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Digital-Assisted Translation and Vocabulary Retention for EFL Undergraduate Learners

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ABSTRACT

Digital-assisted translation has changed the process of vocabulary learning. There is very little evidence that investigates their impact on learning vocabulary. Therefore, this study investigates the impact of digital-assisted translation on vocabulary retention of EFL undergraduate learners. 30 learners were randomly divided into two groups, one experimental, using a translation application (Google Translate) to complete vocabulary activities, and one control group, using traditional tools. Both groups completed an immediate post-test and delayed retention after two weeks. The study found that, although the assisted-translation group scored above average on the immediate test, there was a severe drop of retention in the delayed test. In contrast, the control group was better in long-term retention. The study indicates a clear risk of translation applications that in turn may degrade the process of vocabulary acquisition. It is important to train learners to limit one-click translations and use more context-based strategies that enhance promoting long-term building.

Keywords: EFL learners, Digital-assisted translations, Traditional Translation, Vocabulary Retention

استخدام البرامج الإلكترونية في الترجمة وأثره في قدرة طلبة الجامعية من متعلمي اللغة الإنجليزية كلغة أجنبية على الاحتفاظ بالمفردات

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المُستخلص

أدّت الترجمة باستخدام التطبيقات الالكترونية إلى تغيير كبير في عملية تعلّم المفردات، إلا أن الدراسات التي تبحث في أثرها ما تزال محدودة. تهدف هذه الدراسة إلى تقصّي أثر الترجمة المدعومة رقمياً في الاحتفاظ بالمفردات لدى طلبة المرحلة الجامعية من متعلمي اللغة الإنجليزية كلغة أجنبية. تم توزيع ثلاثين متعلماً عشوائياً على مجموعتين: مجموعة تجريبية استخدمت تطبيق ترجمة (Google Translate) لإنجاز أنشطة المفردات، ومجموعة ضابطة اعتمدت على الأدوات التقليدية. خضعت المجموعتان لاختبار بعدي فوري واختبار احتفاظ متأخر بعد أسبوعين. وأظهرت النتائج أنه على الرغم من تحقيق المجموعة التجريبية درجات أعلى من المتوسط في الاختبار البعدي الفوري، إلا أن أداءها انخفض بشكل ملحوظ في الاختبار المؤجل، مما يشير إلى ضعف الاحتفاظ طويل الأمد بالمفردات. في المقابل، أظهرت المجموعة الضابطة قدرة أفضل على الاحتفاظ بالمفردات على المدى الطويل. وتشير هذه النتائج إلى أن الاعتماد المفرط على تطبيقات الترجمة قد يضعف عملية اكتساب المفردات. وتؤكد الدراسة أهمية تدريب المتعلمين على الحد من استخدام الترجمة الفورية بنقرة واحدة، واعتماد استراتيجيات قائمة على السياق تسهم في دعم بناء المفردات على المدى الطويل.

الكلمات المفتاحية: متعلمي اللغة الإنكليزية كلغة اجنبية، تطبيقات الترجمة الرقمية، الترجمة التقليدية، الاحتفاظ بالمفردات.

Introduction

Vocabulary knowledge is one of the core components of second-language proficiency. It is broadly recognized as the basis of the ability of learners to read, understand, communicate and acquire the comprehensive linguistic competency. Vocabulary retention even to this day is still one of the persistent issues of English as a Foreign Language learners (EFL). The last ten years have been associated with the fast growth of digital resources, specifically, mobile translation apps that have dramatically changed the way learners treat unknown lexical entries. Translation applications allow immediate access to meanings and require little cognitive effort (Alzain & Algobaei, 2025; Ahmad et al., 2024).

