

The Effect of the 4-3-2 Strategy on Iranian Students' Vocabulary Learning and Retention

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Abstract

While extensive research has been conducted on the pedagogical efficacy of 4/3/2 activities—characterized by increasing time pressure during task repetition—in enhancing second language (L2) fluency and accuracy, their impact on vocabulary development remains underexplored. To address this gap, the current study investigates the effects of the 4/3/2 activity on vocabulary acquisition and retention. The study followed a quasi-experimental design that involved 30 intermediate-level students, who were randomly assigned to either an experimental group or a control group. Participants in the experimental group engaged in a monologue task repeated three times under progressively increasing time constraints (4 → 3 → 2 minutes), while those in the control group were required to incorporate target vocabulary into sentences (conventional method). For analyzing the data, an independent t-test was implemented. Overall, the statistical analysis indicated that no significant differences were found between the experimental and control groups in both the posttest and delayed posttest stages. While both groups improved after instruction, and both showed some decline in the delayed posttest, the 4-3-2 technique did not lead to significantly better outcomes in vocabulary learning or retention compared to the traditional method used with the control group. This finding implies that to increase the efficiency of 4-3-2 for vocabulary learning and retention, it will be better if instructors mix this technique with other vocabulary strategies in their classrooms.

1. INTRODUCTION

Vocabulary learning is a central and time-consuming endeavor for a language learner and a central challenge facing language learners is developing a vocabulary sufficient for communication (Bergström, 2024) It requires substantial time and effort as the vocabulary demands for successful language use and comprehension are high.

Unfortunately, conventional methods of vocabulary assessment primarily focus on measuring the breadth of vocabulary rather than its depth. In other words, while these methods

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provide an indication of the quantity of words known, they fail to reflect the level of understanding or the depth of knowledge associated with those words (Nagy & Herman, 1987; Wesche & Paribakht, 1996) Depth of vocabulary knowledge is an important construct that has been claimed to measure the deep understanding of word meanings. In reality, merely presenting word lists and utilizing them within a single day does not ensure that these words will be retained in long-term memory or be retrievable at a later time. Consequently, it is often observed that students tend to forget some, if not all, of the words they have previously learned. There is limited, if any, opportunity to revisit or retrieve these words in the classroom. However, vocabulary learning extends beyond merely recognizing new words and understanding their meanings. As Nation (2001) highlights, successful vocabulary retention involves three key processes: noticing, retrieval, and generative use. Noticing refers to directing full attention to a lexical item and studying it, while retrieval involves recalling and using the words that have been noticed in creative ways. In this context, the frequency of word exposure enhances memorability. Research shows that task repetition can facilitate vocabulary use, with task repetition defined as the repetition of either “the same or slightly altered tasks – whether whole tasks or parts of a task”. (Aaj et al., 2024; Duong et al., 2021; Shi et al., 2024; Sun & Revesz, 2021; Suzuki et al., 2022; Tagliabue et al., 2020)

Over the past several decades, numerous studies within the field of Task-Based Language Teaching (TBLT) have explored the beneficial effects of tasks on vocabulary learning and retention. They have explored the various aspects of task roles in language learning such as task repetition (Abdi Tabari et al., 2024; Almeida & Coupe, 2025; Boers, 2014; Bui & Yu, 2022; Colak, 2024; Duong et al., 2023; Huang & Liu, 2023; Hunter, 2024; Muhammadpour et al., 2023; Rogers, 2023; Suzuki et al., 2022); task response (Allami et al., 2025; Rujas et al., 2024) task design (Davis et al., 2023); task type (Ehsani et al., 2023; Karami & Esrafil, 2021; Kida, 2022; Rabie-Ahmed & Mohamed, 2022); time on task (Gao et al., 2024; Gui & Ismail, 2024; Ogawa, 2021; Rogers & Li, 2025); task modality (Shin, 2024); task orientation (Lepola et al., 2020); task-induced involvement in learning (Gao et al., 2024); task complexity; continuation tasks and real-world tasks (Kim et al., 2021).

