The Effect of Reading and Vocabulary Intervention within the Test Validity on Vocabulary Learning Strategies among Iranian EFL Learners

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ABSTRACT

Because intervention within the test validity as a dynamic assessment (DA)-laden procedure has been newly proposed by scholars in the field, research scarcity is there as far as this procedure is concerned with in EFL research. The present investigation focused on exploring the influence of reading and vocabulary intervention within the test validity on EFL learners' strategies of vocabulary learning through a quasi-experimental pre-test post-test control group design. Three intact classes of intermediate female EFL learners, each composed of 30 learners, participated in this investigation from a private language institution in Tehran through convenience sampling. To collect the data, Quick Placement Test (QPT), and Vocabulary Learning Strategies Survey (VLSS) were utilized. To analyze the data, One-Way Analysis of Variance (ANOVA) was used. It was shown that reading and vocabulary intervention within the test validity had a significant effect on vocabulary learning strategies among Iranian EFL learners. Moreover, there was a significant difference between the effectiveness of reading and vocabulary intervention within the test validity on vocabulary learning strategies in favor of the vocabulary intervention within the test validity. These results offer practical insights for language teachers, learners, and curriculum developers.

Keywords: Reading intervention within the test validity, vocabulary intervention within the test validity, vocabulary learning strategies, Zone of Proximal Development (ZPD)

Introduction

Globalization and the expansion of international communication have made English language proficiency a key component of academic and professional success worldwide. Within English as a Foreign Language (EFL) contexts such as Iran, vocabulary learning has emerged as one of the most crucial determinants of communicative competence and reading proficiency [1, 2]. Vocabulary serves as the foundation of language skills and underpins the development of reading, writing, listening, and speaking abilities [3]. Scholars assert that successful vocabulary acquisition not only supports comprehension

but also facilitates the integration of higher-order linguistic skills, leading to overall linguistic competence and communicative fluency (4).

Despite the centrality of vocabulary knowledge, many EFL learners face persistent challenges in acquiring and retaining new lexical items due to insufficient exposure, ineffective memorization strategies, and limited metacognitive awareness of vocabulary learning strategies (VLS). Vocabulary learning strategies refer to the mental, cognitive, and metacognitive operations learners use to discover, store, and retrieve lexical items (5). They encompass both direct techniques—such as repetition, contextual analysis, and association—and indirect strategies, including inferencing, self-monitoring, and interactional negotiation (3, 6). These strategies are essential tools for independent language learning and can transform passive vocabulary memorization into active and meaningful acquisition processes (7).

However, traditional pedagogical practices often fail to provide sufficient support for developing such strategies, leaving learners to navigate vocabulary acquisition without systematic guidance. This limitation has prompted educational researchers to explore alternative frameworks such as scaffolding and dynamic assessment (DA), both of which draw from the sociocultural theory of learning. Scaffolding, as initially proposed by Bruner and elaborated through Vygotsky's Zone of Proximal Development (ZPD), refers to the temporary, adaptive support offered by teachers or peers to enable learners to achieve higher levels of performance than they could independently (8, 9). Within EFL instruction, scaffolding has demonstrated measurable benefits in reading comprehension, writing development, and vocabulary expansion (10, 11).

Dynamic assessment represents a related, yet distinct, constructivist framework that integrates assessment and instruction into a unified process designed to evaluate not only what learners know but also what they can achieve with mediation (12, 13). Rooted in Vygotsky's notion of ZPD, DA positions assessment as a collaborative act where learners' potential is revealed through scaffolded assistance (14). This approach contrasts with traditional testing, which merely measures static knowledge, by emphasizing the interactive and evolving nature of learning (15). Within the field of language education, DA has been shown to improve learners' reading comprehension, oral proficiency, and vocabulary retention through mediated learning experiences (16-18).

