The Effect of Recycling Vocabulary on Foreign Language Learning

Mohamed HAMDANE¹
University of Sidi Mohamed Ben Abdellah, Fes.
Hamdane2@yahoo.fr

Ali HAMDANE
Moroccan Ministry of Education
Aali.hamdane@gmail.com

How to cite:

1. INTRODUCTION

Vocabulary is the cornerstone of language learning and proficiency and contributes to the overall scholastic achievement of learners. It refers to the language building blocks or chunks rather than mechanical or grammatical rules as defined by opponents of the lexical approach (Willis, 1990; Lewis, 1993; Nation, 2001), which range from tiny, meaningful combinations of letters such as prepositions, nouns, adjectives, and verbs to longer and more complex masses of words as compound words and expressions. Vocabulary size is not only essential for decoding language input in listening and reading contexts, but it is also a pre-requisite element for understanding texts and answering questions (Beck et al. (2013), as well as for developing and achieving language proficiency and fluency (Nation, 2001, 2020). That means, expressing one’s ideas in writing and speaking fluently and clearly without communication breakdowns or repairs. The literature is rich in methodologies for vocabulary instruction. In this perspective, Nation (2020) recommends strong fluency development for increasing the amount of input and output through repeated and varied encounters and the use of the target language. Thus, the recycling technique meets the Nation’s condition of effective vocabulary learning and fluency development in productive tasks such as writing and speaking.

1 Corresponding author
This condition can be achieved through recycling and scaffolding, but not by repetition drills. At this point, it is noteworthy to make a clear-cut distinction between recycling and scaffolding.

For this research, vocabulary in the recycling experiment is limited to the teaching of simple nouns, verbs and adjectives made through the word formation process using suffixes based on the lexical model proposed by Nation (2001). According to this model, knowing a word involves the form, the meaning and the use. For their form, the learners are required to learn the nature of the word (e.g., verbs, nouns, and adjectives), the correct spelling and pronunciation. As regards their meaning, they need to recognize and internalize the concepts and referents of the words. Lastly, for their use, they need to learn how to use the words in different contexts, respecting their grammatical functions and registers according to the level of formality.

This study aims to measure the impact of the recycling technique on vocabulary learning using a pre-post-test experimental research design. Based on the derived results, this research informs researchers, syllabus designers, and practitioners on the significance of vocabulary revisiting and related meaningful follow-up activities for language learning. The current work paves the way for researchers to broaden the scope of the issue under investigation. Syllabus designers are invited to reconsider the stages of vocabulary learning incorporated in the instructional programs of foreign languages. Thus, providing practitioners with necessary and accurate tools for recycling vocabulary learning in young learners, along with scaffolding and in line with commonly implemented stages of instruction. Whether Moroccan teachers of English adopt recycling or cease their support efforts at the lesson and testing stages, this project focuses on recycling usefulness, leaving the other option for investigation open for further research.

2. REVIEW OF THE LITERATURE

Both recycling and scaffolding are assistant instructional strategies, but they are not defined synonymously in the theory and practice of teaching English as a foreign or second language. Although both techniques seek to build autonomous learners through gradual support in doing tasks, their use takes place at different stages of teaching a lesson. While recycling is a revisiting strategy, which takes place at the end of a lesson or after testing, Richards and Schmidt (2002) referred to scaffolding as a strategy for supporting learners gradually to grasp and internalize the meaning of language input during lessons using modelling and demonstrations. In the lexical context, the former leads students to the fluency realization of previously learnt vocabulary in meaningful and productive tasks, whereas the latter assists learners’ comprehension of new vocabulary in rich contexts. Unlike rote repetition, recycling and scaffolding are two different crucial strategies that teachers can use in meaningful tasks to support and facilitate language development and activation in young learners. Theoretical backgrounds and research on second language acquisition assert numerous pros of vocabulary recycling for learners and instructional practices.

