

The Effects of Using a Bilingualized Dictionary on EFL Learners' Vocabulary

Mohammed A. Hayat¹, Abdullah M Alazemi¹ & Dalal Boland¹

¹ The Public Authority for Applied Education & Training, Kuwait

Correspondence: Mohammed A. Hayat, The Public Authority for Applied Education & Training, Kuwait

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Abstract

Dictionaries have been integrated into vocabulary activities in different classrooms within the context of learning English as a foreign language (EFL). This study investigates the effects of using bilingualized dictionaries on EFL learners' vocabulary. A mixed-method design that comprises a vocabulary exercise in a pretest, posttest and delayed posttest protocol in addition to interviews was employed with participants from the State of Kuwait. Participants included 52 female students, from which six students agreed to participate in semi-structured interviews to reflect on their experience of learning vocabulary. The results showed that a bilingualized dictionary significantly improved students' vocabulary at both posttests, though the improvement decreased from the first posttest to the delayed posttest. The results could be interpreted according to the involvement load hypothesis (ILH; Laufer & Hulstijn, 2001), which is founded on three pillars: need, search and evaluation. Participants' views and reflection on the process of learning vocabulary, particularly when using the bilingualized dictionary, combined with the findings of quantitative tests, could inform vocabulary teaching in the EFL context.

Keywords: EFL, bilingualized dictionary, lexical knowledge, vocabulary learning

1. Introduction

The gradual increase in interest in vocabulary acquisition in the EFL context is attributed to instructors' and learners' awareness of the need for enormous lexical storage to excel in a second language (L2; Laufer & Hulstijn, 2001). A major theme that can be gathered from the body of research is the inference that vocabulary learning is either incidental or intentional, which indicates that vocabulary learning is strategy dependent. One way of defining intentional and incidental vocabulary learning is by considering the intention of the learner (Stratton, 2022). To clarify, intentional vocabulary learning occurs when learners attending language learning facilities (e.g., schools or language centres) are introduced to targeted vocabulary items during reading or listening classes. Conversely, incidental vocabulary learning occurs when a learner comes across vocabulary items when reading for pleasure or listening to a podcast. In both cases, the intention of a learner plays a crucial role in defining the vocabulary learning strategy, the type of motivation (i.e., intrinsic or extrinsic), their linguistic proficiency, and their time management practice. Nation (2001) proposed a complementary position by stating that "A well-designed language learning programme has an appropriate balance of opportunities to learn from message-focused activities and from direct study of language items, with direct study of language items occupying no more than 25% of the total learning programme" (Nation, 2001, p. 232).

Learners progress through two distinct but related phases when learning vocabulary. The first is the receptive input phase, in which the learner collects lexical knowledge by reading or listening; this constructs the basic resource of lexical knowledge for learners (Beglar & Nation, 2013). The learner stores vocabulary knowledge (e.g., usage, meaning, and form) when encountering words while reading or listening, before proceeding to the second phase, which is the productive output of language, in which the learner attempts to utilise and communicate previously stored lexical knowledge in writing and speaking (Schmitt, 2019).

Nation (2001) proposed that a learner is considered to know a word when they understand three aspects: form, meaning and use. He argued that each aspect involves receptive and productive dimensions. For example, the state of a learner when recognising the form of a spoken word refers to receptive knowledge, whereas the implementation of vocabulary through speaking or writing is based on productive knowledge. Also, knowing the meaning of a word is

considered receptive when a learner is introduced to a word and manages to recognise its associations, whereas knowing what other words could be used instead constitutes productive knowledge.

Differentiating between receptive and productive knowledge of vocabulary have inspired researchers to test the influence of different teaching strategies to support students' vocabulary knowledge. Using a dictionary in the classroom was suggested to enhance the learners' vocabulary. Nation (2001) reported some of the purposes for consulting dictionaries in the receptive and productive (Note 1) states. In the receptive form, a student looks up words encountered when listening and reading, to confirm familiarity with partly known words, and to confirm contextual guessing. For productive purposes, a student may search for words to speak or write; to check spelling, pronunciation, meaning, grammar and collocations of partly known words; to confirm spelling of known words, or their pronunciation and meaning; to check whether a word exists; to search for synonyms of known words; and finally, to correct an error.

A learner's ability to retrieve the meaning of the word is dependent on the extent of cognitive effort spent when processing it (Hulstijn & Laufer, 2001). For this reason, Laufer and Hulstijn (2001) proposed the involvement load hypothesis (ILH) to explain the cognitive and motivational factors involved in learning a word. Need, search and evaluation are the three constructs that make up the hypothesis. Huang et al. (2012) defined the three processes as follows:

- a- *Need* refers to "the motivational, noncognitive dimension of involvement that exists for language learners when an unknown word is required to finish a given" (p. 545).
- b- *Search* refers to "the attempt to identify the meaning of an unknown word in a dictionary or by consulting a teacher" (p. 545).
- c- *Evaluation* is the "decision-making process" (p. 545) when a learner compares words with each other or compares different entries for the same word to assess the suitability of contextual usage or understanding.

The use of dictionaries in EFL classrooms has become more common thanks to promising findings from some studies in this context. The following section establishes a theoretical basis for using dictionaries in learning vocabulary and then explores studies conducted in EFL contexts on this topic and concludes with the rationale and objectives of the current study.

2. Literature review

Nation (2001) reviewed studies that aimed at investigating the effects of using different dictionary types on learning and vocabulary acquisition. He concluded that studies confirmed the efficiency of dictionary use in comprehension, especially with students who are less proficient in guessing the meaning from the context. He also concluded that using a combination of a bilingual dictionary, where the meaning of a target word is provided in student's first language, and a monolingual dictionary, where the meaning is expressed and explained in the target language, is beneficial to learners. ESL and EFL students could benefit from monolingual dictionaries if they can manage to interpret written definitions and other information in a second language. Hence, using a monolingual dictionary requires some searching skills as well as sufficient language proficiency (Scholfield, 1981). For this reason, some low-achieving EFL learners tend to prefer bilingual dictionaries because they need to read the word in one language and access the meaning in another language (Nation, 2001). To minimise such discrepancies, some researchers have supported the use of a bilingualized dictionary because this type enables EFL learners of all proficiency levels to benefit from the availability of information and meaning in both their first and second languages (Laufer & Hadar, 1997; Laufer & Kimmel, 1997).