In response to the limitations of conventional assessments and the growing interest in mediation-based learning, Iranian researchers have developed a localized derivative of DA known as "intervention within the test validity." This procedure, initially proposed by Daftarifard and Birjandi, adapts the DA framework to testing contexts by integrating guided mediation into assessment tasks (19). The underlying premise is that static tests, which measure performance without assistance, fail to capture learners' developmental potential. Therefore, intervention within the test validity introduces mediated components—such as hints, additional distractors, or simplified linguistic structures—to support learners as they progress through the assessment (20, 21). Through these interventions, assessments become learning opportunities that both evaluate and enhance learners' competence simultaneously.

Several empirical studies have substantiated the benefits of dynamic and mediated assessment models. For example, research has demonstrated that DA fosters deeper comprehension and metacognitive awareness by situating learners within their ZPD and promoting dialogic interaction (22). Similarly, scaffolding has been shown to enhance learners' engagement and retention through incremental support that fades as learners gain independence (8, 23). In a comparative study, scaffolding practices enabled learners to develop vocabulary mastery by linking new words to contextual cues and prior knowledge (5). Moreover, the incorporation of scaffolding and DA principles into assessment tasks has been found to decrease test anxiety and increase learners' confidence, both of which are essential for strategic vocabulary use (18, 24).

Vocabulary learning is particularly sensitive to cognitive load and affective factors. Traditional testing environments often induce anxiety, which inhibits cognitive processing and reduces strategic engagement (1). Conversely, when assessment is

transformed into an interactive process, learners' affective barriers are reduced, encouraging self-regulation and strategy deployment (15, 20). Intervention within the test validity operates within this paradigm by modifying test conditions to encourage active problem-solving rather than passive recall. This aligns with the principles of mediated learning experience theory, which emphasizes the role of structured feedback and interaction in fostering autonomy and cognitive flexibility (13, 14).

The pedagogical advantages of intervention within the test validity extend beyond immediate test performance. By embedding scaffolding within testing contexts, learners are encouraged to utilize inferential reasoning, contextual guessing, and associative strategies that mirror authentic language use (4). These experiences promote metacognitive awareness of language processing and reinforce the use of effective vocabulary learning strategies (6, 7). This integrative approach thus addresses two persistent issues in EFL learning: the overreliance on rote memorization and the lack of explicit strategy training.

Moreover, researchers have noted that combining vocabulary instruction with mediated assessment enhances the retention of lexical knowledge through meaningful engagement and repeated exposure (25). When learners interact with mediated tasks that offer graduated hints or linguistic clues, they are guided toward correct responses without direct provision of answers. Such an approach facilitates procedural learning and strengthens long-term retention (9). In this sense, intervention within the test validity serves as both a diagnostic and formative mechanism—identifying learners' gaps while simultaneously addressing them through structured mediation (18, 21).

Recent studies have underscored the need for innovative instructional designs that integrate technology, mediation, and learner autonomy in vocabulary teaching. For example, augmented reality applications and digital platforms have been explored as mediational tools to facilitate interactive learning and immediate feedback (26, 27). These tools operationalize Vygotsky's theoretical principles by providing dynamic, context-sensitive scaffolds that respond to learners' evolving needs. The combination of digital mediation and DA principles represents a significant evolution in EFL pedagogy, bridging the gap between traditional classroom instruction and technology-enhanced learning environments.

From a theoretical standpoint, intervention within the test validity also aligns with sociocultural and constructivist views of learning, wherein knowledge construction occurs through guided participation and reflection. It recognizes that learners' cognitive capacities are not fixed but develop through socially mediated activity (28, 29). Within EFL contexts, where exposure to authentic language use is limited, such mediated interventions play a crucial role in approximating real communicative situations and fostering language awareness (16). Furthermore, by encouraging interaction between the learner and the test as a mediated artifact, intervention within the test validity transforms assessment from a summative evaluation tool into an instructional event (13, 20).