Scholars have extensively investigated the impact of incorporating increasing time pressure into task repetition (De Jong & Perfetti, 2011; Lambert et al., 2016; Maurice, 1983). Among the various repetition techniques, the 4/3/2 activity has been particularly well-researched (Boers, 2014). The 4-3-2 technique was originally developed to improve oral fluency through repeated speech production under decreasing time constraints (Nation, 1989). In this technique, learners deliver the same talk three times—to different partners—first in four minutes, then in three, and finally in two. This structure is designed to encourage greater fluency, automaticity, and lexical retrieval with each repetition. Although the 4-3-2 technique has been extensively studied in the domain of speaking fluency, its potential benefits for vocabulary learning—particularly productive vocabulary use—remain underexplored (Kargar Behbahani et al., 2023; Siyanova-Chanturia & Nation, 2017).

Theoretically, the 4-3-2 technique aligns with several influential constructs in second language acquisition. According to Swain et al. (1985) Output Hypothesis, being pushed to produce language helps learners notice gaps in their linguistic knowledge, including vocabulary. Likewise, according to information processing theory, the repeated and pressured nature of the 4-3-2 task enhances retrieval practice, a key factor in vocabulary consolidation. Furthermore, task-based language teaching (TBLT) frameworks emphasize the value of meaningful interaction and task repetition for vocabulary development (Ellis, 2003).

Given these theoretical underpinnings, the current study investigates whether the 4-3-2 technique, traditionally used to improve fluency, can also support vocabulary acquisition among

intermediate EFL learners. Specifically, it seeks to determine whether structured, repeated oral tasks contribute to measurable gains in learners' vocabulary knowledge.

Overall, all of these studies showed that there are not enough empirical studies investigating the impact of the 4-3-2 technique on other parts, especially vocabulary knowledge.

Therefore, the purpose of this study is to investigate the effect of the 4/3/2 technique on vocabulary learning and retention among Iranian learners. Specifically, the research seeks to address the following questions:

1. Is there a significant difference between the means of the experimental group and the control group in the post-test?
2. Is there a significant difference between the means of the experimental group and the control group in the delayed post-test?

The null hypothesis of the study posits that there are no significant differences between the means of the two groups in either the post-test or the delayed post-test.

2. LITERATURE REVIEW

The 4/3/2 activity is a kind of task, whereby learners create a four-minute speech on a topic, then pare it down to a three-, then a two-minute speech (Davis et al., 2023). The 4/3/2 technique was initially developed by Maurice in 1983. This approach involves students repeatedly practicing a task, which contributes to their fluency development. Ellis (2003) identified the 4/3/2 technique as a form of task repetition, where learners are asked to repeat a task at timed intervals. The 4/3/2 activity is a distinctive form of task repetition in which students deliver the same monologue three times, each time under progressively increasing time pressure—four minutes, then three minutes, and finally two minutes. This structure encourages learners to focus on fluency and efficiency in their speech.

According to Nation (1989), the 4/3/2 activity incorporates three key pedagogical features:

1. Repetition of the Same Monologue: Students deliver the same monologue three times, which minimizes the need for additional planning and fosters greater confidence in speaking.
2. Progressive Time Reduction: The time allotted for each delivery is gradually reduced (from four to three to two minutes), increasing time pressure, which is believed to enhance fluency development.
3. Different Interlocutors: Students repeat the task with different partners, ensuring that the focus remains on fluency rather than altering the content to maintain the interest of a single listener.

Although the effects of the 4/3/2 tasks have been investigated on fluency and accuracy commonly (Arai & Takizawa, 2024; Boers, 2014; Bui, 2020; De Jong & Perfetti, 2011; dos Santos & Ramirez-Avila, 2022; El-haq et al., 2025), Nation (2013) argues that repeated exposure and retrieval—encountering vocabulary multiple times in varied contexts, or repeatedly discussing the same topic, which happen in the 4.3.2 technique, are foundational to vocabulary acquisition. This aligns with the broader testing effect literature showing that retrieval practice in compressed time frames strengthens memory. Also, Ellis (2005) introduces timed tasks under time pressure and discusses how faster recall time can enhance implicit lexical access.

Previous Research Findings for 4/3/2 Technique

The 4-3-2 technique, a timed monologic task involving repeated speech under decreasing time constraints, has gained popularity in second language acquisition for its potential to enhance

fluency and promote automaticity in speaking. A wide body of literature explores its effectiveness in improving EFL learners' speaking performance, particularly in terms of fluency, accuracy, and cognitive engagement.

