inferencing procedure affect the L2 learners' acquisition of lexicalized and non-lexicalized words (in reference to the difference between the two sets) in the non-interventionist group?

5. Method

5.1 Participants

Seventy four female third year university students majoring in English Translation with an age range of 20 to 27, studying at the Islamic Azad University, Roudehen Branch in Tehran were selected. All the participants were native-speakers of Persian. Only the intermediate level learners were selected based on their scores on the 2000 level of the Nation's Vocabulary Levels Test (VLT), validated by Schmitt *et al.* (2001). Learners whose score on the VLT was 28 or more out of 30 were selected to make sure that they had mastered the intermediate level. The selected individuals as the members of a homogeneous sample formed the two groups of the study as follows:

The participants in the non-interventionist group were exposed to the selected words through inferencing procedure without being provided with any pedagogical interventions. This group was considered as the control group in this study.

The participants in the interventionist group were expected to learn the selected (non)-lexicalized words by direct contrasting with L1 through glossing and some pushed output production tasks. The treatment in this experimental group aimed at enhancing the learners' depth of linguistic knowledge of the target words, i.e. the treatment was based on word-specific knowledge.

5.3 Instruments

5.3.1 Receptive vocabulary levels test
Nation's Vocabulary Levels Test was the first instrument utilized in this research assessing the learners' receptive knowledge of vocabulary. The students who passed the 2000 level with the score of at least 28 out of the possible 30 were selected as the participants of this study.

5.3.2 Target words
The target words for the study consisted of 76 English words (38 lexicalized and 38 non-lexicalized items, with an equal number of verbs, nouns and adjectives in both groups (17 verbs, 17 nouns and 4 adjectives). The lexicalized items were selected from the TOEFL word lists. The non-lexicalized English words were defined as those that can be paraphrased in Persian but do not have a fixed one word or compound equivalent in Persian based on several bilingual dictionaries and the judgments of several educated bilingual native speakers of Persian.

The final selection including both groups encompassed words which were considered to be relatively difficult for intermediate students (e.g., panacea, surmount). The selected words in both groups belonged to the second tier of the three-tiered vocabulary framework proposed by Beck, McKeown, and Kucan (2002) which included academic vocabulary used in sophisticated academic discourse across a variety of domains.

5.3.3 Lexicalized/non-lexicalized vocabulary test
The (non)-lexicalized vocabulary test was devised by the researchers to examine the participants' knowledge of the words before and after the

treatment. The test encompassed 76 (non)-lexicalized vocabulary items which were arranged randomly. Since the list of target words included some polysemous items, the words were tested in contextualized sentences to elicit the participants' knowledge of the target meanings intended by the researchers.

It must be mentioned that the words were presented in isolated contexts. The virtue of this approach was the helpfulness of the contexts in which they appeared. In other words, the researchers attempted to provide clues to meaning to guarantee reliable inferencing without defining the target words particularly dealing with words with multiple meanings. Three professors were consulted in devising the test. The reliability of this test was calculated by Cronbach's alpha as .70.

5.3.4 Vocabulary Knowledge Scale (VKS)

To compare the performance of the participants of the two sets of words contextualized in sentences before and after the treatment, they were provided with a vocabulary task devised by the researchers on the basis of a modified form of the Vocabulary Knowledge Scale (VKS; Wesche & Paribakht, 1996). As mentioned by Schmitt (2010) "VKS is the best known and most widely used depth of knowledge scale for the most complete description of the instrument'' (p. 218).

The VKS has the advantage of utilizing both self-report and performance data, which provides information about the participants' level of awareness ranging from total unfamiliarity to the capability to use the word with semantic and syntactic accuracy in a sentence. "VKS scale differences are large enough to be self-perceived yet small enough to capture gains during relatively brief instructional periods" (Paribakht & Wesche, 1997, p.179).

The VKS was selected as a measure of assessing the learners' depth of vocabulary knowledge from an incremental (developmental) approach based on the following rationales: First, the provided instructions focused on helping the learners to generate their receptive as well as initial productive ability regarding the selected words. Second, the results of the investigation conducted by Wesche and Paribakht (1996) revealed that the VKS is sensitive enough to both intra/inter-group gains. Such a feature is evidently in conformity with the goals of this research seeking a bimodal comparative analysis regarding a cross-linguistic issue both pedagogically and psycholinguistically.