Even though this implementation can be useful, it is associated with superficial processing and inefficient use of vocabulary acquisition strategies. This usually results with weak long-term retention (Xu et al., 2025; Fakira et al., 2025). Scholars have noticed that vocabulary retention improves when a learner deeply processes new words by elaborating, contextualizing and rehearsing them (Shabaneh & Farrah, 2019). These applications on the other hand encourage instant word replacement instead of meaningful processing. Although many studies have explored digital-assisted learning of vocabulary, most of them emphasize the benefits of instructional apps. Not many studies have looked at the excessive use of digital-assisted translation applications and their possible negative impact on vocabulary acquisition. As a result, there is a research gap: despite the increased popularity of translation applications, its potential effects on the ability of learners to retain new words have not been investigated in detail (Kim et al., 2025, Fakira et al., 2025).

According to scholarly reports, English as a Foreign Language (EFL) teachers have found that learners have a strong dependence on translation apps to complete reading activities, writing assignments, and

participating in classroom learning (Bahri & Mahadi 2016). Students often use translation techniques at sentence levels instead of engaging directly with the target lexical items. Although helps them to accomplish their assignment and task quickly, it affects crucial cognitive processes, which are necessary for long-term retention. Subsequently, learners tend to exhibit strong short-term retention and substantially weak long-term retention (Balboni, 2017).

Such a discrepancy between the convenience of translation applications and the insufficiency of the learning outcomes requires scholarly investigations using controlled experimental studies. Given these concerns, this study examines how overusing translation apps influences EFL learners' vocabulary retention compared to more cognitively engaging methods. The study contrasts learners who rely on translation apps with those who learn vocabulary through context-based activities and guided practice. By testing retention over time, the research aims to reveal whether heavy dependence on translation apps produces measurable declines in vocabulary retention. Understanding this relationship is essential to adopt strategies that promote long-term retention. Therefore, the study assigned three research questions to address:

RQ1: Does using digital-assisted translation applications significantly affect EFL learners' immediate vocabulary retention?
RQ2: Does using digital-assisted translation applications significantly affect EFL learners' delayed (long-term) vocabulary retention?
RQ3: Are there significant differences in vocabulary retention between learners who rely on digital-assisted translation applications and those who use traditional vocabulary learning strategies?

Literature Review

The last ten years have witnessed a significant growth of studies on translation tools for vocabulary acquisition. They demonstrate a multifaceted interdependence between technological use and lexical growth. One of the underlying motivations in the literature is that digital tools provides both easy and motivating platforms for vocabulary learning. However, they also can create a risk of superficial processing, which undermines long-term retention. Researchers have argued that the effectiveness of such tools depends not only on the technology itself but on pedagogical contextualisation that situates their use (Nation, 2013, Schmitt, 2014; Godwin-Jones, 2018).

Early studies have pointed out the contradiction usually accompanied with excessive dependency on direct translation, which affects learners' retention. Liang and Xe (2018) show that these applications are often designed to promote translation-based shortcuts. These applications do not support contextual information of the words that supports long-term retention (Hulstijn, 2001). This paper argues that digital-assisted application support isolated word-meaning pairs as opposed to the incorporation of the lexical items into their semantic networks which in turn leads to poor retention.

Omar (2021) explicitly condemns digital translation as it limits intensive linguistic processing. Digital translation affects learners' ability to build contextual meaning and build valuable lexical knowledge. This position aligns with studies on second language acquisition that demonstrates better vocabulary retention when learners engage in processes which require elaboration, inference, and repetitive recall, as opposed to immediate translation (Laufer and Hulstijn, 2001). A pedagogical gap identified by Omar (2021) is that most teachers do not realize the extent to which learners rely on translation tools.

Consequently, these tools can support superficial processing as opposed to learning in-depth vocabulary.