Recycling, as a central focus of this research, seems promising for vocabulary instructional practices. In optimal language classrooms, it is expected that effective teachers often recycle vocabulary in their learning activities by balancing between explicit and implicit methods and adopting effective methodologies. Nation (1990) urged that learners need multiple exposures to vocabulary rather than one single-time exposure, incidental learning from listening or reading experiences. Recycling is the stage of going over previously learnt words and expressions in new and different meaningful contexts than those used in the actual class. Thornbury (2002), as a leading scholar in the domain of English language teaching, proposed the idea of multiple exposure to new words as well as developing strategies for vocabulary recognition and retention in their mental lexicon. Consequently, by reviewing formerly taught lexical items, the instructor assists students in overtaking the recognition stage into the
activation stage and fluency realization in communication. This corresponds to the Nation’s (2020) conditions for ensuring effective vocabulary learning, which includes repetition, noticing, and retrieval, meeting and using words in varied contexts, elaboration, and deliberate attention. Even though vocabulary recycling is widely regarded as a beneficial method for language acquisition, little is known in research about its possible drawbacks which are worth reviewing.

Although theory claims interesting instructional implications of revisiting and reusing words, the drawbacks of the recycling strategy are not well documented in the literature on vocabulary acquisition and learning. While some previous studies prove that recycling enhances comprehension, memory and fluency activation in other language tasks and skills namely reading and writing (Mckeown et al., 1983; Nation, 1990; Laflamme, 1997; Thornbury, 2002; Webb, 2007; Nation, 2020), what is available in the literature brings some insights that it may hinder meaningful learning, autonomy and fluency (Wolfe, 1967; DeKeyser, 2018; Ur, 2022), and it may defy memory (Smith, 2012) from a psychological perspective.

The downsides of the recycling strategy if used mistakenly as a mechanical drill rather than a meaningfully contextualized activity can be traced back to the behaviourism theory and the systematic instructional methods such as the audio-lingual and grammar-translation methods. In this perspective, Wolfe (1967) warns that such decontextualized repetitions for drilling can put students’ creativity and meaningful learning at a disadvantage. Moreover, Smith (2012) found strong evidence of the negative impact of overemphasizing rote memorization through repetition and testing on memory. Likewise, Ur (2022) called for avoiding meaningless copying or repetition of the new items. DeKeyser (2018) summarized the literature on second language acquisition, which shows support for distributed practice, interleaving, and variety in practice, with some exceptions that are related to the automaticity, richness and meaningfulness nature of tasks, and nature of practised knowledge, procedure vs. declarative. Briefly, from what is available in the literature, there are limited downsides to take into account when recycling is implemented properly. The overuse of the same words mechanically and meaninglessly may prevent students from being exposed to a wider vocabulary and harm their ability to produce richer and more meaningful expressions. Furthermore, excessive and mechanical recycling can make learners bored and demotivated if limited to similar contexts and tasks. Unlike mechanical drills and repetitions, research on vocabulary recycling's potential disadvantages is lacking even if it is generally accepted as a helpful strategy for language learning. These issues stem from various methodological and theoretical factors.

Like any instructional strategy, and even though the literature advocates its countless benefits, recycling has some drawbacks that should be considered before being used appropriately. These inconsistencies most likely result from a plethora of factors, such as lack of research, defects in the adopted methodological and theoretical designs, as well as the implementation and interpretations of what constitutes "recycling", learner characteristics (e.g., learning styles, gender, age, interest, and motivation), the overall language proficiency of learners, and the test validity implemented. (See Uchihara et al., 2019, for a detailed meta-analysis of correlational studies on the effects of repetition on incidental vocabulary learning.). By taking into account these conditions, more in-depth research is required to investigate the function and issues of vocabulary repeated exposures in order to contribute to the body of knowledge of language learning. The following section presents the nature of the implemented research design, treatment procedures, and data measures, as well as the tests used for analysis.

3. METHODS
Adopting an experimental design allows comparing the experimental and control groups on a writing test where they were asked to write a paragraph on cultural values they have learnt from their parents and family using word formation they have been introduced to in formal
The Effect of Recycling Vocabulary on Foreign Language Learning

lessons. The targeted items were recycled in the intervention experiment on five occasions in compliance with the Nation’s (1990) threshold of exposure (Min 5; Max 16), which is adequate for instilling meaningful information about the target vocabularies in students’ long-term memory (Andrew & Neil, 2006). By adopting the Nation’s vocabulary acquisition model (the form, the meaning, and the use) in this intervention, students were re-introduced to the pre-taught lexical items in 5 sessions where they had to accomplish 3 different meaningful tasks using the targeted items (nouns, adjectives, and verbs).