Several empirical studies consistently confirm the positive influence of the 4-3-2 technique on speaking fluency. For instance, [Park and Kim \(2023\)](#) report that progressive time pressure leads to measurable fluency improvements, though these gains often come with trade-offs in complexity and accuracy. Similarly, [Li and Zhang \(2021\)](#) found that learners engaged in the 4-3-2 task showed more fluent speech with reduced pauses and faster speech rates compared to those practicing with fixed-time monologues. The repetition and time constraint seem to encourage proceduralization of speech, allowing learners to process language more efficiently. This fluency-enhancing effect is echoed in previous study which demonstrate that repeated practice under time pressure fosters greater automaticity in oral production ([dos Santos & Ramirez-Avila, 2022](#)).

In contrast, the impact of the 4-3-2 technique on accuracy is more nuanced and context-dependent. Some studies, such as [Nguyen and Nguyen \(2022\)](#) show that when combined with self-assessment or structured peer feedback, the technique supports gains in both fluency and accuracy. This suggests that learners benefit not only from repetition and time constraints but also from opportunities to reflect on and revise their language use. However, other findings, such as those from [Muntasir et al. \(2022\)](#), suggest that even with corrective feedback, accuracy improvements may be limited. This raises questions about whether time-pressured tasks allow enough cognitive space for learners to attend to form, especially at lower proficiency levels. Cognitive factors also play a crucial role in how learners respond to the technique. [Muller \(2022\)](#), using eye-tracking data, demonstrated that learners adapt cognitively to the increasing pressure of the 4-3-2 task.

[Davis et al. \(2023\)](#) explored the impact of different models of task design on ratings of EFL learners' oral fluency. The results demonstrated that the treatment did show a significant increase in fluency, but that there was not a significant difference between the 4/3/2 treatment and the 2/3/4 treatment. As such, the study represents an important opportunity to re-evaluate the effectiveness of a commonly used teaching tool.

[dos Santos and Ramirez-Avila \(2023\)](#) conducted a phenomenological study aimed to identify the perspectives among 12 Ecuadorian ninth graders on the 4/3/2 technique and self-assessment used to improve their English-speaking fluency during a five-week class. The results of the study illustrated that the 4/3/2 technique presented three categories (I learned because I repeated; I increased my speaking speed and decreased word repetitions; I got nervous when I had to speak faster). Self-assessment presented two categories (I learned from my mistakes; We were aware of our progress, which motivated us).

[Hong and Le \(2025\)](#) investigated the improvement in fluency resulting from the 4/3/2 technique. Specifically, seven weeks were devoted to experimenting with 30 students from grade 11 at Luong Ngoc Quyen High School. Pre-test and post-test designs were employed in this study, measuring the features of fluency through speech rate, pauses, and hesitation. The results demonstrated that a significant improvement in fluency was achieved, with scores and positive reactions from the participants. Hence, the researchers claim that the 4/3/2 technique could be considered an effective tool in teaching English speaking skills and is recommended for more frequent use.

[Huang and Liu \(2023\)](#) argue that despite the potency of the 4/3/2 technique for promoting learners' oral fluency, it requires the participation of a partner or an instructor and hence is not suitable for learners' individual practice beyond the classroom setting. Some instructors have thus started to promote another speaking competency training practice, coined the "soliloquizing

technique”—a training technique that is similar to the 4/3/2 activity, but without the need for an instructor or a partner on-site.

Overall, the relevant literature shows that the technique effectively builds fluency by encouraging rapid lexical retrieval and syntactic processing; it also increases cognitive load, which may inhibit attention to accuracy. Their recommendation to combine the technique with explicit strategy training aligns with broader pedagogical perspectives advocating for scaffolding in fluency-oriented activities. While the majority of findings highlight significant gains in fluency and accuracy, the impact on vocabulary remains underexplored (Kargar Behbahani et al., 2023; Siyanova-Chanturia & Nation, 2017).