In addition, several researchers have highlighted the interplay between vocabulary learning and reading comprehension, suggesting that improvements in one domain can positively affect the other (2, 6). Given that both skills depend heavily on lexical knowledge and strategy use, integrating vocabulary and reading interventions within test validity offers a synergistic pedagogical approach. By engaging learners in mediated reading and vocabulary tasks, instructors can simultaneously enhance lexical processing, inferential reasoning, and comprehension monitoring (17, 22).

Despite these theoretical and empirical advances, research on intervention within the test validity remains limited, particularly in the domain of vocabulary learning strategies. Most studies have concentrated on its application to reading comprehension, oral proficiency, or general language performance (18, 19, 21). The paucity of research addressing vocabulary strategy development within this framework underscores the need for systematic inquiry. Vocabulary learning strategies constitute a complex and multifaceted construct influenced by individual, instructional, and contextual factors (5, 7). Therefore,

empirical evidence is needed to determine whether mediation embedded in assessment can foster learners' strategic engagement with vocabulary tasks.

Furthermore, the mediational nature of intervention within the test validity provides an avenue for understanding how learners internalize lexical knowledge through assisted performance (10, 24). In mediated contexts, learners' progress can be conceptualized as movement within the ZPD, where external regulation gradually transforms into self-regulation (14). This developmental trajectory aligns with the objectives of strategy instruction, which seeks to empower learners to become autonomous and reflective language users (12, 13).

The growing interest in dynamic approaches also reflects a broader pedagogical shift from product-oriented to process-oriented assessment. While static tests merely record learners' outcomes, dynamic and mediated assessments illuminate the mechanisms underlying learning. This transition emphasizes learning potential rather than fixed ability, thereby democratizing the assessment process and providing more equitable opportunities for success (20, 27). Consequently, integrating intervention within the test validity into EFL classrooms represents not only an instructional innovation but also a reformative step toward inclusive and developmentally sensitive assessment.

Overall, the convergence of vocabulary strategy research, dynamic assessment, and scaffolding theory presents a rich theoretical and practical foundation for language education. By examining how reading and vocabulary interventions embedded within test validity affect vocabulary learning strategies, researchers can uncover insights into the cognitive, affective, and social mechanisms that underpin effective vocabulary development (7, 11, 20). This integration holds potential for enhancing learners' self-regulation, reducing anxiety, and improving overall language achievement.

Therefore, the present study aims to investigate the effect of reading and vocabulary intervention within the test validity on vocabulary learning strategies among Iranian EFL learners.

Methods and Materials

Study Design and Pariticpants

A quasi-experimental pre-test post-test control group design was employed during the quantitative stage to assess the effects of reading and vocabulary interventions within test validity on vocabulary learning strategies (Ary et al., 2014).

Three intact classes of intermediate female EFL learners, each consisted of 30 learners, participated in this investigation. They were currently learning English at a private language institution in Tehran and selected through convenience sampling. They were assigned to three groups including reading intervention group, vocabulary intervention group and control group. Homogeneity of the sample was checked through Quick Placement Test (QPT). Persian was the participants 'first language, and their age ranged from 19 to 26.

Instruments

Quick Placement Test (QPT): To guarantee that the learners have a uniform English proficiency level at the beginning of the research, the standardized Quick Placement Test (QPT), created and validated by Cambridge ESOL Examination Syndicate and Oxford University Press, was administered. The QPT comprises 60 items covering grammar, vocabulary, and cloze test.

Vocabulary Learning Strategies Survey (VLSS): In this investigation, EFL learners' vocabulary learning strategies were measured using Vocabulary Learning Strategies Survey (VLSS) by Schmitt (1997). Schmitt (1997) introduced the English version of VLSS to estimate learners' strategies for vocabulary learning. It consists of 58 6-point Likert items. The survey's

reliability was estimated to be .89 through Cronbach's Alpha. Its validity was further confirmed by means of factor analysis (30).