Research on the impact of using dictionaries in the EFL context has yielded promising results for integrating dictionaries into vocabulary exercises. Most studies tested the effects of dictionary use on vocabulary knowledge either by employing a dictionary as an exclusive technique or in comparison to other techniques. To begin with, Laufer and Hadar (1997) investigated the potential effects of using monolingual, bilingual and bilingualized dictionaries on EFL students' comprehension and sentence production. They found that students who consulted a bilingualized dictionary performed better in comprehension compared to their peers and significantly better than monolingual dictionary users in producing original sentences. The study offered insights into learners' different skill levels when retrieving information from dictionaries and producing written sentences.

Folse (2006) investigated the effects of three types of vocabulary exercises on L2 learners' vocabulary retention when using a minidictionary as a resource for output. In this within-subject study, three fill-in-the-blank exercises proved to be significantly effective in enhancing learners' vocabulary retention, and they were significantly more effective when compared to one fill-in-the-blank and one original-sentence-writing exercises. The findings imply that

the number of repetitions required to tackle a vocabulary exercise trigger better results than the complexity of the exercise. To explore the effects of using two types of dictionaries on vocabulary knowledge, Ahangari and Dogolsara (2015) divided EFL learners into two groups: one using a monolingual dictionary and the second using a bilingual dictionary. Both groups improved significantly at the posttest, with the monolingual dictionary users significantly outperforming the bilingual dictionary group ($p = .005$). However, the assignment of a control group that did not use dictionaries to compare the performance of the participants would have helped in confirming any improvement that resulted from the intervention.

Alahmadi and Foltz (2020) questioned whether lexical inferencing or dictionary consultation supports initial vocabulary retention in EFL learners in Saudi Arabia. Both strategies were linked to statistically significant gains in learners' vocabulary acquisition. They also found that when students were introduced to a larger number of the target words at the outset of the study, higher vocabulary gains were achieved when the students were trained through lexical inferencing and dictionary consultation.

Amirian and Heshmatifar (2013) investigated the effect of using two types of dictionaries on EFL learners' vocabulary retention. They divided the participants into two treatment groups: the first group consulted an electronic dictionary (ED), and the second group used a paper-based dictionary (PD). The groups performed differently after the pretest, with the ED group significantly outperforming the PD at both the posttest and the delayed posttest. However, the link between higher achievement and ED use was not explained or justified in the study. Similarly, the findings were in line with a study by Hakim et al. (2018) who also did not provide a theoretical justification for using an electronic dictionary over a printed dictionary. Both studies provided lists of the advantages and disadvantages of e-dictionaries and paper-based dictionaries without showing what exactly led to effective vocabulary mastery. Unlike the previous two studies, the findings in Chen's study (2011) were explained in accordance with the ILH as proposed by Laufer and Hulstijn (2001). Chen (2011) investigated the effect of a bilingualized dictionary (BLD) on EFL students' reading comprehension and vocabulary learning. Chen found that students who used an electronic bilingualized dictionary (EBLD) and a paper bilingualized dictionary (PBLD) outperformed the scores of those who did not use any dictionary. The difference between the EBLD and PBLD groups was not significant despite a slight advantage for the EBLD in vocabulary retention. Chen (2011) justified the BLDs by referring to the cognitive and motivational loads that the task induced on students: "the higher involvement load imposed on the BLD groups naturally led to better retention results than those without access to the dictionary" (Chen, 2011; p.239).

Qualitative tools have also been used in studies that explored EFL students' opinions on using a dictionary to learn vocabulary. Regarding learning strategies, EFL students tend to employ metacognitive strategies of self-control and self-evaluation when learning new vocabulary (Alsharif, 2022; Daukšaitė-Kolpakovienė, 2023). In a different study, EFL learners leaned towards determination strategies such as extracting information about new words including parts of speech, word derivatives and dictionary meanings (Behforouz & Al Ghaithi, 2022). Some EFL students stated that they preferred using an e-dictionary because of its facilitative features, such as saving time, speed, instant and accurate translation and assistance in finding definitions as well as grammatical and lexical information (Alamri & Hakami, 2022).

In a study that surveyed more than 3,000 Saudi participants, EFL learners showed a greater tendency towards using a bilingual dictionary over other dictionary types (Alhaisoni, 2016). Students also reported in follow-up interviews that they mainly referred to online dictionaries and Google Translate to elicit meaning and check for spelling. Conversely, the teachers' questionnaire responses showed that they strongly believed in the importance of using a dictionary for achieving lexical gains; however, they were less likely to incorporate dictionary work into classroom activities. The responses also showed that neither the students nor the teachers received appropriate training on using a dictionary.

The EFL studies on vocabulary acquisition reviewed in this brief presentation either involved quantitative or qualitative methods. Fageeh (2014) constituted an exception by adopting a mixed-method design. Etymological vocabulary analysis, supported by consulting an online dictionary, significantly improved the mean score of the experimental group (i.e., the online dictionary group) compared to the control group, which used paper-based and bilingualized word lists. The results of the survey on students' attitudes towards the new method showed that an instruction-based strategy empowered by online dictionary use was significantly favoured over the use of a paper dictionary.

Most studies conducted on the effects of dictionary usage targeted either the exposition of dictionaries benefits by implementing quantitative instruments or by exploring students' perceptions and beliefs about vocabulary learning strategies. However, studies that focused on exploring students' perceptions were conducted using informative yet rigid questionnaires. Alternatively, interviews could be an interactive tool that allows for more in-depth interaction

with the participants to elicit commentary and reflection on dictionary use and vocabulary learning. Therefore, this study has adopted a mixed-method design of vocabulary tests and interviews to help answer the following research questions:

- 1- What is the effect of using a bilingualized dictionary on students' vocabulary knowledge?
- 2- What are the perceptions of EFL students about using an online dictionary to learn vocabulary?

3. The Current study

This study investigates the effects of using a bilingualized dictionary on students' vocabulary acquisition. Students took a Productive Vocabulary Level Test (Productive VLT; Laufer & Nation, 1999) at the pretest, then received a treatment on using a bilingualized dictionary without being informed that they would be tested afterwards (Chen, 2011; Hulstijn, 2005). Moreover, the study aimed to increase the space for students to share their perceptions by inviting them to semi-structured interviews. Semi-structured interviews allow the researcher to probe the respondents when the latter provide intriguing but concise answers that inspire extended discussions about the subject matter (Riazi, 2016). Also, interviews facilitate the production of themes because responses from several interviews can be aggregated, whereas individual responses can provide exclusive and informative details (Cohen et al., 2018).

