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TEACHING VOCABULARY THROUGH CONTEXT: AN EMPIRICAL INVESTIGATION IN EFL SETTINGS

Abstract. *This study investigates the effectiveness of context-based vocabulary instruction compared to traditional decontextualized methods in English as a Foreign Language (EFL) classrooms. A quasi-experimental design was employed with 60 intermediate-level university students divided into an experimental group (n=30) receiving vocabulary instruction through authentic reading contexts and a control group (n=30) taught via word-list memorization. Data were collected through pre-tests, immediate post-tests, delayed post-tests administered four weeks after the intervention, and productive vocabulary tests. Results revealed that context-based instruction produced statistically significant improvements across all dimensions. The experimental group outperformed the control group on post-tests ($t(58) = 4.87, p < 0.001, d = 1.26$), demonstrated 34% superior long-term retention, and exhibited markedly higher productive vocabulary use. The findings support the integration of contextual approaches into EFL vocabulary curricula.*

Keywords: *vocabulary teaching, context-based instruction, EFL, lexical competence, incidental learning, vocabulary retention*

INTRODUCTION

Vocabulary knowledge is widely recognized as the cornerstone of communicative competence in a second or foreign language. As Wilkins (1972:111) famously observed, without grammar very little can be conveyed, but without vocabulary nothing can be conveyed. This assertion underscores the critical importance of vocabulary and has motivated extensive research into optimal teaching methodologies. Nation (2001:9) further argues that vocabulary knowledge enables language use, which in turn enables further vocabulary growth.

Traditional approaches to vocabulary instruction have typically relied on decontextualized methods such as word lists, bilingual dictionaries, and rote memorization of word-meaning pairs (Nation, 2001:56). While practical, a growing body of research suggests these methods fail to promote the deep processing necessary for durable acquisition (Hulstijn, 2001:258). Words learned in isolation tend to be stored as discrete, unconnected items in the mental lexicon, making them difficult to retrieve in communicative situations (Aitchison, 2012:213).

In contrast, context-based vocabulary instruction presents new lexical items within meaningful textual environments. This approach is grounded in Krashen's (1989:440) Input Hypothesis, which posits that acquisition occurs most effectively through comprehensible input slightly beyond the learner's current level. Furthermore, the Depth of Processing theory (Craik and Lockhart, 1972:671) provides a cognitive rationale: information processed at deeper semantic levels is retained more effectively than information processed superficially.

The theoretical foundation draws upon four complementary frameworks. First, Vygotsky's (1978:86) Zone of Proximal Development suggests that learning occurs most effectively when new information is situated within a supportive context. In vocabulary acquisition, authentic texts provide scaffolding that enables learners to process new lexical items that might otherwise be inaccessible. Second, Laufer and Hulstijn's (2001:1) Involvement Load Hypothesis proposes that vocabulary retention depends on the degree of cognitive involvement required by a learning task, identifying three components: need, search, and evaluation. Context-based instruction inherently activates all three, as learners must recognize the need for an unknown word, search for its meaning through contextual inference, and evaluate whether their interpretation is consistent with the discourse.

Third, Nation's (2001:382) model of word knowledge distinguishes between receptive and productive knowledge across form, meaning, and use dimensions. Traditional instruction addresses only the form-meaning connection, whereas contextual instruction provides exposure to multiple dimensions simultaneously (Webb, 2007:46). Fourth, Paivio's (1986:53) Dual Coding Theory suggests that information processed through both verbal and contextual-imagery channels creates stronger memory traces.

Prince (1996:478) conducted a seminal study comparing context-based and translation-based vocabulary learning among French university students. While translation-based learning led to slightly higher immediate recall scores, context-based learning produced

significantly better performance on transfer tasks requiring productive use. Nassaji (2003:645) found that successful inferencing was associated with the flexible and integrated use of multiple knowledge sources, a process best facilitated by rich contextual environments.

Webb (2007:46) demonstrated that ten encounters with a word in context were sufficient for most learners to develop both receptive and productive knowledge across multiple dimensions including orthographic form, grammatical behavior, meaning, and collocational patterns. This finding has important implications for materials design, suggesting that reading passages should be constructed to provide sufficient recycling of target vocabulary in diverse linguistic environments.