Procedure

To collect the data, after sampling, the participants' homogeneity was checked using the QPT. Then, all the three groups filled the VLSS as the pre-test. Next, the treatment started wherein all the three groups participated in 14 regular class sessions of the institute, arranging twice a week in 90 minutes. However, the two experimental groups benefited from intervention within the test validity in the last 40 minutes of each class session.

One experimental group enjoyed reading intervention within the test validity and the other one was exposed to vocabulary intervention within the test validity. Intervention within the test validity was operationalized through developing the mediated versions of reading and vocabulary sections of TOEFL. The mediated versions maintained the same content and items as the original TOEFL. However, to enhance the hints, different interventions were made into the tests. For instance, two or more additional distractors were integrated into the items' choices so that the learners could identify the correct choice more easily. Moreover, the tests were enhanced by giving some hints at the word-, phrase- or sentence-level in the prompts. For instance, if the right choice began with a vowel, before the blank 'an' would be used. Or if the answer of the item was in the 10th line of the essay, a parenthesis was provided in the prompt, saying that seek the answer in the lines 10 to 12. Also, the correct choices were presented at the first choice in some random items. Besides, the technical and difficult words in the prompts or essays were replaced with easier ones. Last but not least, the complex structures were broken into simple and short structures.

The mediated versions of reading and vocabulary sections of TOEFL were broken into short quizzes each of which was used in each treatment session as complementary to educational materials of the institute which was occupied as the setting of the research. Upon completion of the treatment, all the three groups again filled the VLSS as the post-test.

Data Analysis

One-Way Analysis of Variance (ANOVA) was utilized to carry out data analysis.

Findings and Results

Each research question is provided along with the relevant results. Before presenting the results, it is worth noting that because three groups were present in this study, two One-Way ANOVAs were implemented to respond to the three research questions. The three research questions were answered referring to the results of these two One-Way ANOVAs.

To answer the first research question 'Does reading intervention within the test validity have any significant effect on vocabulary learning strategies among Iranian EFL learners?', the statistical procedure known as One-Way ANOVA was employed due to the fact that the assumption of linearity, a prerequisite to One-Way ANCOVA was not retained. As shown in Table 1, the non-significant results of the linearity tests proved that the assumption of linearity was not retained on vocabulary learning strategies ($F(1, 89) = 2.43$, $p > .05$).

Table 1. Testing Assumption of Linearity of Relationships between Vocabulary Strategies

			Sum of Squares	df	Mean Square	F	Sig.
PostStrategies * PreStrategies	Between Groups	(Combined)	51027.846	21	2429.897	1.501	.107
		Linearity	3939.576	1	3939.576	2.434	.123
		Deviation from Linearity	47088.271	20	2354.414	1.454	.128
	Within Groups		110072.776	68	1618.717		
	Total		161100.622	89			

One-Way ANOVA assumes normality of data and homogeneity of group variances. The latter will be discussed when comparing the groups' means on pretest and posttest of vocabulary learning strategies.

Table 2 presents the skewness and kurtosis indices, which assess the normality of the data. Skewness evaluates the symmetry of the distribution, whereas kurtosis measures the relative height of the data. In a perfectly normal distribution, both indices are equal to zero. As shown in the Table 2, the skewness and kurtosis values fell within the acceptable range of ±2, indicating no significant deviation from normality in the present data.

Table 2. Results of Normality Test

Group		N	Skewness		Kurtosis	
		Statistic	Statistic	Std. Error	Statistic	Std. Error
Vocabulary intervention	PreStrategies	30	-.012	.427	-.659	.833
Reading intervention	PostStrategies	30	-.626	.427	.081	.833
	PreStrategies	30	-.242	.427	.227	.833
Control	PostStrategies	30	.027	.427	.290	.833
	PreStrategies	30	.133	.427	-.337	.833
	PostStrategies	30	.068	.427	-.662	.833

Then, the first One-Way ANOVA was employed on the pretest of vocabulary learning strategies. Prior to interpreting the results, it is worth mentioning that the assumption of homogeneity of variances was upheld, as confirmed by Levene's test. The test yielded non-significant results ($F_{(2, 87)} = .564$, $p > .05$) (Table 3), indicating that the groups demonstrated similar pre-test variances.