5.3.5 Scoring

As mentioned by Wesche and Paribakht (1996), the VKS score utilizes an amalgamation of two types of knowledge referred to as self-reported and demonstrated ability. The elicitation categories I and II lead to levels 1 and 2 respectively. In the modified version of the scale the elicitation category III may lead to a score of 2 (if the synonym or translation is wrong) or 3 (if it is judged as being partially acceptable in situations in which the learner knows one of the basic constituents particularly in reference to non-lexicalized words) or of 4 (if it is correct). At this level the researcher intended to make distinction among learners regarding their receptive knowledge by devising three scoring categories presenting lack of knowledge, partial knowledge and full knowledge of a word. In other words, the learner receives a score of 4 if the provided answer presents all the basic lexical constituents of a word at receptive level.

Unacceptable receptive responses at IV category likewise result in a score of 2. The partial knowledge of the learner in category IV leads to the score of 3 and the full knowledge receives a score of 4 respectively. Category V deals with the student's initial productive knowledge at sentence level. The sentences produced at this level are evaluated only dealing with those learners who pass the receptive self-reported categories successfully. If knowledge of a meaning of the word is shown in a category V response but the word is not appropriately used in the sentence context, a score of 4 is given. A score of 5 is given if the word is utilized in the sentence in a way that presents the learner's knowledge of its meaning in that context but it has the wrong grammatical category (e.g., a target noun utilized as a verb- He announced his retire'), or if a mistakenly conjugated or derived form is provided (e.g., 'catched' for 'caught'). A score of 6 reflects both semantically and grammatically correct application of the target word even if other parts of the sentence encompass wrong forms.

5.4 Procedure

Initially, the first version of Nations' Vocabulary Levels Test was administered to the participants to evaluate their vocabulary knowledge. The performance of the learners on 2000 word level was monitored to choose intermediate-level learners whose mean score on the 2000 word level was 28.

The second stage involved pre-testing learners in terms of their performance on two sets of English words with the first set lexicalized and

the second set non-lexicalized in Persian. To accomplish such a task, the students were provided with a vocabulary task which was devised and evaluated by referring to the modified version of the VKS developed by Paribakht and Wesche (1996). The pre-test measured learners' familiarity with the selected words ranging from total unfamiliarity to the ability to use the selected words in sentences with semantic and syntactic appropriateness.

The vocabulary instruction regarding the control group was non-interventionist as the participants were expected to infer the meaning of both groups of words from the provided contexts. In other words, the participants in each class period were involved in a semantic processing activity regarding the intended words as they tried to infer the meaning of the target items from the context of sentences. The vocabulary exercise in this group was limited to selective attention, lexical inferencing, followed by productive tasks including sentence reconstruction in English (in case of successful inferencing) and a pushed out put practice which was not regarded to be obligatory.

Initially, the learners were provided with an inferencing activity in which the intended bold-faced words were contextualized in sentences. The major aim of such a task was to draw learners' attention to the target words to make sure they noticed the selected lexical items. As mentioned by Gass (1988), selective attention is the first stage in the acquisition of a word that ascertains the noticing process. Paribakht and Wesche (1997) stated that selective attention is often implemented as an advance organizer and is regarded to be the least demanding exercise for language learners. The initial inferencing activity at receptive level in this group was subsequently accompanied by some productive activities such as reconstruction and sentence making tasks. In this way the participants were asked to reconstruct meaning by paraphrasing or elaborating on the meaning of the contextualized target words in their own words. This task was aimed at making the initial inferencing procedure meaningful. Finally, the participants were expected to provide original sentences including the intended lexicalized and non-lexicalized words if they could. In fact, the participants in this group were not provided with any explicit teaching intervention. They were provided with some feedback recommendations on their inferencing activity at the final session.

The vocabulary instruction in the experimental group was an amalgamation of a receptive activity followed by a productive one. The instruction in this interventionist group was initiated with a theoretical

description of the issue of L1lexicalization and institutionalization. In other words, the researchers tried to provide the learners with a criterion to draw their attention to the distinction between (non)-lexicalized items. The contextualized words in this group were glossed with a matching activity including the target words and their equivalents or paraphrases in Persian with the purpose of contrasting the meaning of the words with their lexicalized or non-lexicalized forms in their L1.