3.1 Design

The current study adopted a mixed-method design of a pretest, posttest and delayed posttest protocol in addition to a qualitative strand of semi-structured interviews with Kuwaiti EFL Students. Participants undertook an updated version of the Vocabulary Level Test (VLT) that was developed by Webb et al. (2017) (Note 2) to explore students' overall vocabulary knowledge and more importantly, to test students' homogeneity before taking the tests. The updated VLT version was customised to include levels of 1000, 2000 and 3000 words only. The other levels were excluded because the purpose of conducting the VLT at the beginning of the study was to check for homogeneity in proficiency level, which is different than the original objective of the VLT, which was to help instructors build upon its results and anticipate the vocabulary needs of students (Nation & Beglar, 2007; Webb et al., 2017). Furthermore, the frequency level of the 1000-word families accounts for 65–85% of words in written and spoken English, whereas the frequency level of 2000-word families constitutes 3–10% (Webb & Nation, 2017). Therefore, the word frequency levels that were included in the tests should be sufficient for a homogeneity investigation.

For the pretest and both posttests, a Productive VLT (Laufer & Nation, 1999) was employed. It was expected that most students would be unfamiliar with the targeted words in the tests and, consequently, their results at the pretest would be low. It was decided that any progress at the immediate posttest should be treated with caution because this progress might not reflect the success of the intervention. Alternatively, progress could reflect students' temporary ability to remember the meaning of words during the short memory gap between the pretest and posttest. Therefore, it was decided to employ a delayed posttest to ensure that the students retained lexical information. When the first posttest was conducted, some students were invited to participate in interviews to comment on their vocabulary learning and to reflect on the experience they encountered.

3.2 Participants

The participants were 52 female students at the Public Authority for Applied Education and Training in the State of Kuwait who were registered to different disciplines in the College of Health Sciences. Six students participated in semi-structured interviews after completing the first posttest. The participants had been studying English for no less than 12 years and were expected to complete general English and English for Specific Purposes (ESP) courses to fulfil the requirements of obtaining diplomas or bachelor's degrees from the College of Health Sciences.

3.3 Method

3.1.1 Pretest

A Productive VLT (Laufer & Nation, 1999) was conducted as a pretest measure. The Productive VLT was composed of a cloze of 12 fill-in-the gap sentences, with ten target words and two distractors, where the first letters of the words were maintained in each gap. The first letters of the words were retained to assist students in minimising potential confusion with other words.

The following target words were used: *abandon, ancestors, dawn, holy, monitor, disaster, displace, expand, witness*, and *symptoms*, whereas the distractors were *disease* and *experience*. It was expected that students would be unfamiliar with the words, and the results of the pretest should support this expectation and confirm neutrality. The examples in the tests were either derived from Oxford Languages (an online vocabulary resource) or the Collins Online Dictionary, or they were designed by the researchers. Test papers were collected after 30 minutes.

3.1.2 Treatment Session

Participants were given a booklet of two sections containing all the examples and words that were included at the pretest. In the first section, students were asked to provide a definition for each word in addition to an L2 translation. Participants were asked to refer to the Al-Maany bilingualized online dictionary to find word meanings and translations. The activity was inspired by the findings of Laufer and Hadar (1997), who reported that students in the bilingualized dictionary group performed better than students who consulted monolingual or bilingual dictionaries.

Students were also advised that when they found the entry at Al-Maany, they should consider all the sub-entries carefully and select the most appropriate meaning that fit the context. While choosing a word meaning, students were advised to conduct group discussions, as proposed by Nation (2001), to enrich an interactive, goal-directed process. It was expected that learners would discuss the most suitable definition among the sub-entries in accordance with the context of the targeted word. Then, the participants copied the meaning into the booklet along with its L2 translation. This activity denotes the receptive use of a dictionary or the decoding process, which is to elicit the meaning and translation of a word from a dictionary.

The second section of the booklet contains a copy of the pretest but without the first letters of the words. Students were asked to fill in the blanks using the words that were processed in the earlier section. The productive nature of the exercise constituted an external motivation (Mateo-Valdehita & De Diego, 2021) in which a moderate degree of *need* was consequently created to perform the task. In other words, participants moved from receptive to productive status thanks to the pressure imposed by the task itself. According to the ILH (Holstijn & Laufer, 2001), productive tasks urge students to endure a cognitive effort of three consecutive elements: *need*, *search* and *evaluation*. For the *search* stage, students were allowed to consult an online dictionary and write down a definition for each word.

The students were given a copy of the pretest to make them encounter the cloze again and fill in the gaps but without the first letters this time. This action led to the third and last stage of the ILH, which is *evaluation*, in which students compared the meanings of words and figured out which word fit each sentence. The comparison and decision-making processes both matched a moderate degree of cognitive involvement.

3.1.3 Posttest and Delayed Posttest

For the posttest, students took an unannounced version of the Productive VLT one day after the treatment's session. The same words were used but with new sentences—different sentences than those used for the pretest. As in the pretest, the first parts of words were maintained, and students were required to recall the remaining letters to construct complete words. Students were given 30 minutes to complete the task. After two weeks, the same procedure was followed for the delayed posttest.

3.1.4 Interviews

Some students were randomly chosen and invited to participate in interviews after completing the posttest to reflect on their experience. The aim was to allow students to reflect on the activities to provide a picture of the cognitive and metacognitive skills and other learning strategies related to vocabulary learning. Interviews allowed for probing some answers by challenging hesitant responses, which helped in maximizing the accuracy, validity and transparency of the answers. This facility is only available through interviews compared to other surveying instruments. Furthermore, in interviews, unlike questionnaires, participants were encouraged to elaborate on the topic in a more exploratory manner, which allowed them to express their opinions and reflect on their experiences. Consent forms were signed and obtained from all participants.

3.4 Data Analysis

Test papers were collected and corrected by the first researcher. Each correct item received 1 point (i.e., 12 points for answering 12 items correctly). Minor spelling mistakes were ignored because the focus of the study was to investigate students' retention of unfamiliar words after consulting a bilingualized dictionary, so accurate spelling was not as relevant. Results were retained in a Microsoft Excel sheet, and the file was shared with a statistician who was hired to conduct some quantitative tests.