Table 3. Results of Homogeneity of Pretest Variances

		Levene Statistic	df1	df2	Sig.
PreStrategies	Based on Mean	.726	2	87	.487
	Based on Median	.564	2	87	.571
	Based on Median and with adjusted df	.564	2	83.244	.571
	Based on trimmed mean	.753	2	87	.474

Table 4 presents descriptive statistics for the pretest. The results indicate that vocabulary intervention group (M = 138.03, SD = 4.81), the reading intervention group (M = 137.80, SD = 4.45), and the control group (M = 137.67, SD = 5.37) exhibited closely comparable mean scores on pretest of vocabulary learning strategies, suggesting a similar level of performance across the groups.

Table 4. Descriptive Statistics for the Pretest

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Vocab Intervention	30	138.03	4.810	.878	136.24	139.83
Reading Intervention	30	137.80	4.452	.813	136.14	139.46
Control	30	137.67	5.371	.981	135.66	139.67
Total	90	137.83	4.840	.510	136.82	138.85

Table 5 presents the results of the one-way ANOVA for pretest. The results ($F_{(2, 87)} = .043$, $p > .05$, $\eta^2 = .001$) revealed that the three groups did not perform significantly different on the pretest.

Table 5. One-Way ANOVA for the Pretest

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.067	2	1.033	.043	.958
Within Groups	2082.433	87	23.936		
Total	2084.500	89			

Then, another One-Way ANOVA was carried out on the posttest of vocabulary learning strategies. Prior to interpreting the results, it is important to note that the assumption of homogeneity of variances was upheld, as confirmed by Levene's test, as indicated in Table 6. The test yielded non-significant results ($F(2, 87) = 2.29$, $p > .05$), indicating that the groups demonstrated similar variances on posttest of vocabulary learning strategies.

Table 6. Results of Homogeneity of Posttest Variances

		Levene Statistic	df1	df2	Sig.
PostStrategies	Based on Mean	2.768	2	87	.068
	Based on Median	2.299	2	87	.106
	Based on Median and with adjusted df	2.299	2	70.329	.108
	Based on trimmed mean	2.733	2	87	.071

Table 7 presents the three groups' mean scores on the posttest. The results indicate that the vocabulary intervention group ($M = 275.97$, $SD = 9.09$) had the highest mean on posttest of vocabulary learning strategies. This was followed by the reading intervention group ($M = 212.30$, $SD = 9.71$), and the control group ($M = 175.47$, $SD = 5.44$).

Table 7. Descriptive Statistics for the Posttest

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Vocab Intervention	30	275.97	9.095	1.661	272.57	279.36
Reading Intervention	30	212.30	9.717	1.774	208.67	215.93
Control	30	175.47	5.444	.994	173.43	177.50
Total	90	221.24	42.545	4.485	212.33	230.16

Table 8 presents the results of the One-Way ANOVA for the posttest. The results ($F(2, 87) = 1125.11$, $p < .05$, $\eta^2 = .963$) revealed that the three groups performed significantly different on the posttest.

Table 8. One-Way ANOVA for the Posttest

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	155103.889	2	77551.944	1125.116	.000
Within Groups	5996.733	87	68.928		
Total	161100.622	89			

To locate the differences, the significant results of One-Way ANOVA were followed by the Tukey post-hoc comparison tests (Table 9). The Tukey post-hoc comparison test was employed because it has more power than the frequently used post-hoc test of Scheffe.