The experimental and control groups consisted of 33 students each from the same schooling level and speciality (1st year baccalaureates, aged 16-17). Both groups were instructed following the communicative language teaching approach on the same-targeted linguistic components, and combining implicit and explicit instruction of the targeted items, which consisted of suffixations used for word formation, particularly nouns, verbs and adjectives related to Moroccan cultural values.

The experimental and control groups were selected based on availability sampling with a significant level of homogeneity that was calculated based on their previous scholastic scores on the end-semester reading test (Mean= 3.78; SD= 1.11; and Mean= 3.72; SD= 0.94; at T= -0.23; P= 0.812; P>0.05) as illustrated in the subsequent table.

| Table 1: Independent samples-test for the reading test. |
|---|---|---|---|---|
| Groups | N | Mean | Standard Deviation | T | Sig (2tailed) |
| Experimental group | 33 | 3.787 | 1.111 | -0.239 | 0.812 |
| Control group | 33 | 3.727 | 0.944 | -0.239 | |

*The mean difference is significant at 0.05 level, (2-tailed)

The rationale behind the nature of this homogeneity test is to allow comparability on a methodological side and in compliance with theory and previous research findings. To begin with, in contrast to the explicit instruction method of vocabulary, incidental-meaning-directed vocabulary acquisition emerges from extensive reading (Krashen, 1989; Nagy et al., 1987), which are both used in the EFL Moroccan context. Furthermore, vocabulary knowledge is a key element for reading comprehension in specific terms and school success in general (Becker, 1977; Nagy et al., 1991; Anderson & Nagy, 1991; Beck et al., 2013). The effect of this kind of knowledge is also transferable to the processes of second language development (Koda, 1989). In a refined correlational study by Mckeown et al. (1983), they found a strong relationship between vocabulary extensiveness, reading comprehension, and academic success.

In the context of recycling, Laflamme (1997) reported a significant positive impact of combining the multiple exposure vocabulary method and the target reading and writing strategy on the verbal test scores of participants compared to those who received the traditional instruction method. In the same vein, Andrew and Neil (2006) found a significant increase in the effects of repeated exposure to vocabulary learning in a reading context. In brief, studies have shown a strong relationship between vocabulary revisiting, vocabulary learning, reading comprehension, and academic success.

Akin to the relationship between vocabulary knowledge and reading, it has been widely researched that vocabulary and writing are intrinsically related. Numerous studies support a positive correlation between vocabulary and writing skills (e.g., Olinghouse & Leaird, 2009; Bardel, et al., 2013; Wang, 2014; Schmitt, 2014; Qian, 2019). Common conclusions from such studies suggest that a strong vocabulary is a detrimental element of effective writing since it
allows writers to express themselves precisely and creatively in a way that attracts and convinces readers of the presented ideas or arguments.

After running the reading and writing experiment tests, the collected data were coded and analyzed using the Statistical Package of Social Sciences (SPSS), setting the confidence interval at 95%. Independent sample t-tests were calculated and interpreted to compare the differences in the mean scores of the groups. Along with the latter, a paired t-test was run to observe potential variation in the achievement of both groups on pre-and-post-intervention writing tests. Measures such as standard deviations, mean, significance level of differences, and T values are reported. The writing test was graded on a scale of 6 credits; allowing vocabulary correctness 3 debits, originality 1 debit, organization 1 debit, and grammar 1 debit, thus, allotting 50% of the score for vocabulary to minimize skills-trade-off effect (compensation) and increase the test validity. The piloting of the writing test resulted in a good reliability of α= 70 %. The results of the data analysis are demonstrated and interpreted in the next section.

4. RESULTS
The outcomes of the vocabulary recycling intervention are presented in this section. The summary of the tests used for comparisons is reported in the subsequent tables. Tables 2 and 3 demonstrate the mean differences of the targeted groups on the pre-and-post writing test, whereas Graph 1 displays their achievement variances on both writing tests after the multiple exposure vocabulary experiment.

Table 2: Independent samples-test for the pre-intervention writing test

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>T</th>
<th>Sig (2tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>33</td>
<td>3.424</td>
<td>0.791</td>
<td>0.567</td>
<td>0.573</td>
</tr>
<tr>
<td>Control group</td>
<td>33</td>
<td>3.545</td>
<td>0.938</td>
<td>0.567</td>
<td></td>
</tr>
</tbody>
</table>

*The mean differences is significant at 0.05 level, (2 tailed)

Table 2 above confirms the results of the reading homogeneity test, which showed the absence of differences in the reading skills of the participants of both groups (see methods section). The independent samples t-test for the writing test confirmed the comparability of the experimental and control groups prior to the intervention at P= 0.573 (Mean= 3.424; SD= 0.79; T= 0.567; and M= 3.545; SD= 0.938; T= 0.567 in this order). The following table compares the groups on the post-writing test.