According to Paribakht and Wesch (1997) such an activity belongs to the category of recognition exercises due to the fact that the learners are provided with the necessary elements and they are expected to match the lexicalized and non-lexicalized words with their equivalents and definitions. They were additionally expected to demonstrate their awareness regarding the issue of L1 lexicalization by choosing between the two available options of L (lexicalized) and NL (non-lexicalized). In a nutshell, the instructor at this stage tried to introduce the term 'noticing' as intention into the metalanguage of the classroom by raising questions like 'what differences did you notice between the two terms ….?' , 'Did you notice that we do not have any special word for such a concept in our language?'

In fact, a similar procedure like the control group was followed except that the learners in this experimental group working individually were involved with a pair work activity involving L1 glossing. In this way at the foot of the page, the equivalents of lexicalized items and the paraphrasing of the non-lexicalized groups, together with equivalents of two to four other words not included in the available contexts were provided in no particular order. The participants were required to match each lexicalized or non-lexicalized word with its equivalent or paraphrase in their L1 with the intention of noticing the lexical cues that require to be processed differently from the way they are presented in Persian due to the lexical differences existing between the two languages of English and Persian.

The interventionist group was subsequently involved in a contextualized productive activity (a sentence translation task). The major aim of such a task was to lead the comparing task to discussion with the intention of making translation purposeful. In other words, the students were provided with the opportunity to consider the expressive possibilities of the target language and to discover that it is not always possible to attain exact equivalence by comparing and contrasting lexicalized and non-lexicalized vocabulary items. The learners were ultimately asked to produce origional sentences including the target words if they could.

The instructor provided the students with some oral corrective feedback and recommendations for each practice activity carried out in each individual session. All the participants in both groups were finally required to submit their papers for further analysis by the instructor. Perhaps, the assigned scores for each class activity did not have any effect on the students' final assessment. The assessment task was primarily used for monitoring the students' progress and performance in each session.

After terminating the treatment, at the end of the course both experimental and control groups were provided with the same vocabulary test as pre-testing to be able to compare the obtained results related to the two groups after being exposed to the interventionist and non-interventionist treatments. Several crucial methodological considerations were taken into account in devising the pre and post tests to augment the validity of the study. First, the pre/post-test tasks were comparable since they both assessed the students' knowledge of words in an incremental fashion by using the VKS. Second, the researchers attempted to avoid any overlap between the content of the tests and what occurred in the course as the interventionist treatment with the purpose of decreasing the learners' chance of relying on the episodic memory. It is worth mentioning that all of the testing sessions were administered by the researcher to assure that the participants received equal amount of time as well as identical instruction. All the tests were done in pen and paper.

6. Results

The descriptive statistics related to the experimental and control groups regarding lexicalized items are presented in Table 1.

Table 1. Descriptive statistics of lexicalized items in the interventionist and non-interventionist groups in pre/post performance

Groups	Pairs	N	Minimum	Maximum	Mean	SD
Glossing	lexicalized Pre	36	47	78	59.69	6.25
	lexicalized Post	36	100	217	164.25	28.21
Control	lexicalized Pre	38	50	66	58.08	4.33
	lexicalized Post	38	64	88	74.76	5.03

To find out if the mean differences between the two groups are significant, an independent *t*-test analysis was conducted. The result of the *t*-test analysis between the interventionist group involved in glossing and the non-interventionist group involved in the inferencing procedure dealing with lexicalized items are presented in Table 2.

Table 2. Result of independent *t*-test analysis for lexicalized items

Variables	Scores	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	sig	t	df	sig
Lexicalized Pre	Equal variances assumed	2.85	.096	1.29	72	.19
	Equal variances not assumed			1.28	61.97	.20
Lexicalized Post	Equal variances assumed	53.66	.000	19.23	72	.000**
	Equal variances not assumed			18.74	37.11	.000**

** (p < .001)

As shown in Table 2, the significance level reported for the Leven's test is .096, which is greater than .05 and not significant at pre-testing. Therefore, we consider the row in which variances are assumed to be equal. The independent samples *t*-test result with (df = 72) and (P = .19) regarding lexicalized items presented the fact that the participants in the two groups did not have any significant difference with regard to their knowledge of lexicalized vocabulary items at pre-testing. However, the *t*-test result at post-testing with (df = 37.11) and (P=.000) with respect to the same group of participants is representative of a significant difference between the interventionist and non-interventionist groups with respect to lexicalized items. Table 3 displays the descriptive statistics related to the experimental and control group for non-lexicalized items.