A balanced view in empirical research considers translation as an instrument of dissemination of pedagogy rather than an obstacle. For Alaboud (2022), in structured activities, translation can raise learners' awareness of linguistic structures and support comprehension. Alaboud (2022) indicates that translation is not inherently detrimental. Therefore, it depends on how it is used in educational activities. Purposeful translation when it is carried with a structural analysis facilitates deeper processing, but uncontrolled, tool-driven translation stimulates superficial involvement (Nykyporets et al., 2024). This view aligned with existing theories about vocabulary teaching that emphasize the usefulness of contrastive analysis and metalinguistic reflection carefully instructed (Schmitt, 2014; Nation, 2013).

As Guo et al., (2022) prove, self-regulation and peer scaffolding have a significant impact on vocabulary learning using mobile apps like Shanghai. They find that mobile assisted learning, in combination with goal-setting, peer support, and teacher mediated integration into classroom pedagogy, yield better results. This observation indicates that technology in itself is not useful in supporting learner's retention. Instead, learners make use of the combination of autonomy and structured engagement in learning activities. This is consistent with self-regulated learning theories as well as studies that have proven repeated retrieval to be a key indicator of vocabulary consolidation (Ariel & Karpicke, 2018). Klimova and Pikhart (2023) believe that it is not digital tools, but the pedagogical methods that influence vocabulary outcomes. They emphasize multimodal tasks as effective as they result in positive feelings, attention, and increases engagement with lexical items.

An overview of the available literature shows that there is a common trend: the efficient vocabulary retention does not depend on technology as such, but on the quality of the cognitive load and the design of the instructional activities that governs its implementation. Translation-assisted tools can either support or hinder lexical development, depending on whether learners engage actively, repeatedly, and meaningfully with new linguistic items. In this regard, current studies support pedagogical approaches that incorporate digitial-assisted translation in structured, purposeful, and socially supported learning to reduce superficial learning and promoting long-term retention. However, this study departs somewhat from the current literature and argue that digital-assisted translation apps may weaken learners' retention as a result of unproductive retrieval. This is quite consistent with cognitive theories of vocabulary acquisition, which stress that the repetitiveand meaningful encounter of words should take place (Nation, 2017, Schmitt, 2014).

Methodology

The current study applied a quantitative experimental design to investigate the impact of digital-assisted translation applications on vocabulary retention among EFL learners. The study conducted pre-test and post-test for both experimental- and control groups. By conducting this approach, the study evaluated learners' lexical knowledge before and after the intervention. This methodological option was based on its ability to isolate the effect of translation-app use on vocabulary retention and at the same time control the confounding variables.

The sample included thirty EFL learners. The learners were randomly divided into two similar groups. The experimental group includes fifteen learners who actively used a digital-assisted translation

application (Google Translate) during in-class vocabulary learning tasks. The control group includes fifteen learners who used only traditional instructional strategies, including dictionaries and taking notes. The level of English proficiency of all the participants was intermediate, as determined by the results of the Oxford Online Placement Test (OOPT).

The material used in the current study included a list of sixty academic English vocabulary words that was considered appropriate for learners of intermediate proficiency level. For the experimental group, digital-assisted applications were used to aid in the process of performing vocabulary exercises. Both cohorts completed a pre-test to measure retention of the target lexemes including multiple-choice, matching, and cloze-type prompts. Moreover, the participants were subjected to a similar instructional activities which included the target lexical items. Both groups were taught by the same instructor. The instructor followed the same instructional plans to guarantee consistency between groups.

The intervention lasted four weeks, with two sessions per week. Each session lasted 60 minutes. During the first week, the learners completed a vocabulary pretest that meant to determine the level of knowledge of the participants. During the intervention, the experimental group used a digital-assisted application to accomplish the assigned learning activities. The control group used traditional methods with no digital-assisted applications. By the end of the intervention, a posttest was conducted to learners' vocabulary retention. To explore long-term retention further, delayed posttest was administered two weeks later. However, the study recognizes the duration of the intervention as a limitation to be considered in future studies.