Students' interviews were recorded and transcribed. Code-switching was conveniently practised during interviews because the participants had the freedom to use English or Arabic or both. Thematic analysis (TA; Braun & Clarke, 2006) was adopted as the main method for analysing students' responses because TA allows "for identifying, analyzing, and interpreting patterns of meaning ('themes') within qualitative data" (Clarke & Braun, 2017; p.297). TA is an accessible and systemic procedure for generating codes and themes from the data, thus facilitating meaning interpretation. Because language alternation was practised often in the interviews, relying on software that facilitates

monolingual data analysis became challenging. For this reason, a word file was assigned to function as a platform for applying TA's six steps and analysing the interviews.

4. Results

4.1 Effects of Dictionary Use on EFL Vocabulary Learning

To answer Research Question 1, the following null hypothesis was formulated: there will be no statistically significant differences in the mean scores of vocabulary knowledge when EFL learners use a bilingualized dictionary. Preliminary analyses were carried out before the pretest to detect violations of normality or possible outliers in the dataset. The placement test was conducted at the outset to ensure that all participants were generally homogenous in vocabulary knowledge, whereas the pretest was helpful in checking participants' knowledge of the selected vocabulary.

Because the participants came from different disciplines, their proficiency level in vocabulary was tested through an updated VLT to ascertain whether the population was homogenous. Table 1, Table 2 and the histogram in Figure 1 all confirmed that there was no violation of normality; $p > .05$, and the z-scores of skewness and kurtosis were .054 and 1.35, respectively (within ± 1.96). Figure 2 shows that the data is free of outliers.

Table 1. Tests of Normality

	Kolmogorov-Smirnov*			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Homogeneity	.106	52	.200**	.968	52	.177

*Lilliefors significance correction

**This is a lower bound of the true significance.

Table 2. Descriptives

Homogeneity	Mean	Statistics	Std. Error
		40.87	2.581
	95% Lower Bound	35.68	
	Confidence Interval for Mean	46.05	
	5% Trimmed Mean	40.53	
	Median	40.00	
	Variance	346.433	
	Std. Deviation	18.613	
	Minimum	9	
	Maximum	78	
	Range	69	
	Interquartile Range	31	
	Skewness	.181	.330
	Kurtosis	-.881	.650

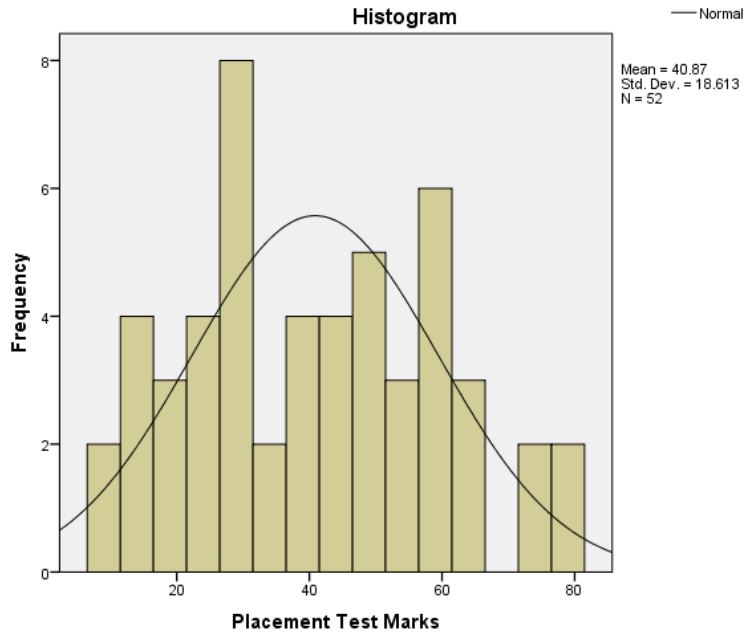


Figure 1. Data distribution based on the placement test marks

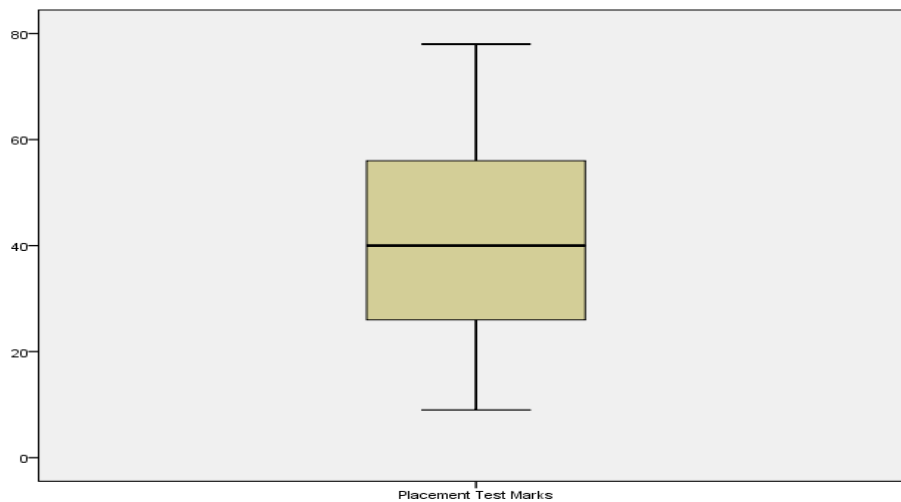


Figure 2. Examination of outliers

The research hypothesis corresponding to Research Question 1 was then tested using the parametric test, one-way repeated measures ANOVA, as presented in Table 3 below. There was a significant effect for time; Wilks' Lambda = .12, $F(2, 50) = 179.59$, $p < .001$. The multivariate partial eta squared was .88 (very large; Pallant, 2016).