Table 3. Descriptive statistics of non lexicalized items in the non-interventionist group as inferencing (control) in pre/post performance

Groups	Pairs	N	Minimum	Maximum	Mean	SD
Glossing	Non-lexicalized Pre	36	40	76	52.58	6.88
	Non-lexicalized Post	36	95	198	148.47	26.26
Control	Non-lexicalized Pre	38	46	71	53.55	4.88
	Non-lexicalized Post	38	60	79	70.00	4.82

To find out whether or not the mean differences between the two groups are significant, an independent *t*-test analysis was conducted. The result of the *t*-test analysis between the interventionist group involved in glossing and the non-interventionist group involved in the inferencing procedure dealing with non-lexicalized items are shown in Table 4.

Table 4. Result of independent *t*-test analysis for non-lexicalized items

Variables	Scores	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	sig	t	df	sig
Non-Lexicalized Pre	Equal variances assumed	2.08	.154	-.70	72	.48
	Equal variances not assumed			-.69	62.84	.49
Non-Lexicalized Post	Equal variances assumed	42.82	.000	18.10	72	.000**
	Equal variances not assumed			17.65	37.24	.000**

** (p < .001)

As observed in Table 4, the significance reported for the Leven's test for non-lexicalized items is .15, which is greater than .05 and not significant at pre-testing. Thus, we consider the row in which variances are assumed to be equal. The independent samples *t*-test result with (df = 72) and (P = .48) regarding non-lexicalized items demonstrated the fact that the participants involved in the interventionist and non-interventionist groups did not have any significant difference in reference to their degree of familiarity with non-lexicalized items at pre-testing (P>.05). However, the obtained *t*-test analysis with (df= 37.24) and (P= .000) at post-testing presents that the difference between the two groups was significant in reference to their degrees of achievement regarding the non-lexicalized items (p <.001).

In order to answer the research questions pertinent to the overarching issue of L1 lexicalization, a paired *t*-test analysis was conducted after splitting the file layered by the groups to see whether or not the performance of the students differ significantly regarding the two sets of items (in terms of the intra-relationships between the two sets) in interventionist and non-interventionist groups simultaneously. The results are displayed in Table 5.

Table 5. Result of paired *t*-test for lexicalized/non-lexicalized items in the interventionist and non-interventionist groups

Groups	VKS scores	Lexicalized		-	Non-lexicalized			
		Mean	SD		Mean	SD	t	p
Glossing	Pretest	59.69	6.25		52.58	6.88	6.77	.000**
	Posttest	164.20	28.21		148.47	26.26	5.26	.000**
	Pre to Post testing difference	104.55	27.62		95.88	27.43	-2.51	.017*
Control	Pretest	58.08	4.33		53.55	4.88	6.04	.000**
	Posttest	74.76	5.03		70.00	4.82	5.00	.000**
	Pre to Post testing difference	16.68	4.37		16.44	5.88	-.19	.845

 ** (p < .001)   *(p< .05)

Table 5 presents that the learners in both groups had greater knowledge of lexicalized items compared to their non-lexicalized counterparts at pre-testing (p < .001). The obtained *t*-test results were also significant regarding the mean difference between the two sets of words at post-testing in both groups. However, the measured rates of learning (pre to post-testing difference) was reported to be significant only in the interventionist group (P< .05). In other words, the learners' degree of achievement in the control group was not significant regarding the mean difference between the scores obtained for the two sets of lexicalized and non-lexicalized items.

7. Discussion

The results relevant to the interventionist group in this study indicated a significant difference between the gains obtained by the participants in this group who received a specific treatment as glossing in the form of direct contrasting with L1 and the gains achieved by the participants in the control group who were involved in an inferencing procedure without receiving any interventionist treatment. In other words, the use of L1 translation in teaching both groups of words proved to be satisfactory.

To provide theoretical rationalization for the obtained findings, we could refer to several scholars like James (1994, cited in Lee, 2004), Laufer and Girsai (2008), Nisbet (2010) and Schmidt (2001) who highlighted the natural activation of lexical and semantic information in L1 during comprehension and production in L2. James (1994, cited in Lee, 2004) confirmed the salutary effect of L1 translation on L2 lexical acquisition by asserting the idea that "by contrasting the L1 and L2, learners can recognize

that what they already know in the L1 may appear quite new in the L2. The comparative activity between the L1 and the L2 can greatly contribute to learners learning know-how'' (p. 212).