The statistical test was used to assess the intervention effects using two key tests. The paired-sample t-tests were used to test the changes in each group comparing their pre-test and post-test scores. The test is usually applied when the same subjects are assessed at two time points so that the researchers can be able to determine whether an intervention has brought about a significant change in the group. Moreover, the results of the post-test performance of the experimental and control groups were compared using independent-sample t-tests. This test is considered suitable when there is a need to compare two different groups with each other as to whether one group performed better than the other after the intervention. The analysis compares the post-test scores, and thus, determines whether or not the treatment had a significant impact. These tests combined give a clear view of within-group improvement and between-group differences.

Results

The findings point to the fact that there was a major difference between the vocabulary retention of the learners who overused translation apps and those who used traditional learning strategies. The pretest showed that both groups were at similar levels with the mean scores of 32.4 and 33.1 out of 30, respectively. Table 1 illustrates the pretest comparison.

Group	N	Mean	SD
Experimental Group	15	32.4	3.18
Control Group	15	33.1	3.05

Table 1: Pre-test Vocabulary Comparison

The posttest revealed a distinct divergence of the two groups. Table 2 shows that the experimental group had a mean score of 38.7, which is a slight improvement of 6.3 points relative to their pretest. The control group scored 48.5, with an improvement of 15.4 points compared to their pretest (See Table 2).

Group	N	Mean	SD
Experimental Group	15	38.7	3.42
Control Group	15	48.5	3.88

Table 2: Post-test vocabulary statistics

A paired-samples t-test was performed on the results of each group that showed that the differences in scores were statistically significant ($p < 0.01$). The extent of improvement was much greater in the control group. The independent-samples t-test of the posttest scores of the experimental and control groups proved that the difference in the vocabulary retention was statistically significant ($t = 5.83$, $p < 0.001$). The learners who applied only the traditional strategies retained significantly more vocabulary than the learners who overused the translation apps (See Table 3).

Test Type	Group(s)	Mean Difference	t	df	p
Paired-samples t-test	Experimental (Pre vs. Post)	6.3	4.21	14	< .01
Paired-samples t-test	Control (Pre vs. Post)	15.4	7.86	14	< .001
Independent-samples t-test	Experimental vs. Control (Post-test)	—	5.83	28	< .001

Table 3: Paired- and Independent-Samples t-test Results for Vocabulary Retention

In the delayed posttest, the experimental group had a mean score of 35.2 which was slightly lower than their immediate posttest. The control group had a mean score of 46.8 which was relatively stable over time. The experimental group represents a clear indication that using translation apps can result in short term vocabulary recognition but poor long term retention. Descriptive analysis of individual items also showed that the experimental group was more successful in the words which were more frequent or reinforced in the lesson whereas the control group was equally successful in all types of target words, including more abstract words.

Therefore, there is a clear impact of using translation applications on vocabulary retention. Although both groups had an improvement between pretest and posttest, the improvements in the control group were greater and longer lasting. Such results indicate that the excessive use of translation applications can only offer short-term retention but does not facilitate long-term vocabulary retention.

Discussion

In general, the results indicate that excessive use of digital-assisted translation applications has a certain negative effect on vocabulary retention. Though the two groups showed improvement between pretest and posttest, the control group showed improvements that were significantly higher and lasting. Digital-assisted applications can only provide short-term assistance but cannot provide the higher-order processing and engagement needed in vocabulary learning for long term retention.

A key mechanism that can be used to explain our findings is that there is a reduced processing when learners use digital-assisted translation apps. The levels of processing postulates that deep cognitive processing facilitates more vocabulary retention. Learners can lose chances of elaborating when they merely look up a word and receive its L1 equivalent. This finding aligns previous studies research on translation strategy: translation may promote immediate understanding and early retention, but not necessarily long retention (Benmoqadem & Koumachi 2024; Hummel, 2010; Ramachandran & Rahim, 2004). The posttest drop in the experimental group is delayed, which indicates that translation apps support short retention of vocabulary.