Previous Research Findings in the Iranian Context

Although existing research has predominantly focused on examining the effects of the 4/3/2 technique on learners' speaking fluency and its efficacy in enhancing oral proficiency (Afshar, 2021; Ansarian & Khabbazi, 2021; Eskandari et al., 2024), there are very few studies on the impact of the 4/3/2 technique on Iranian EFL learners' language learning. Just four such studies (Ghasemi & Mozaheb, 2021; Kargar Behbahani et al., 2023; Movahed, 2014; Tabari et al., 2024) were found in the literature, two of which are described below.

Kargar Behbahani et al. (2023) investigated the effect of the 4/3/2 technique on Iranian EFL learners' speaking fluency with the moderating role of working memory and found that the 4/3/2 technique is a promising technique for enhancing EFL speaking fluency. Another previous study investigated the role of concept mapping and speech repetition in developing EFL learners' oral fluency. Eighty language learners, after passing an in-house placement test, were randomly assigned to two equal experimental groups (Ghasemi & Mozaheb, 2021). The data analyses demonstrated that both groups' oral fluency significantly improved when they were trained to apply concept mapping and the 4/3/2 technique. As limited attention has been given to investigate the direct role of the 4/3/2 in vocabulary acquisition and long-term recall, the present study aims to explore the extent to which the 4-3-2 activity influences L2 learners' vocabulary learning and retention.

3. METHOD

This study employed a true experimental method, wherein participants were randomly assigned to two groups. The research design followed a pretest-posttest control group, comprising an experimental group and a control group. Prior to the intervention, both groups underwent a pretest to ensure that their proficiency levels were not significantly different. Following five instructional sessions, a posttest was administered to compare the mean scores of the two groups. Additionally, 30 days after the posttest, participants completed a retention test to assess the long-term effectiveness of the 4-3-2 technique.

Participants

The study focused on a randomly selected sample of 30 intermediate-level adult students aged between 18-19 from the Shokouh Language Institution in Neka, Iran. Upon selection, the two classes were randomly assigned to either the control or experimental group, ensuring that the study design maintained an element of randomness. The pretest was used to guarantee two groups are homogeneous in terms of proficiency. This assignment procedure aimed to mitigate any potential selection bias and to promote the generalizability of the study's findings to similar educational contexts. None of the participants had previously been involved in similar research, ensuring a

fresh perspective on the research questions. Prior to initiating the study, ethical clearance was secured from relevant institutional bodies. Informed consent forms were distributed to all participants to confirm their voluntary involvement in the research.

Instruments

To assess vocabulary retention at three different stages—pretest, posttest, and delayed posttest—the Vocabulary Knowledge Scale (VKS) developed by Paribakht et al. (1997) was employed. The VKS comprises three distinct sections. In the first section, students were required to list words whose meanings were unknown to them. The second section directed the students to translate the target words into their native language or provide synonyms. Finally, in the third section, students were tasked with incorporating the target vocabulary into complete sentences. The scoring system for VKS was delineated as follows: responses in the first section, where students wrote down unknown words, were scored as 0. In the second section, correct translations or synonyms received a score of 1. In the final section, the correct usage of target vocabulary within sentences earned a score of 2. In terms of validity, the VKS offered a direct measure of what it intended to assess, thereby satisfying the criteria for construct validity.

Procedure

To conduct this research, a language institution in Neka was selected. Thirty intermediate male students were randomly assigned to two groups by randomization: an experimental group and a control group. A pretest was administered and analyzed through an independent samples t-test to ensure that the two groups were nearly homogeneous in terms of vocabulary knowledge. The pretest consisted of 30 vocabulary items selected from the *504 Essential Words* book, including five common or frequent words and twenty-five infrequent words (see Appendix A). To assess the knowledge of those 30 words, the VKS was used. Following the pretest, the five easy words were removed, and the 4/3/2 technique was implemented as a treatment in the experimental group over five sessions, focusing on the remaining twenty-five target vocabulary items to ensure that any gains in vocabulary knowledge are measurable and meaningful, not inflated by already-known items (avoid ceiling effect).

During each session, students in the experimental group were required to write a short story incorporating five target vocabulary words and use these words repeatedly in their narratives. They then had to explain their stories to three different listeners in the class. The first explanation was allotted four minutes, the second three minutes, and the final explanation two minutes. Each learner took turns being both a speaker and a listener three times per session.