According to Laufer and Girsai (2008), as the learner becomes involved in L2-L1 translation activities he subconsciously notices the meaning and the word form at the initial levels. The activation of such a process subsequently leads to the process of attending to the use of the selected lexical items at productive levels. Teachers can take advantage of such a contributional process to boost the learners' ability dealing with vocabulary acquisition. In other words, through raising the learners' awareness of their native language which acts as a facilitating bridge, teachers can augment the learners' lexical achievement. Similarly Nisbet (2010) believed that the task of L2 lexical acquisition becomes totally straightforward as soon as the learner links an L2 concept with its L1 counterpart successfully.

Finally, the obtained findings in this research in reference to the provided treatment could be justified in terms of the idea of noticing sparkled by Schmidt (2001). Accordingly, it could be speculated that the presence of consciousness as intention in this study was effective in helping the learners to clearly notice the complicated cues related to non-lexicalized ones that required different mental processing.

Based on the above-mentioned theoretical justifications, it could be suggested that the greater lexical achievement in the interventionist group may be due to the fact that glossing in the form of direct contrasting with L1 which involved brief explications as a lexical task, necessitated the learner to notice new word form specifically in reference to the non-lexicalized ones which are considered to be more cumbersome to process. Such an activity required attention, increased saliency and understanding the fact that no specific item was available to match the input with previously stored mental representations. In other words, translation in the form of direct contrasting with L1 acted as a consciousness-raising and input enhancement task which facilitated the lexical processing of target words. Consequently, the presence of the above-mentioned features may have been helpful in leading the learners towards growing their knowledge of both sets of words incrementally up to productive levels as a result of the pedagogical intervention provided in this study.

Regarding the control group little learning occurred in general dealing with both groups of words. The participants' gain was limited to familiarity with the form of the target items. In fact, the obtained gain score was due to

the practice effect of guessing experience during the course which led to greater number of guessing limited to little success at the level of familiarity with form.

Unlike the first facet of this study which is primarily focused on the analysis of the pedagogical effect of the provided instruction in a comparative manner, the second facet is devoted to the analysis of the overarching issue of lexicalization as a factor of difficulty from a psycholinguistic perspective. It should be remembered; however, that both sets of words were taught based on an identical methodological treatment in each interventionist and non-interventionist group. To reach such a goal the data obtained for the two sets of words in each group was analyzed in a distinct manner.

The obtained data in the interventionist group revealed that the participants had greater familiarity with lexicalized words at pre-testing compared to the non-lexicalized items. Similarly, the comparative analysis of the data at post-testing demonstrated greater achievement in favor of lexicalized items. Furthermore, the results of the *t*-test analysis of the gain scores (pre to post-testing difference) related to the two sets of words, presented a significant difference in favor of lexicalized items.

The results of the study indicated that lexicalization of a word in L1 appears to be a significant factor affecting foreign language learners' success as they try to grow the depth of their vocabulary knowledge in particular L1-directed interventionist situations. The complexity of non-lexicalized items could be rationalized theoretically in reference to several psycholinguistic hypotheses formulated by different scholars like Jiang (2004) and Sprouse (2006, cited in Stringer, 2008) to explain the underlying learning mechanisms involved in bilingual mental lexicon.

Basically speaking, the participants' lesser degree of knowledge gains regarding non-lexicalized items could be justified with respect to the framework of the lexicalization model proposed by Jiang (2004). In second language acquisition the adult language learner resorts to the existing linguistic and conceptual system of his L1 which plays an intermediating role in the process of L2 acquisition through the act of translating the items from L2 to L1. This hybrid-entry stage encompasses an amalgamation of L2 linguistic and conceptual information and the syntax and semantic system related to the learner's L1. As such it is of great significance since it makes L2 lexical acquisition different from L1.

From a processing perspective, such a stance could be labeled as L1 lemma mediation stage since lexical processing at L2 is mediated by the lemma information provided as a result of the act of extrapolation from L2 to L1. Accordingly, it could be conjectured that the learners' greater difficulty with the acquisition of non-lexicalized items in this study may be caused by the difficulty of developing a hybrid-entry stage. The existence of such a pitfall might be due to the learners' failure in finding an exact equivalent for the non-lexicalized items in their first language.

Additionally, the obtained findings in this piece of research related to the greater difficulty of non-lexicalized vocabulary items could be theoretically rationalized in reference to the idea of lexical relativity provided by Sprouse (2006, cited in Stringer, 2008). Accordingly, the difficulty in the acquisition of non-lexicalized items could be explicated in reference to the mapping problems the learners may encounter as they try to re-label the English lexical form with the non-lexicalized perceived semantic, phonological and selectional features of their L1.