Scafaru and Tofan (2006) found that word-picture association strategies outperformed translation for recall, suggesting that translation strategies may not be the most effective for long-term, generative vocabulary use. Additionally, Alnan & Halim (2024) compared using L1 translation with multimodal teaching techniques (e.g., pictures, synonyms) and found that the multimodal group significantly outperformed the traditional group on both immediate and delayed vocabulary tests. These findings corroborate the idea that active meaning-making, through imagery or context, promotes robust retention than passive translation-based strategies (Al-Jumaili, 2025).

The article offers Pedagogical implications. Although digital-assisted applications have practical advantages, teachers should scaffold their use. Uncontrolled usage of digital-assisted translation applications can promote shallow processing. Teachers are advised to pair assisted translation with elaboration activities. Besides, our research highlights the importance of retrieval-based learning. Past research studies on retrieval practice favor active over passive retrieval. Terai et al. (2021) revealed the interaction between the direction of retrieval (L1 - L2 vs. L2 - L1) and the proficiency of learners and influence vocabulary learning. Conversely, structured retrieval tasks compel learners to retrieve meanings without external prompts to aid in reestablishing the higher order of thinking that is destroyed by overuse of digital-assisted translations. Since translation-based learning has its limitations, educators should consider the need to incorporate more cognitively challenging and context-oriented strategies.

It is important to include activities that support elaboration, contextual diversity and multimodal teaching to improve long term retention. Therefore, language learning should encourage balanced approaches: translation apps can be involved, although they cannot be the only way to learn vocabulary. Instead, educators should teach learners to combine translation and more fundamental processing strategies to facilitate retrieval practices.

Conclusion

This paper investigated how EFL learners can be affected by the overuse of digital-assisted translation in vocabulary retention. The research shows that there were considerable differences between the

learners who were over-reliant on such technology and those who used traditional learning techniques. Although digital-assisted translation applications can offer instant access, they prevent in-depth processing that is required for long term retention. Traditional modes are more beneficial to learners in immediate and delayed posttests and this indicates the importance of active engagement in context-based activities. The paper found that digital-assisted applications should not be considered a sole means of vocabulary learning. Educators must use digital-aided applications to aid cognitive processes. They ought to combine digital-supported applications with traditional activities. The Overreliance of digital assisted translation reduces long term retention. The effectiveness of digital instruments could guarantee positive outcomes. Future research efforts can focus on the effect of hybrid strategies on learners of different proficiency levels. Overall, the study raises the need of a cautious and critical approach toward digital tools in learning a language. Sustainable building of vocabulary depends on the strategies that would engage the learners in the meaning-making process, rather than using instant solutions.

References

Ahmad, A., Zulfiqar, M., & Batool, B. (2024). Impact of technology on language learning: A study of translation apps and their usage at undergraduate level in university education. *Journal of Social Sciences Review*, *4*(4), 119-130.

Alaboud, A. (2022). The Positive Effect of Translation on Improving Reading Comprehension among Female Arabic Learners of English as Foreign Language. *Arab World English Journal*, *13*(2), 424-436.

Al-Jumaili, H. I. N. (2025). Teaching Vocabulary in Context: A Reader Response Approach to Lexical Development. Wasit Journal for Human Sciences, 21(4). https://doi.org/10.31185/wjfh.Vol21.Iss4.1214

Alnan, A., & Abd Halim, H. (2024). Examining vocabulary learning strategies and vocabulary size among Syrian EFL learners. *Indonesian Journal of Applied Linguistics*, *14*(1), 12-25.

Alzain, E., & Algobaei, F. (2025). The Impact of iPad-Based Translation Apps on English Language Proficiency: The Mediating Role of Learning Engagement Among Saudi Learners. *World Journal of English Language*, *15*(8), 149-161.

Ariel, R., & Karpicke, J. D. (2018). Improving self-regulated learning with a retrieval practice intervention. *Journal of Experimental Psychology: Applied*, *24*(1), 43.