Table 3. Multivariate Tests*

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time Pillai's trace	.878	179.588**	2.000	50.000	.000	.878
Wilks' lambda	.122	179.588**	2.000	50.000	.000	.878
Hotelling's trace	7.184	179.588**	2.000	50.000	.000	.878
Roy's largest root	7.184	179.588**	2.000	50.000	.000	.878

*Design: intercept within subjects: time

**Exact statistics

Post-hoc comparisons using the Bonferroni test indicated that there was a significant increase from the pretest ($M = 1.75, SD = 1.79$) to the posttest ($M = 8.52, SD = 3.23$; $\eta^2 = .86$ large; Table 4 and Table 5). There was also a significant increase from the pretest to the delayed posttest ($M = 7.25, SD = 3.34$; $\eta^2 = .80$ large). Before the study, it was assumed that learners knew nothing about the pretest words, so a positive result from pretest was expected. This implies that minimal knowledge from the treatment session could lead to a drastic score improvement. Hence, a delayed posttest after two weeks of the posttest was planned to evaluate the effectiveness of using a bilingualized dictionary. The results showed a significant decrease in the participants' performance from the posttest to the delayed posttest ($M = 7.25, SD = 3.34$; $\eta^2 = .18$ large), also illustrated in Figure 3.

Table 4. Descriptive statistics

	N	Mean	Std. Deviation
	52	1.75	1.792
	52	8.52	3.227
	52	7.25	3.342

Table 5. Pairwise Comparisons

(I)Time	(J) Time	Mean Difference (I-J)			95% Confidence Interval for Differences**	
		Std. Error	Sig**	Lower Bound	Upper Bound	
1	2	-6.769*	.371	.000	-7.688	-5.851
	3	-5.500*	.383	.000	-6.448	-4.552
2	1	6.769*	.371	.000	5.851	7.688
	3	1.269*	.372	.004	.349	2.189
3	1	5.500*	.383	.000	4.552	6.448
	2	-1.269*	.372	.004	-2.189	-.349

Based on estimated marginal means

*The mean difference is significant at the .05 level.

**Adjustment for multiple comparisons: Bonferroni

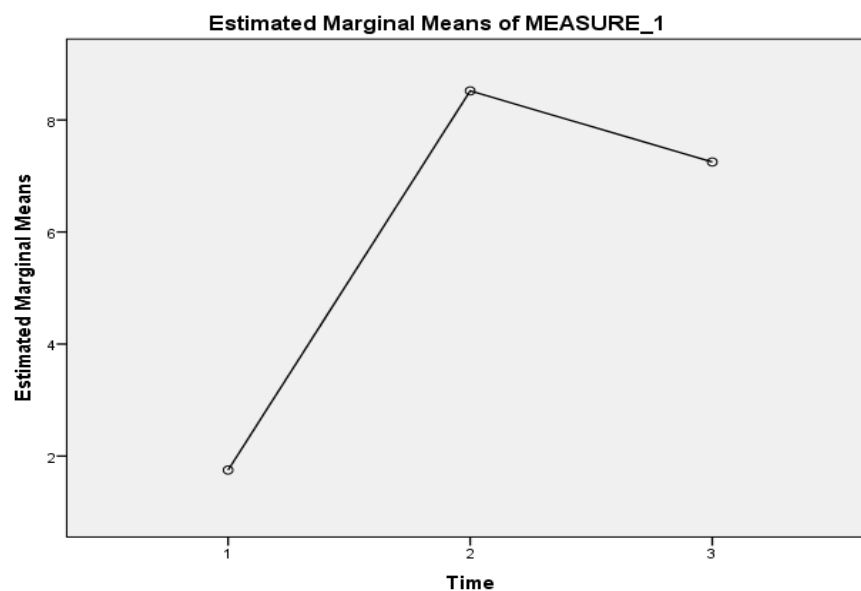


Figure 3. Direction of students' performance throughout the tests

To sum up, the results presented above show that the use of bilingual dictionaries had a large impact on students' learning of new vocabulary; however, the absence of practice and authentic use of this vocabulary may cause students to consistently lose vocabulary over time.

4.2 Students' Comments on Using Bilingualized Dictionary for Vocabulary Learning

This section reports the responses from six interviews with EFL students to answer Research Question 2: What are the perceptions of EFL students about using online dictionaries to learn vocabulary? The data was prepared and analysed in accordance with thematic analysis's six phases as shown in Table 6 below:

Table 6. Thematic Analysis phases (Braun & Clarke, 2006)

Phase 1: Self-familiarising with the data	Phase 2: Generating initial codes	Phase 3: Searching for patterns (themes)	Phase 4: Reviewing themes	Phase 5: Defining and naming the themes	Phase 6: Producing the report
Transcribing and translating necessary data, rereading and writing initial codes	Coding across the data systematically; merging relevant codes	Collating relevant data that construct potential patterns (themes) and creating a thematic map	Checking whether the coded data are in line and form a pattern; noticing a demarcated storyline in each theme	Consistent and constant analysis of themes; naming and defining each theme	Relating the themes to the research questions and writing up the report

Three major themes were generated out of the coding process: *conceptualising new words*, *learning new words*, and *metacognitive awareness*. Table 7 includes a description for each theme. To maintain their privacy, each participant was assigned a pseudonym: Sofia, Elaine, Rose, Katie, Reggie and Lora.

Table 7. Themes' interpretation

Theme	Description
1- Conceptualising new words	The respondent describes her attitude when she encounters a new word.
2- Learning new words	The respondent describes the processes and activities for acquiring words.
3- Metacognitive awareness	The respondent comments on her strategies and perceptions for learning vocabulary (e.g., actions of planning, monitoring, evaluating and self-regulating) in relation to learning vocabulary.

4.1.1 Conceptualising New Words

When familiarising themselves with new words, students tended to perform personalised steps that facilitate storing new vocabulary in memory. Some vocabulary learning activities were similar in principle but when accompanied by other actions, each learning adventure had a unique storyline.

Most participants explained that they translate words as a first attempt to familiarise themselves with a word, and a few commented on the importance of delving into the context to facilitate understanding. Elaine said that she translates the word immediately whereas Rosa and Sofia reported that they translate and listen to the word by playing the audio icon that is available in an online dictionary, which enables them to practice pronunciation. Katie primarily translates and copies the word to acquire spelling and listens to its pronunciation. She stressed translating and pronouncing words as well as refraining from guessing the meaning from the context. Reggie reported that she divides the word into syllables—if applicable—and this process was accompanied by producing the word either through verbal pronunciation or writing.

Lora, on the other hand, reported that she relies on the context to learn new words: “I guess the meaning according to the context. For example, I read the whole sentence, or if it is in a paragraph, I read the paragraph again or the couple of sentences before or after it so I can guess the meaning.” She added that her optimal objective in using a dictionary was eliciting the word’s meaning; all other aspects of words were less important.