It is interesting to note that the results obtained for the non-interventionist group was representative of the idea that L1 lexicalization did not cause any noticeable difficulty in this group. Such a finding may be due to the limited learning occurred in general.

8. Conclusion

In this study, we investigated the effect of the overarching issue of L1 lexicalization pedagogically with respect to the interrelationships between the involved groups. Furthermore, the researchers attempted to scrutinize the issue in terms of its underlying psycholinguistic mechanism involved in the bilingual mental lexicon by considering the intra-relationships within each group in a distinct manner. The obtained findings regarding the first facet of the study denoted the fact that glossing in the form of L1 translation may have a considerable effect on the intake of vocabulary as a result of increased saliency and the formation of associations which leads to a more effective storage of items. The findings are consistent with the results of the two investigations conducted by Liu (2008) and Latsanyphone and Bouangeune (2009).

The results of the study conducted by Liu (2008) denoted the fact that the efficient utilization of L1 can effectively improve the memorization of new words. In the same way, the results of the investigation carried out by Latsanyphone and Bouangeune (2009) regarding non-proficient language

learners at the National University of Laos in Japan supported the beneficial effect of the application of the learners' mother tongue (L1) as an explicit vocabulary teaching method on the retention of novel lexical items both in isolation and in context.

The obtained data regarding the effect of L1 lexicalization as the second facet of the study in the experimental group is consistent with the results reported by Paribakht (2005) and Chen and Truscott (2010). Paribakht (2005) conducted a study to evaluate the influence of first language lexicalization on second language lexical inferencing. The obtained results by Paribakht (2005) denoted the idea that in spite of the fact that learners resorted to somehow similar types and proportions of knowledge sources in the way of inferring both groups of lexicalized and non-lexicalized words, they were shown to be far less successful in decoding the meanings of the non-lexicalized words. Accordingly, it was speculated that lexicalization in L1 could be considered as a factor of difficulty influencing learners' differential success in different areas like L2 reading and text comprehension as well as vocabulary development.

Additionally, the obtained results stand in conformity with the findings reported by Chen and Truscott (2010). They found repetition inefficient in learning non-lexicalized words in comparison with lexicalized ones. Consequently, the findings provided by Chen and Truscott (2010) confirmed the idea sparkled by Paribakht (2005) regarding the fact that non-lexicalized words may require a special type of treatment in the form of explicit intervention particularly with regard to meaning. The findings reported by Paribakht (2005) and Chen and Truscott (2010) may confirm the importance of L1 lexicalization dealing with the two processes of lexical inferencing and incidental acquisition of words. The novel findings from the current study suggest that L1 lexicalization is a significant factor in lexical acquisition in particular L1-directed interventionist situations. However, it is not evident whether or not such an issue matters as an area of difficulty in the other interventionist situations (e.g., L2-based interventionist situations) as well.

9. Pedagogical Implication and Suggestions for Further Research

Pedagogically, the identification of the L1 lexicalization as a significant factor as well as the utilization of appropriate strategies for instructing these specialized group of words which are abundant by the growth of technology in English with respect to Persian as the learners' L1 would help the teachers

to pave the way towards the development of a more efficient vocabulary framework dealing with homogeneous student population in EFL contexts which could be regarded as a significant implication of this study.

In fact, teachers who deal with heterogeneous student population in ESL contexts should also consider the impact of patterns of lexicalization in the learners' L1 on their degree of lexical enhancement at both receptive and productive levels as well as their inferencing ability, and their L2 reading performance. In addition, teachers can take benefit from the results as a deeper understanding of the relationship between the learners' L1 in reference to the issue of lexicalization and the important role it plays in lexical achievement and proficiency. In other words, a deeper understanding of the significance of the issue would act as a prerequisite for devising techniques that enable students enhance their depth of lexical knowledge and learn how to make active use of that knowledge in the real act of communication.

An interesting alternative would be to analyze the effect of L1 lexicalization as a psycholinguistic overarching issue by considering its impact with regard to different L1s. In fact, such an investigation may lead to totally different effects dealing with Latin-based languages as L1 in comparison with the Persian language which is not Latin-based and as such differs from English with respect to the degree and the manner it lexicalizes the vocabulary items. Another alternative to this study would be devoted to a comparative view regarding the performance of English-major and non-major learners on the two sets of vocabulary items. Perhaps, the learners' background knowledge and their degree of involvement could have different impacts on their performances dealing with the issue of L1 lexicalization.

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