In the control group, students were asked to write one example sentence for each of the five target vocabulary words per session and read their sentences aloud to the class. At the beginning of each session, the teacher reviewed the vocabulary from the previous session. After five sessions, a posttest was administered to determine whether there were significant differences in vocabulary knowledge between the two groups. Thirty days later, a delayed posttest was conducted to assess long-term vocabulary retention. The results of the delayed posttest provided insights into which strategy—4/3/2 technique or traditional sentence writing—was more effective for learners' vocabulary retention.

Indeed, in this research, the data collection process was structured into three stages using the Vocabulary Knowledge Scale (VKS). The VKS is a tool designed to measure vocabulary knowledge and its development over time. The three stages of data collection were:

1. Pretest: The purpose of the pretest was to assess and ensure that the two groups (e.g., experimental and control groups) had nearly the same level of language proficiency before

the intervention. This step was crucial to establishing a baseline and ensuring that any differences observed in later stages could be attributed to the 4-3-2 task rather than pre-existing differences in language proficiency.

2. Posttest: The posttest was administered immediately after the 4-3-2 technique to measure the immediate effects on vocabulary learning.
3. Delayed Posttest (Retention Test): The delayed posttest was conducted after thirty days to evaluate the degree of retention of vocabulary during the intervention. This test aimed to determine whether the effects of the 4-3-2 strategy were sustained over time.

To ensure the validity and reliability of the tests, the results from the three stages (pretest, posttest, and delayed posttest) were compared and analyzed by two raters. The raters independently evaluated the responses, and their assessments were used to calculate the coefficient of correlation between their ratings. A high correlation coefficient would indicate that the tests were both valid (measuring what they were intended to measure) and reliable (producing consistent results across different raters).

Data Analysis

In this study, an independent samples t-test was used to analyze the data and compare the means of the experimental group (which received the 4-3-2 strategy) and the control group (which did not receive the intervention or received a different treatment). The goal of this analysis was to determine which strategy was more effective in facilitating vocabulary learning and retention. The results are shown in [Tables 1](#) and [2](#) below.

4. RESULTS

This section reports the results of independent samples t-tests, which were run to examine whether there were statistically significant differences between the experimental and control groups at the posttest and delayed posttest stages. [Table 1](#) provides the descriptive statistics (means and standard deviations), and [Table 2](#) shows the independent t-test table.

Table 1: Group Statistics

Stage	Group	N	Mean	Std. Deviation	Std. Error Mean
pretest	Experimental	15	5.0333	1.39151	.35929
	Control	15	4.7000	2.11542	.54620
posttest	Experimental	15	8.5833	2.10371	.54318
	Control	15	8.5667	2.65832	.68638
delayed posttest	Experimental	15	6.5833	1.86525	.48161
	Control	15	7.5167	3.36933	.86996

Table 2: Independent Samples Test

Stage			Levene's Test for Equality of Variances		t-test for Equality of Means							
			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper	
pretest	Score	Equal variances assumed	.575	.455	.510	28	.614	.33333	.65377	-	1.00586	1.67253
		Equal variances not assumed			.510	24.205	.615	.33333	.65377	-	1.01539	1.68205
posttest	Score	Equal variances assumed	1.227	.277	.019	28	.985	.01667	.87530	-	1.77630	1.80964
		Equal variances not assumed			.019	26.595	.985	.01667	.87530	-	1.78058	1.81391
delayed posttest	Score	Equal variances assumed	3.103	.089	-	28	.356	-.93333	.99437	-	2.97021	1.10354
		Equal variances not assumed			-	21.844	.358	-.93333	.99437	-	2.99638	1.12971

This study aimed to examine whether there are significant differences between Group 1 and Group 2 in the posttest and delayed posttest. The results are summarized based on the two research questions:

1. Is there any significant difference between the means of Group 1 and Group 2 in the posttest?

To investigate whether the 4-3-2 technique had a significant effect on learners' vocabulary learning, an independent samples t-test was run comparing the posttest scores of the experimental and control groups. The experimental group ($M = 8.58$, $SD = 2.10$) and the control group ($M = 8.57$, $SD = 2.65$) showed very similar mean scores. The results revealed no statistically significant difference between the two groups, $t(28) = 0.019$, $p = .985$. The p-value is far above the commonly accepted threshold of .05, indicating that the observed difference in posttest performance is not statistically significant. In other words, although both groups improved from the pretest stage, their performance on the posttest was essentially equal, suggesting that the use of the 4-3-2 technique in the experimental group did not result in significantly greater gains in vocabulary learning compared to the control group at this stage. To arrive at a better picture of the significance level, the effect size was calculated, and Cohen's d was computed to be 0.006. Since the effect size is less than 0.3, we conclude that there was a small impact on the outcomes. It seems that the treatment was ineffective.

2. Is there any significant difference between the means of Group 1 and Group 2 in the delayed posttest?

To assess the long-term retention of speaking skills, an independent samples t-test was also conducted to compare the delayed posttest scores of the two groups. The control group ($M = 7.52$, $SD = 3.37$) had a higher mean than the experimental group ($M = 6.58$, $SD = 1.87$), indicating a potential difference in retained performance over time. However, the t-test result showed that this difference was not statistically significant, $t(21.844) = -0.939$, $p = .358$. Since the p-value is greater than .05, we fail to reject the null hypothesis. This means there is insufficient evidence to conclude that the groups differed in their delayed posttest performance. Although the control group had a slightly higher mean, this difference could be due to chance rather than the instructional technique used. To arrive at a better picture of the significance level, the effect size was calculated and Cohen's d was computed to be 0.342. Since the computed effect size for the posttest was around 0.3, it means the impact was low and negligible. This statistic means that the negligible impact of the use of the 4-3-2 technique on vocabulary learning of the learners was also witnessed in the delayed posttest, which could signify limitations associated with the use of this technique in the improvement of vocabulary learning and retention.

5. DISCUSSION AND CONCLUSION

The results of the study revealed no statistically significant difference between the two groups, which means that the participants in the experimental group did not have significantly greater gains in vocabulary learning compared to the control group. The same results were shown in the delayed posttest, which demonstrates that there is insufficient evidence to conclude that the groups differed in their delayed posttest performance in terms of gains in vocabulary learning. This finding is in line with the findings of some previous studies (Boers, 2014) claiming the negligible effect of this strategy on vocabulary learning. The results and findings of the present study go against many previous studies, which demonstrated the positive impact of the 4-3-2 strategy on vocabulary learning and language fluency (Afshar, 2021; Ansarian & Khabbazi, 2021; Eskandari et al., 2024; Li & Zhang, 2021; Muller, 2022; Nguyen & Nguyen, 2022; Park & Kim, 2023).

Despite the potency of the 4/3/2 technique for promoting learners' vocabulary learning and retention, it requires the participation of a partner or an instructor and hence is not suitable for learners' individual practice (Huang & Liu, 2023). Although 4-3-2 has become a commonly adopted and used activity in the language classroom, it should be able to withstand more critical investigation into how it functions in the classroom. For example, Nation (2016) argued that there were assumptions being made about many language activities, including 4-3-2, and that they should be subject to further exploration and research. This would help teachers to come to a greater understanding of the language classroom. Given that Nation (2016) has been a strong advocate for 4-3-2, bringing attention to this issue should give credence to the need to explore 4-3-2 and alternative variations of the activity.

At least two complementary questions remain about the effects of the 4/3/2 activity. The first question is whether the activity influences other dimensions of the learners' output apart from fluency. The second question is whether the shrinking time window is vital for the activity to bring about the attested changes in fluency. Could improvements in fluency not be obtained if learners repeated the same talk without time pressure? In fact, studies have reported fluency gains as an effect of task repetition alone (Bygate et al., 2001).

The results and findings of this study are counterintuitive, which means that they go beyond the normal and natural expectations concerning the effectiveness of this technique. The statistically insignificant differences at the posttest might be attributed to such issues as the inappropriacy of the 4-3-2 technique to the context at hand, the learning potential of the participants, the task motivation, or the ineffective treatment of the study. Of course, such results and findings, though

they are rare, exist in the related literature. For instance, Nation (2016) argued that there were assumptions being made about many language activities, including 4-3-2, and that they should be subject to further exploration and research. Hence, it should be able to withstand more critical investigation into how it functions in the classroom. Boers (2014) demonstrated that some assumptions made about 4-3-2 were incorrect when applied in the classroom. It seems that a constant time condition can lead to improvements in fluency and accuracy, supporting (Boers, 2014). Additionally, a shrinking time condition has only been shown to lead to improvements in fluency, though it does not support improvements in complexity and accuracy.