Table 3: Independent samples-test for the writing post-test.

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>T</th>
<th>Sig (2tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>33</td>
<td>4.939</td>
<td>0.826</td>
<td>6.168</td>
<td>0.000</td>
</tr>
<tr>
<td>Control group</td>
<td>33</td>
<td>3.697</td>
<td>0.809</td>
<td>6.168</td>
<td></td>
</tr>
</tbody>
</table>

*The mean differences is significant at 0.05 level, (2 tailed)

The attained results in the table above demonstrate the statistical values for comparing the targeted groups on the post-intervention writing test. Evidently, at a significant level, the experimental group (Mean= 4.93; SD= 0.82; T= 6.16 ) outperformed the achievement of the control group (Mean= 3.69; SD= 0.80; T= 6.16 ) on the writing task at P= 0.000, (P<0.05). Consequently, the differences in their level of attainment after the intervention experiment are statistically significant. The subsequent graph reveals the expected variances in the mean scores on pre-and-post writing tests for each group.
Graph 1.

*Observed variances in the mean scores on pre-and-post writing tests*

Although the control group showed slightly different mean scores and standard deviations on the pre-post-tests (Mean= 3.545; SD= 0.938 and Mean= 3.697; SD= 0.809 successively), the observed degree of variance is statistically insignificant at T= 0.758 and P= 0.454 as demonstrated in table 4 below. In contrast, the experimental group showed statistically significant augmentation on the post-test at T= 8.671; P= 0.000; (Pre-test Mean= 3.424; SD= 0.791 and Post-test Mean= 4.939; SD= 0.826; Table 4).

**Table 4:** Paired t-test for variances in the mean scores on pre-and-post writing tests.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Paired tests</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Mean difference</th>
<th>T</th>
<th>Sig (2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group</td>
<td>Post-test</td>
<td>33</td>
<td>3.697</td>
<td>0.809</td>
<td>0.151</td>
<td>0.758</td>
<td>0.454</td>
</tr>
<tr>
<td></td>
<td>Pre-test</td>
<td>33</td>
<td>3.545</td>
<td>0.938</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>Post-test</td>
<td>33</td>
<td>4.939</td>
<td>0.826</td>
<td>1.515</td>
<td>8.671</td>
<td>0.000</td>
</tr>
<tr>
<td>Group</td>
<td>Pre-test</td>
<td>33</td>
<td>3.424</td>
<td>0.791</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The mean differences is significant at 0.05 level, (2 tailed)*

This section dealt with the data analysis of the experiment on the pre-posttests. The data analysis provided statistical evidence on the enhancement of students’ vocabulary in writing tasks after the revisiting intervention. These interesting outcomes of the study are discussed in light of the theory of language acquisition and previous research.

5. DISCUSSION

Teaching lexical items such as word formation to young learners is an integral part of language learning as it is necessary for language production, particularly writing skills. However, the teaching cycle may cease at the end stage of a lesson and evaluation. The impact of recycling in the teaching of meaningful lexical items and morphological processes is a fundamental element in language learning and solidification. The outcomes of this research conform to the ideas on the prerequisite of meaningful multiple and context-rich exposures to vocabulary instruction rather than one time or limited meetings (Nation, 1990; Andrew & Neil, 2006; Mckeown et al., 1983). Therefore, learners need supplementary and diverse contexts where they can not only recognize and internalize those linguistic items, but also apply them regularly and spontaneously. The current study, regardless of its limitations, provided
significant evidence on the inevitability of incorporating multiple exposure in foreign language classes, especially for vocabulary building and utilization.