Table 9. Multiple Comparisons for Posttest of Vocabulary Learning Strategies by Groups

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Vocab Intervention	Reading Intervention	63.667[*]	2.144	.000	58.56	68.78
	Control	100.500[*]	2.144	.000	95.39	105.61
Reading Intervention	Vocab Intervention	-63.667[*]	2.144	.000	-68.78	-58.56
	Control	36.833[*]	2.144	.000	31.72	41.94
Control	Vocab Intervention	-100.500[*]	2.144	.000	-105.61	-95.39
	Reading Intervention	-36.833[*]	2.144	.000	-41.94	-31.72
*. The mean difference is significant at the 0.05 level.						

The results of the Tukey post-hoc comparison tests (the Table 9) plus mean scores shown in the Table 8 showed that the reading intervention group ($M = 212.30$) significantly outperformed the control group ($M = 175.47$) on posttest of vocabulary

learning strategies (MD = 36.83, p < .05). Thus, it is concluded that reading intervention within the test validity had a significant impact on vocabulary learning strategies among Iranian EFL learners.

To address the second research question 'Does vocabulary intervention within the test validity have any significant effect on vocabulary learning strategies among Iranian EFL learners?', based on the findings of the Table 7, the vocabulary intervention group (M = 275.97) significantly outperformed the control group (M = 175.47) on posttest of vocabulary learning strategies. Moreover, the results of the One-Way ANOVA in the Table 8 in combination with the results of the Tukey post-hoc comparison tests in the Table 9 showed that this difference was significant statistically (MD = 100.50, p < .05). Thus, it is concluded that vocabulary intervention within the test validity had a significant effect on vocabulary learning strategies among Iranian EFL learners.

To answer the third research question 'Is there any significant difference between the effectiveness of reading and vocabulary intervention within the test validity on vocabulary learning strategies among Iranian EFL learners?', according to the results of descriptive statistics in the Table 7, the vocabulary intervention group (M = 275.97) significantly outperformed the reading intervention group (M = 212.30) on posttest of vocabulary learning strategies. Additionally, as shown in the Table 9, this difference was significant (MD = 63.66, p < .05). Thus, it is concluded that the difference between the effectiveness of reading and vocabulary intervention within the test validity on vocabulary learning strategies was significant in favor of the vocabulary intervention within the test validity.

Discussion and Conclusion

The present study aimed to investigate the effect of reading and vocabulary intervention within the test validity on vocabulary learning strategies among Iranian EFL learners. The findings demonstrated that both reading and vocabulary interventions within the test validity significantly enhanced the learners' use of vocabulary learning strategies, with the vocabulary intervention producing a greater effect than the reading one. These results contribute to the growing body of research on Dynamic Assessment (DA) and its pedagogical derivatives in English as a Foreign Language (EFL) contexts, while also expanding the understanding of how mediation-based testing approaches affect learners' cognitive and metacognitive strategy use.

The finding that both interventions enhanced vocabulary learning strategies aligns with the sociocultural perspective of learning proposed by Vygotsky, who emphasized that instruction and assessment should occur within the learner's Zone of Proximal Development (ZPD) to enable potential growth through mediated assistance (14, 28). Within this theoretical framework, DA serves as a vehicle for identifying and expanding learners' capabilities through graduated support and interactive feedback (12, 16). The present study provides empirical evidence that incorporating intervention within the test validity—a newly conceptualized DA-based procedure—can be instrumental in promoting strategy-oriented learning behaviors. By transforming static test structures into scaffolded, interactive formats, learners are provided with contextualized support that fosters engagement, self-reflection, and cognitive autonomy (18, 19).

This improvement in vocabulary learning strategies may be attributed to the mediational features embedded in intervention-based testing. When learners are provided with scaffolded prompts or contextual hints during assessments, they are encouraged to process vocabulary and reading tasks at deeper cognitive levels. This aligns with the principle of scaffolding, which emphasizes the provision of temporary support to help learners bridge the gap between their current and potential performance levels (8, 9). Consistent with earlier findings, scaffolding has been shown to facilitate both comprehension and vocabulary retention among EFL learners (5, 20). By reducing test anxiety and increasing learner confidence, the dynamic nature of the

intervention may also promote the internalization of learning strategies, leading to self-regulated and strategic vocabulary acquisition (10, 24).