The technique is grounded in cognitive load theory and retrieval practice. By limiting time, it reduces the cognitive burden and encourages learners to prioritize key information, facilitating more fluent, semantically focused communication (Ericsson et al., 1993; Nation, 1989). Repeated practice also strengthens procedural knowledge, aiding in faster vocabulary retrieval and syntactic automatization. All variations of 4-3-2 display the concept of pushed output (Swain et al., 1995). Studies have shown that pushed output can be beneficial for improving language outcomes. (Izumi, 2002) found that learners who were required to produce output in addition to receiving foreign language input had higher rates of grammatical comprehension than their classmates who did not produce output. Additionally, Sadeghi Beniss and Edalati Bazzaz (2014) found that pushed output led to improvements in accuracy. Thus, it is clear that there are benefits to implementing activities that involve pushed output. A variation of 4-3-2, which allows additional time for output, may also prove beneficial. Despite the potential of the 4/3/2 technique for promoting learners' fluency, it requires the participation of a partner or an instructor. Although Nation and Newton, 2009 call the 4/3/2 technique a 'well-researched activity', only a handful of published studies have investigated its effectiveness. It is also important to note that the fluency gains reported in these two studies concern a comparison of the talks within the 4/3/2 sequence, not the potential effects of the activity on fluency in the longer run. A more recent study by De Jong and Perfetti (2011), however, does indicate that incorporation of a series of 4/3/2 activities in an ESL course can produce long-term benefits for learners' fluency. Hence, it seems that the negligible effect of this technique on vocabulary learning and retention of Iranian EFL learners might be due to the limited time on task on the part of the participants, the limited pushed output, the low facilitative role of the teacher implementing this technique, and the task motivation level of the learners. Each of these variables affecting the level of effectiveness of this technique in various aspects of language learning, specifically vocabulary learning, poses challenges and concerns and a ground for further research in this domain.

Conclusive Implications and Suggestions for Further Studies

To conclude, the use of the 4-3-2 technique did not induce greater gains in vocabulary learning in this study. It might be due to a number of reasons, such as the role of the teacher in the classroom, the level of engagement of the learners, the teaching materials covered in the class, or the manner in which the 4.3.2 technique is practiced in the classroom. Hence, the negligible impact of the use of the 4-3-2 strategy on learners' vocabulary learning and gain found in the present study, which is corroborated by a few studies in the literature, shows that more studies need to be conducted in this field to come up with conclusive and more reliable conclusions in this regard. However, it is noteworthy to mention that the scope and the design of studies have an influential role in the results and findings of the studies conducted in this domain. Overall, this area of study demands further investigation.

The 4/3/2 technique can serve as a supplementary approach, used alongside traditional methods like memorization and translation, to enhance the overall effectiveness of the learning

process. By integrating the 4/3/2 technique with conventional strategies, learners may benefit from a more comprehensive and dynamic approach to vocabulary acquisition and retention.

This study offers several recommendations for both teachers and learners. By incorporating the 4/3/2 technique with other strategies in the classroom, to some extent, teachers can facilitate students' ability to retrieve vocabulary when needed, enhancing their recall and application of learned words. Additionally, students can actively use target vocabulary in their communication, promoting greater fluency and confidence in language use.

Future research should explore the mechanisms behind these trends, possibly by examining qualitative factors such as participant motivation, engagement levels, and external influences that might have affected retention. Additionally, as there are not enough empirical studies on this topic, the researchers can replicate this study in another context to determine whether they reach the same results or not.

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Appendices

Appendix A: List of vocabulary from the 504 Essential Words book

Typical	Keen	Jealous	Tact
Oath	Expensive	Gallant	Numb
Wager	Vapor	Minimum	Villain
Evade	Theory	Burden	Amateur