Bahri, H., & Mahadi, T. S. T. (2016). The Application of Mobile Devices in the Translation Classroom. *Advances in language and literary studies*, *7*(6), 237-242.

Balboni, P. E. (2017). Translation in language learning: A 'what for approach. *Revista EntreLínguas*, 276-299.

Benmoqadem, A., & Koumachi, B. (2024). Translation as a mediation activity for Vocabulary Retention: An empirical study. *Journal of English Language Teaching and Applied Linguistics*, *6*(1), 117-122.

Fakira, J., Ilham, I., Hidayati, H., & Bafadal, M. F. (2025). Evaluating Translation AI's Effectiveness in Enhancing English Vocabulary Acquisition Among University Students: A Global Communication Perspective. *Journal of English Language and Education*, *10*(4), 813-820.

Godwin-Jones, R. (2018). Contextualized vocabulary learning. Language Learning & Technology, 22(3), 1–19. https://doi.org/10125/44651

Guo, F., Zhang, Y., & Wu, Z. (2022). Mobile-assisted vocabulary learning through the Shanbay App outside the classroom: Effects of self-regulation and peer scaffolding. *Frontiers in Psychology*, *13*, 993224.

Hulstijn, J. H., & Laufer, B. (2001). Some empirical evidence for the involvement load hypothesis in vocabulary acquisition. *Language learning*, *51*(3), 539-558.

Hummel, K. M. (2010). Translation and short-term L2 vocabulary retention: Hindrance or help?. *Language teaching research*, *14*(1), 61-74.

Ismail Omar, L. (2021). The use and abuse of machine translation in vocabulary acquisition among L2 Arabic-Speaking Learners. *AWEJ for Translation & Literary Studies*, *5*(1).

Kim, H. S., Cha, Y., & Kim, N. Y. (2025). Integrating Generative AI and Machine Translation into EFL Reading and Vocabulary Instruction. Multimedia-Assisted Language Learning, 28(3). Fakira, J., Ilham, I., Hidayati, H., & Bafadal, M. F. (2025). Evaluating

Klimova, B., & Pikhart, M. (2023). Cognitive gain in digital foreign language learning. *Brain Sciences*, *13*(7), 1074.

Liang, P., & Xu, D. (2018). An empirical study of EFL learners' dictionary use in Chinese–English translation. *Lexikos*, *28*, 221-244.

Nation, P. (2017). How vocabulary is learned. *Indonesian JELT: Indonesian Journal of English Language Teaching*, *12*(1), 1-14.

Nykyporets, S. S., Herasymenko, N. V., & Chopliak, V. V. (2024). Cognitive strategies impacting the structural composition of translated technical and scientific texts: An analysis of translation methodologies.

Ramachandran, S. D., & Rahim, H. A. (2004). Meaning recall and retention: The impact of the translation method on elementary level learners' vocabulary learning. *RELC journal*, *35*(2), 161-178.

Scafaru, M., & Tofan, L. (2006). Vocabulary learning strategies. *Management and Socio-Humanities*, 95-98.

Schmitt, N. (2014). Size and depth of vocabulary knowledge: What the research shows. *Language learning*, *64*(4), 913-951.

Shabaneh, Y., & Farrah, M. (2019). The effect of games on vocabulary retention. Indonesian Journal of Learning and Instruction, 2(1), 79-90.

Terai, M., Yamashita, J., & Pasich, K. E. (2021). Effects of learning direction in retrieval practice on EFL vocabulary learning. *Studies in Second Language Acquisition*, *43*(5), 1116-1137.

Xu, Q., Richardson, J. C., Zhang, Z., Cheng, Z., & Guo, F. (2025). Using a Mobile Vocabulary Application to Enhance L2 Learners' Vocabulary Acquisition: Possibilities and Challenges. *Online Learning*, *29*(3), 66-102.