Lora’s answer launched the first sub-theme in the data set because it displays lexical familiarisation processes that use contextual clues. All other students reported that they refer to the context as a source of language clues that may help in recognising a word’s meaning, but only after translating the word into Arabic. In other words, they refer to the context in deciphering a word’s meaning only when a translation was not available. Sofia explained that she refers to the context because when the translation offers a selection of possible word meanings, it becomes challenging to decide which Arabic translation fits the context where the word is found. Elaine’s response seemed to support Sofia’s because she sometimes gets confused when several translations are provided, and this motivates her to “read the sentence,” or if the new word comes from a video, then she tries to use the verbs in the same sentence to help her understand. Rose, who commented that she looks for “another word, key word in the same sentence,” shared the same strategy with Reggie in looking for clue(s) within the same sentence to learn a word’s meaning.

Participants were asked about the language they preferred when they were initially introduced to new words. This marks the second sub-theme, in which four students responded that a bilingual English–Arabic dictionary was preferred for similar reasons. Rose explained that she prefers accessing the meaning in both languages because sometimes an English entry would become confusing. Therefore, an Arabic translation becomes vital in explaining meaning. Katie and Reggie stated that Arabic entries were important, but sometimes an English explanation was also crucial for engaging with an authentic resource. Lora, who was raised in bilingual schools, provided a different answer. Even though she used a bilingual dictionary, she prefers to look at meanings in Arabic to save time and to be “accurate” and precise. She explained: “I feel more comfortable if I look at it in Arabic. I understand English, I know English, I know a lot of words in English. I don’t have any problem with English, but sometimes if I want to look for a word, it is easier for me to look at the meaning in Arabic.”

In summary, almost all the students translated new words into Arabic as a first step towards learning vocabulary. Translation, and to a lesser extent, scrutinising the context, are the two main procedures that EFL learners employ to familiarize themselves with new words. Furthermore, the learners preferred a bilingual dictionary, in which a direct translation is provided, over a monolingual dictionary. This could be attributed to the fact that the EFL students were not familiar with the features of a bilingualized dictionary or were unaware of its existence until they used it in the current study. Students expressed their satisfaction with using the Al-maany bilingualized dictionary because it provides definitions and translation in the target language, which boosts comprehension.

The participants’ initial reactions when approaching a new word indicates the second theme of the study: learning new words. Although the current theme “Conceptualising new words” may have shown some intuitive actions that students pursue when they encounter new words, the following theme can be characterised by excerpts about the strategies that students intentionally apply to systematically process and store new vocabulary.

4.1.2 Learning New Words

Students strategically approach new words and perform actions that enable them to learn vocabulary. The first sub-theme explores learners’ preferred strategies that they devised to enable them to learn new vocabulary. The second sub-theme relates to the exercises and drills that they practiced in the classroom. These exercises were assigned by English language instructors in normal classroom settings and as homework. Students sometimes shared their preferences on different types of vocabulary tests.

The participants tended to learn new vocabulary by repeating new words either in writing or verbally. Elaine reported that she listens carefully to the word before orally repeating it until she is satisfied that her pronunciation is accurate. She explained that if it is necessary to learn the spelling, only then did she copy the word several times. Sofia and Katie adopt the same listening strategy and produced the word orally or in writing. Katie added that she keeps a list of new words and their translations. Rose said that she “plays the audio and repeats” the word until she acquires pronunciation. She also underlines new words from the reading text, translates them into Arabic, and then searches for information about how they are used by native speakers.

Reggie added that when she finds a new word while reading, she copies it immediately in red ink. She believes that colouring vocabulary items, especially in red, facilitates memorisation. Next, she puts all new words that were covered from a chapter in a list for revision. Furthermore, she creates a list of new words that were learnt in public places such as banks or restaurants. Unlike Reggie, Lora declared that she dislikes memorising by creating a list;

therefore, she never lists. Alternatively, Lora searches for the word's meaning "through a dictionary, either [from] the phone or [from] a printed dictionary" and then tries to write a sentence using the new word.

Rose shared another example of a personal strategy for learning new words outside the classroom. When she watches a video from YouTube, she reads the commentary section and searches for any comment that was made on a specific word that was mentioned in the video that triggered her attention. She occasionally encounters new words or phrases in the comments that were not mentioned in the video, and she makes note of them as well. For example, she once read the expression "a piece of cake" in one comment and could not figure what this phrase meant, but after a brief search, she realised that it means "an easy thing."

Five students talked about vocabulary exercises that they preferred in the classroom or during exam. Table 8 below shows excerpts of students' responses.

Table 8. Students' preferred vocabulary exercises

Student	Comment on vocabulary exercise
Rose	"I like to do a cloze when a paragraph with missing words is provided and there is a list of words to choose from to fill the gaps"
	"I think writing original sentences is a bit difficult because I will have to generate ideas, but I can do it."
Katie	"I prefer matching [words to definitions] and to a lesser extent, a cloze with a word list exercise.
	I cannot write original sentences because of limited resources in grammar and the lexicon."
Reggie	"Matching is the easiest exercise for me. I write original sentences using new words without problems.
	However, I think fill-in-the gap exercises confuse me as well as the questions that require me to use the correct word tense."
Lora	"I write original sentences easily. I also prefer fill-in-the-gaps."
Sofia	"I like it when we do a cloze exercise but only when we have the word list with full spelling, unlike the exercise that we had when only three letters of the missing word were provided. That exercise confuses me."

It can be concluded that students adopt their own vocabulary learning strategies, which are sometimes customised to suit personal needs and abilities. Also, they prefer to perform certain types of vocabulary tests over other types both in normal classroom setting and during exams. Students' preferences should be considered by instructors and course designers when choosing and delivering vocabulary exercises. Furthermore, addressing students' misconceptions or dislikes of some vocabulary exercise requires considering their voices.

It can be inferred that students have developed evaluation and self-monitoring skills for learning vocabulary. This leads to the following theme, "metacognitive awareness," to shed light on what students know about their learning and how such information could inform teaching and learning vocabulary in EFL context.

4.1.3 Metacognitive Awareness

Throughout all the interviews, the participants expressed an overview or commentary related to vocabulary learning. Learning actions, including planning, reflection, motivation, self-regulation and monitoring, represent students' perceptions of their own learning practices. These afford the opportunity for classroom instructors, course designers and students to step over a solid theoretical grounding based their own cognitive abilities, which in return enables all parties to make practical decisions for enhancing learning and teaching vocabulary.