5.1. Limitations

In spite of the fact that the derived conclusions from the data analysis and discussion suggested interesting implications for different stakeholders (see concluding section), this research has some issues to be acknowledged. To start with, the small scale of this project threatened the generalizability of its findings. Moreover, its quantitative nature left the extensiveness of the acquired vocabulary untested. Next, the inter-rater reliability effect was unavoidable when only one of the researchers corrected the tests of the experiment. Therefore, the results on the tests might have been different with a large sample and using the four-skill (listening, reading, writing, and speaking) combined measures as Bardel et al. (2013) found in their project. In sum, the observed rise in the scores of the post-tests might not be merely due to the intervention, but possibly to other uncontrolled methodological variables or extraneous variables, particularly learner factors like different learning styles, interests, gender, and motivation (Uchihara et al., 2019). Yet, the study limitations do not undermine its worth for research and pedagogical practices.

5.2. Implications

Despite the aforementioned shortcomings, this study revealed the significant function of recycling as a key stage in teaching the vocabulary of a foreign language and brought about practical implications for different stakeholders, including learners, teachers, syllabus designers, and researchers. For learners, it suggests that carefully designed repeated exposure to language improves comprehension, internalization, and fluency of vocabulary, as it can reinforce their overall language experience by coming across and applying words in various settings. Regarding syllabus designers, they are invited to develop context-rich resources that facilitate meaningful vocabulary building and reuse in order to facilitate the overall language development. They are appealed to design and incorporate follow up activities and fluency tasks in the future teaching programs, which will provide road maps for instructors while teaching, scaffolding, and recycling language components and skills, namely vocabulary for young learners. While instructors can employ various instructional activities and tasks to introduce and revisit such linguistic items while boosting previously learned lexical components. As regards researchers, they can examine how recycling affects vocabulary learning and might develop effective instructional strategies.

In sum, this research on vocabulary recycling benefits learners, teachers, syllabus designers, and researchers. It suggests that meaningful repeated exposure to language improves vocabulary comprehension and fluency. Program designers can develop resources and activities for vocabulary building and rebuilding, educators can use instructional tasks and activities, and researchers can examine the pros and cons of multiple exposures to vocabulary learning. However, precaution must be taken when implementing recycling in order to avoid unfavorable aftereffects, particularly resorting to mechanical drilling of lexical structures over meaning-making and fluency, and shifting attention to vocabulary memorization over other language aspects and competencies.

6. Conclusion

Research on second language learning and its theoretical foundations prove that vocabulary recycling has many benefits for students, particularly understanding, solidification, and fluency realization. Recycling helps students achieve fluency and realization of previously learned language in relevant and useful tasks within the lexical environment. Teachers can employ recycling, as opposed to mechanical repetitions, as a potent strategy in meaningful vocabulary lessons to encourage and facilitate young learners’ language development. Based on these backgrounds, this study examined the impact of the recycling strategy on vocabulary learning.
using a pre-post-test experimental design. The results showed that vocabulary revisiting is essential for enhancing young learners' productive abilities, particularly writing.

This research, however, has some limitations, including its small scale, quantitative nature, and inter-rater reliability effect. The study's findings may not be generalizable due to the small sample size and the use of the writing test in lieu of the four-skill measures. Additionally, the observed increase in post-test scores may be due to uncontrolled methodological variables or learner factors. Despite these issues, the study's worth for research and pedagogical practices remains significant. The obtained results inform syllabus designers, practitioners, and researchers about the importance of revisiting and follow-up activities for language learning. The study suggests syllabus designers and teachers should reconsider vocabulary instructional stages and programs by providing tools for effective vocabulary recycling. However, caution is needed to avoid shifting focus to mechanical drilling of vocabulary over other language skills rather than the desired context-rich multiple exposures and well-chosen revisiting tasks of the targeted lexical structures. Future researchers should consider factors influencing recycling and learning vocabulary by adopting longitudinal and mixed research designs.

REFERENCES


https://doi.org/10.1002/tesj.564


**About the Authors**

**Mohamed HAMDANE** is a PhD candidate in Amazigh linguistics and culture at the University of Sidi Mohamed Ben Abdellah, Fes. His main interests are the morphology and phonology of Amazigh linguistics. Mohammed has worked as a tutor for children for more than twenty years. Recently, he has been on a mission to instruct the Moroccan culture and Arabic to Moroccan immigrant kids in France.

**Ali HAMDANE** is a Master’s holder in the domain of applied linguistics and teaching English as a Foreign Language (EFL) pedagogy from Moulay Ismail University, Meknes. He is currently working for the Moroccan Ministry of Education as a high school teacher of English.