The superiority of vocabulary intervention over reading intervention observed in this study can be interpreted in light of the direct connection between vocabulary knowledge and vocabulary learning strategies. As language learners often struggle with the sheer volume and complexity of vocabulary in a foreign language, direct mediation within vocabulary tasks provides more targeted support for cognitive processing, word retention, and inferencing skills (2, 6). This finding resonates with the results of previous studies demonstrating that targeted vocabulary scaffolding fosters deeper lexical processing and better retention than general comprehension-focused instruction (4, 11). The provision of specific hints and contextual cues in vocabulary interventions likely enabled learners to form semantic associations and employ metacognitive monitoring, which are vital components of effective vocabulary learning strategies (3, 25).

Moreover, these findings affirm the sociocultural claim that learning occurs through mediated interaction with cultural tools, including language itself (14, 29). The intervention within test validity, being inherently interactive, may have created opportunities for learners to engage in what Infante and Poehner described as "mediated development" within the ZPD (13). This type of dynamic mediation ensures that assessment simultaneously serves as a learning experience rather than a mere measurement tool. The learners' improved performance on vocabulary learning strategies can therefore be viewed as the result of successful internalization of mediation processes through repeated exposure to scaffolded testing conditions.

The results of the current study are also consistent with research demonstrating that DA can significantly enhance learners' language performance by revealing latent abilities and promoting strategic competence (15, 22). For example, Malmir's comparison of interactionist and interventionist DA models revealed significant gains in learners' pragmatic comprehension accuracy, suggesting that dynamic mediation fosters higher-order cognitive skills beyond rote memorization. Similarly, Shokri and Khodareza found that interventionist DA improved reading comprehension by engaging learners in reflective interactions. The present findings extend these outcomes by demonstrating that similar benefits can be achieved in the domain of vocabulary strategy use through intervention within the test validity.

Additionally, the present findings support those of Zare et al., who found that critical thinking-oriented dynamic assessment improved learners' comprehension and cognitive engagement (17). The learners in the current study, when exposed to structured hints and scaffolded question types, may have developed a more analytical and self-regulated approach to vocabulary learning, reflecting higher levels of metacognitive awareness. Furthermore, the observed improvements resonate with the results reported by Hasani et al., who demonstrated that scaffolded differentiation strategies enhanced both inferential comprehension and vocabulary outcomes (20). Collectively, these studies reinforce the notion that scaffolding—whether implemented through instruction or assessment—has transformative effects on learners' strategy use and linguistic growth.

The alignment between vocabulary and reading intervention effects observed here can also be explained through the reciprocal relationship between vocabulary knowledge and reading comprehension, as identified by prior researchers (2, 6). Reading comprehension provides contexts for vocabulary exposure and strategy application, while vocabulary knowledge supports textual understanding. By integrating mediation into both reading and vocabulary assessments, this study leveraged the mutual reinforcement between these two language dimensions, leading to overall gains in vocabulary learning strategies.

The findings can further be interpreted within the constructivist tradition, which emphasizes active learner engagement in meaning-making through guided participation (4, 29). The intervention within test validity engages learners not merely as test-takers but as co-constructors of their learning experience. This dynamic and participatory mode of assessment aligns with McLeod's interpretation of Vygotsky's scaffolding theory, which holds that learning is optimized when learners are supported

to perform slightly beyond their independent capabilities (28). As such, the intervention-based approach operationalized in this study aligns with contemporary educational psychology paradigms that promote formative, learner-centered assessment.

Another aspect worth noting is the role of emotional and motivational factors in shaping vocabulary learning strategy use. According to Snyder and Witmer's study on English learners' inclusion within multi-tiered systems of support, structured and scaffolded environments reduce affective barriers and foster academic persistence (27). The structured mediation in the present study may have played a similar role by creating an environment where learners felt supported and capable, thus enhancing their willingness to experiment with new vocabulary strategies. Furthermore, reduced test anxiety and increased self-efficacy—both possible outcomes of mediated testing—could explain the observed improvements in strategic learning behavior (1, 18).