Both Sofia and Elaine agreed that the objective for learning vocabulary relates to the idea that English is the language of the future. Elaine added that she wants to "learn vocabulary not only for exams, but also to stay updated with what is happening around the world." Rose also expressed a personal non-academic motive for learning vocabulary by stating, "I love reading, I read books. And I watch series on Netflix." She added that she needs to know as many words as possible to assist in understanding English TV shows that do not offer Arabic subtitles. Even when Rose encounters a new word that is not part of the course curriculum, she expressed a strong desire to learn its meaning. Reggie added that her objective in learning vocabulary is to enhance her self-esteem and self-confidence in public spaces. This comment emphasizes a personal objective that is beyond the academic purpose for learning vocabulary.

Katie, on the other hand, declared that the optimal objective for learning vocabulary is to help her understand a variety of topics that might be part of the course exams. Lora added that curiosity motivates her to learn the meaning of every new word she encounters, including the words that she knows she will never come across again.

The second sub-theme highlights how participants distribute their attention while learning vocabulary. Sofia and Rose declared that they paid more attention to words that could be part of the exams than to other words. They both relied on the instructor's hints or the coursebook's features, such as the section that lists all the new words, to determine which words were the most important and which words receive less or no attention. Elaine stated that she translates "every word but I mostly focus on the words that you [the course instructor] inform us about as the new vocabulary," and this dictation pushes her to practice spelling. Elaine also believed that she is independently capable of making the distinction between "the important and the more important words."

Katie stated that she translates all words, and she manages to "intrinsically tell which words are crucial for understanding the reading passage and which words are less important." Also, she emphasised studying important words for vocabulary test questions that require further attention compared to other words. Reggie and Lora, however, focused solely on the words included in the vocabulary list of each lesson and discarded other words. Lora added that she developed a habit of mentally categorising words by importance, and this "intuitive" behaviour could be a result of studying in bilingual schools.

One metacognitive trait revealed the participants' skills and abilities for reflecting on and evaluating their learning. Students occasionally reflected on learning methods in general and, at times, they evaluated and discussed the challenges of vocabulary learning. Table 9 below shows students' reflection on vocabulary learning and brief discussions of the main challenges.

Table 9. Reflection on vocabulary learning

Participant	Reflection on their learning
Sofia	<p>“Repetition is useful and helps me in memorising words, but keeping notes is sometimes useful and most of the time is not. I think the reason lies in understanding the context as some meanings change according to the context.”</p> <p>“I have no problem in learning English. My main obstacle is finding time to study while living in the era of social media. Social media occupies most of my time.”</p>
Elaine	<p>“I think I performed some analysis of the best methods for learning vocabulary, and the ones I currently adopt work best for me.</p> <p>Matching words to definition is easy and useful. I dislike fill-in-the-gap exercises especially when only some letters are provided—similar to the exercises we have had earlier in the classroom.</p> <p>My main problem is general and is not specifically connected to vocabulary learning. I’m overloaded and cannot find sufficient time to study for all the courses. I also have my own personal life.”</p>
Rose	<p>“I used to translate entire sentences or paragraphs. But then, I realised that I only needed to translate the unknown words.”</p>
Katie	<p>“Unlike guessing the meaning of the words, which did not work for me, I believe that making lists is useful. I also found out that copying and repetition improve memorisation. The problem is the number of words in each unit is huge. Therefore, I make lists and study.”</p>
Reggie	<p>“Guessing from the context is useful; otherwise, I translate words. My main problem is lack of confidence and low self-esteem. I’m afraid of producing language.”</p>
Lora	<p>“Pictures are attention-getters for me more than words.”</p> <p>She also mentioned internet access as a requisite condition for learning online. Otherwise, printed dictionaries could be helpful in getting the meaning directly.</p>

In summary, the EFL students’ comments on learning vocabulary demonstrated evidence of some metacognitive thinking about their learning. They set goals for learning vocabulary by determining which exercises were crucial and beneficial in vocabulary acquisition. Also, students performed attention-distribution strategies when they studied vocabulary by concentrating on some words more than others. The criteria were mainly related to the likelihood of the words being part of the vocabulary test in the exam or of being useful in everyday life. Finally, the students showed a reflective mindset with regards to vocabulary learning exercises and the challenges involved in learning vocabulary.

5. Discussion and Conclusion

The quantitative part of the study targeted students' vocabulary progress when consulting a bilingualized dictionary. The tests of the study were designed to help answer the first research question: What is the effect of using a bilingualized dictionary on students' vocabulary knowledge? The results showed that students significantly improved when using a bilingualized dictionary at the posttest and delayed posttest. However, the results should be interpreted cautiously because the Productive VLT contained words unfamiliar to almost all students. Therefore, it was expected that the results would be low at the pretest and dramatically higher at the first posttest because the time between the intervention and the posttest was short. When learners' knowledge about the words is limited or nonexistent at a certain stage, even a small amount of input during the treatment session is expected to highly improve the score at the stage that immediately follows because the information is still fresh in their memories.

To confirm that the experience contributed to meaningful and long-term learning gains, rather than to shallow recall due to the brief interval between the intervention and the posttest, a delayed posttest was performed. Although the students' scores improved significantly, they declined at the delayed posttest. This suggests that using a bilingualized dictionary is effective in supporting vocabulary gain; however, the lack of practice with targeted words likely contributed to losing this gain. To secure the retention of strategic gains, students should be encouraged to use newly learnt vocabulary through tailored language activities.

The results are compatible with the findings of studies in which students consulted a bilingualized dictionary to learn vocabulary (Chen, 2011; Laufer & Hadar, 1997). The findings could be interpreted in accordance with the ILH (Laufer & Hulstijn, 2001). During the treatment session, the students were engaged in activities that triggered a moderate cognitive load that created a need to find the words' meaning and answer a cloze. This constitutes the first pillar of the theory in which *need* motivates students to carry out a searching activity. Students then practically *searched* for word meaning and finally *evaluated* the available options offered by the bilingualized dictionary before selecting a suitable meaning to answer the cloze items. As shown in the results, the effect of using a bilingualized dictionary was positive.