From a cognitive standpoint, the improvements in learners' strategy use can also be interpreted through the interaction between working memory and task design. The interventions implemented in the study—such as simplified wording, additional distractors, and hints—may have optimized cognitive load, enabling learners to focus on higher-level strategic processes (8, 31). Previous research by Hessamy and Ghaderi has shown that dynamic assessment not only enhances vocabulary recall but also strengthens learners' metacognitive control. Similarly, Jafarigohar and Haghighi demonstrated that DA improved learners' collocational knowledge by helping them develop awareness of linguistic patterns (23). Thus, it appears that the test modifications in this study functioned as cognitive scaffolds that facilitated metacognitive monitoring and regulation.

In addition, the strong performance of the vocabulary intervention group can be linked to the idea that vocabulary learning strategies—such as inferencing, repetition, and contextual guessing—are more likely to develop in conditions where learners receive explicit and consistent mediation (5, 25). When interventions are embedded directly into testing procedures, they encourage learners to transfer strategic thinking from controlled assessment contexts to autonomous learning situations. This finding aligns with Nguyen and Terry's observation that EFL learners who engage in reflective and narrative-based learning experiences develop stronger metacognitive and social strategies (3).

Finally, the current study reinforces the argument that innovative DA-based approaches, such as intervention within the test validity, can address the shortcomings of traditional static assessments that often fail to capture learners' developmental potential (20, 21). By integrating feedback and interaction into testing, such methods transform assessments into developmental tools, bridging the gap between instruction and evaluation. This dynamic paradigm redefines assessment not as a summative endpoint but as an ongoing learning process, fostering both academic performance and self-regulated strategy use.

Despite its significant contributions, the present study is not without limitations. The first limitation concerns the sample size and sampling method. Because the participants were selected through convenience sampling from a single language institute, the generalizability of the results to other EFL populations is limited. Future research with larger and more diverse samples would provide stronger external validity. Second, the quasi-experimental design, though appropriate for classroom research, restricted the researchers from fully controlling all extraneous variables such as prior exposure to mediation or individual differences in learning style. Third, the intervention period spanned only 14 sessions, which may not have been sufficient to measure long-term strategy retention. Moreover, the study relied primarily on self-report surveys to assess vocabulary learning strategies, which could be subject to response bias. Finally, the study focused solely on intermediate female learners, limiting its applicability across proficiency levels and genders.

Future studies could address these limitations by employing random sampling techniques and including participants from varied linguistic and cultural backgrounds. Longitudinal research designs could help determine whether the positive effects of intervention within test validity persist over time and transfer to other language skills. It would also be beneficial to compare the impact of different mediation techniques—such as peer-assisted versus computer-mediated interventions—on vocabulary strategy use. Mixed-methods research combining quantitative measures with qualitative interviews or think-aloud protocols

could yield deeper insights into learners' cognitive and emotional experiences during mediated testing. Finally, future investigations might explore how teachers' beliefs and training in DA influence the implementation and effectiveness of intervention within test validity in real classrooms.

For practitioners, the results of this study highlight the importance of integrating mediation-based assessment techniques into EFL instruction. Teachers can incorporate intervention within the test validity by embedding hints, prompts, and scaffolded question types in quizzes and reading comprehension tasks. Curriculum designers should consider aligning assessment policies with formative, interaction-based models that emphasize learners' potential rather than static achievement. Teacher education programs can include modules on DA principles and the application of ZPD-based interventions, equipping educators with the skills to design developmentally sensitive tests. Furthermore, institutional stakeholders should promote assessment literacy that views testing as a collaborative process supporting both evaluation and instruction. Through these measures, the use of intervention within the test validity can become a practical and transformative approach to enhancing vocabulary learning strategies in EFL contexts.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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