The EFL students were interviewed to allow them to share their thoughts and reflect on using a dictionary for vocabulary learning. The interviews were conducted to help answer the second research question: What are the perceptions of EFL students about using an online dictionary to learn vocabulary? The interviews with students generated several concepts about consulting a dictionary to learn vocabulary. The themes were: *conceptualising new words*, *learning new words* and *metacognitive awareness*.

Conceptualising new words refers to students' initial and practical reactions when encountering new words. The students' attempts to conceptualise a new word involved direct translation or, to a lesser extent, contextual analysis. It could be inferred from students' responses that the selected strategy for conceptualising new words is dependent on the cognitive demand that it entails. This was expressed in some interviews when students declared that translations saved time and effort by providing the meaning instantly. In other words, students who were performing a quick translation were doing so because of the method's facility in saving time and effort compared to contextual analysis or any other method. This may explain why all participants preferred using a bilingual dictionary over a monolingual dictionary. A bilingual dictionary provides a direct translation of the target word using the mother tongue of the learners, consequently leading to less cognitive engagement. However, some participants also expressed that they got confused when they realised that a word's translation found in the dictionary did not facilitate understanding of the intended meaning in the context where the target word is used. Nation (2001) argued that learners who consult a dictionary, whether monolingual or bilingual, thinking that it has the same L1 equivalent meaning for the target words, may mistakenly understand words. As noted by Alahmadi and Foltz (2020), there is no consensus among researchers on whether monolingual or bilingual dictionaries support more vocabulary acquisition. This situation was first observed by Walz (1990) who reviewed studies on dictionary type and language learning and highlighted some reasons for and against using monolingual and bilingual dictionaries. One main factor that can help in choosing the right dictionary for EFL learners is proficiency level. The proficiency level of the EFL learner plays a major role in determining the efficiency of vocabulary acquisition because more proficient learners benefit from a monolingual dictionary. Conversely, less proficient learners benefit from a bilingual dictionary that enables them to link the meaning of the target word to their first language.

Some responses indicated that the participants were unfamiliar with the bilingualized dictionary and its features before the study. The treatment they received during the study introduced them to a new experience: the AI-many bilingualized dictionary. When the students were asked to reflect on the use of AI-many, they tended to appreciate the advantages that a bilingualized dictionary entails. Some participants in the current study expressed their

satisfaction with using a bilingualized dictionary because it minimises the confusion related to a word's meaning due to the existence of lexical information in both the first and target languages as well as the existence of real-life examples. Based on both arguments, a bilingualized dictionary may open a new window for researchers to investigate its features and probe its educational potential in supporting EFL learners' vocabulary acquisition compared to other dictionary types.

With regards to the second concept (i.e., learning new words), some students showed more tolerance for engaging with a cognitively demanding contextual analysis to interpret the meaning of a word before or instead of referring to a dictionary. Each method may leave a distinct impact on EFL students' vocabulary learning and retention. In other words, each exercise requires a learner to expend a certain amount of cognitive effort, which leads to the acquisition of a distinct level of vocabulary.

One explanation could be derived from the theory of task-induced involvement load and its motivational and cognitive dimensions in terms of three components: need, search and evaluation (Laufer & Hulstijn, 2001). Laufer and Hulstijn (2001) argued that assigning a vocabulary task activates one or more of the three components. The incorporation of the components determines and constructs the degree of the students' cognitive *involvement*, which eventually predicts and explains successful retention of new words. In the current study, students' involvement with the task (i.e., consulting a bilingualized dictionary) triggered all the three components of the hypothesis, which indicates a collectively stronger cognitive involvement. Students first *needed* to fulfil the requirements for finding the meaning of new words using a bilingualized dictionary. By breaking down the constructs into individual components, the need here represents a moderate motivation instead of a strong one because "it is imposed by an external agent" (Laufer & Hulstijn, 2001; p.14) and is driven by the demand to answer test questions, not by the learner's own objective.

As a direct consequence of their need, students in the study had to *search* for meaning and *evaluate* the appropriateness of the meaning among the different entries offered by the dictionary. These two components resemble the cognitive aspects (i.e., information processing actions) because the search involves the attempt to find word's meaning or translation, whereas evaluation entails forming comparisons and assessing the compatibility of meanings. Like need, evaluation is considered moderate in the study because it requires "recognising differences between words" and selecting words from a provided list to fill in the gaps (Laufer & Hulstijn, 2001; p.15).

Researchers may consider students' overall satisfaction with using a bilingualized dictionary, as expressed during several interviews. These positive feelings may motivate future research to explore different possibilities that can enhance cognitive engagement in stronger modes, rather than in the moderate ones exercised in the study. For instance, future research could explore natural communicative tasks in which a stronger ILH mode is utilised as students engage in natural conversation and consult a bilingualized dictionary. Researchers who consider such projects may include observational tools that capture the acts of noticing and negotiating as performed by EFL students while looking up words in a bilingualized dictionary.

Students' metacognitive awareness, the third and final concept in the study, involved discussing vocabulary learning objectives, directing attention to words more likely to appear on tests, and reflecting on vocabulary learning strategies and exercises. The findings of the current study are generally in line with Al-Sharif (2022) and Daukšaitė-Kolpakovienė (2023), who showed that EFL students tend to prefer metacognitive strategies involving self-control and self-evaluation to guide their choices in vocabulary learning strategies.

Additional findings that the current study provide are concerned with students' goal-setting efforts for learning vocabulary and the tendency to concentrate on lexical items that are valued in the grading system. Those two findings should inform the decisions of teaching and testing in the EFL context; especially in the case of students in the State of Kuwait, if the objective of teaching vocabulary transcends helping students earn marks in language exams. The students' intellectual prosperity, as expressed in some interviews, is based on acquiring as many words as possible to effectively function in everyday life. Therefore, embedding a bilingualized dictionary as a vocabulary learning strategy is expected to promote sustainable vocabulary acquisition. Teachers then are encouraged to develop vocabulary learning objectives that link the curriculum to real life situations to fully maximize students' learning experiences beyond the classroom. By adding a bilingualized dictionary as a vocabulary learning strategy in the classroom, students of different proficiency levels would be privileged to combine the advantages of monolingual and bilingual dictionaries that would satisfy different learning objectives.

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Notes

Note 1. Note that Nation (2001) used “comprehension and decoding” to refer to the receptive state of dealing with vocabulary, and “encoding” to signify the production of words.

Note 2. The test was originally designed by Paul Nation (1983).

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