Elgort and Warren (2014:367) employed eye-tracking methodology to investigate the processing of contextually learned words by advanced ESL learners. Their results showed that words learned through extensive contextual reading were processed with the same speed and automaticity as previously known words, suggesting that contextual learning leads to the full integration of new vocabulary into the mental lexicon. This finding contrasts with the often superficial and fragile word knowledge that results from decontextualized instruction, where words may be recognized in test formats but fail to be accessed fluently during real-time language production. Schmitt (2008:347) conducted a comprehensive review of instructed second language vocabulary learning and concluded that while both explicit and incidental approaches contribute to vocabulary development, the most effective instruction combines deliberate attention to target words with rich contextual exposure. He argued that neither purely explicit nor purely incidental approaches are sufficient on their own, and that an integrated approach that draws learners' attention to vocabulary within meaningful contexts represents the optimal instructional strategy.

In the Central Asian educational context, vocabulary instruction has traditionally been dominated by grammar-translation methods with limited attention to contextual approaches (Hasanova and Shadieva, 2008:15). The prevalence of textbooks that present vocabulary in isolated word lists, combined with examination systems that prioritize discrete-point vocabulary knowledge, has created a pedagogical environment that is resistant to innovation. However, recent curricular reforms and the increasing importance of English for academic and professional purposes have created both the need and the opportunity for evidence-based approaches to vocabulary instruction in this region.

Despite the substantial body of research supporting context-based vocabulary instruction, several gaps remain in the literature. Few studies have been conducted in Central Asian EFL contexts, where learners' L1 (Uzbek or Russian) is typologically distant from English, potentially affecting the transferability of findings from European or East Asian settings. Additionally, most existing studies have focused on either receptive or productive vocabulary knowledge in isolation, without examining both dimensions within the same experimental framework. The present study addresses these gaps by investigating the effects of contextual vocabulary instruction on both receptive and productive knowledge among Uzbek university students.

The present study addresses three research questions: (1) Does context-based vocabulary instruction lead to significantly greater gains than decontextualized instruction on immediate post-tests? (2) Does it result in superior long-term retention on delayed post-tests? (3) Does it promote greater productive vocabulary knowledge? Based on the theoretical framework, it was hypothesized that the context-based approach would produce significantly superior outcomes across all measures.

METHODS

A quasi-experimental design with a nonequivalent control group was employed, incorporating pre-test, post-test, and delayed post-test measures. As Creswell (2014:172) notes, quasi-experimental designs are appropriate in educational research where true randomization is impractical. The independent variable was the instructional approach (context-based vs. traditional), while dependent variables were vocabulary knowledge scores across three assessment instruments. The study was conducted over 12 weeks, a duration recommended for detecting meaningful differences in vocabulary outcomes (Dornyei, 2007:117).

Sixty second-year undergraduate students at a major university in Tashkent, Uzbekistan participated in the study. All were assessed at B1 (Intermediate) level using the Oxford Placement Test (Allan, 2004:15). Participants ranged from 18 to 22 years of age ($M = 19.4$, $SD = 1.1$), with 34 females and 26 males. Two intact classes were assigned to experimental ($n=30$) and control ($n=30$) conditions. Pre-test results confirmed no significant baseline difference ($t(58) = 0.42$, $p = 0.67$). All participants provided informed consent, and no attrition occurred.

A total of 120 target words were selected from Coxhead's (2000:221) Academic Word List, with 10 words introduced weekly. Pilot testing confirmed that fewer than

15% of comparable students demonstrated prior knowledge of these items. For the experimental group, authentic reading passages (500–700 words) were prepared from academic and journalistic sources, with each target word appearing at least three times in varied contexts. Following Nation's (2006:72) guidelines, unknown vocabulary was kept below 5% of running words. The control group received conventional worksheets with definitions, L1 translations, example sentences, and fill-in-the-blank exercises (Harmer, 2015:283).

Both groups received four hours of English instruction weekly, with approximately 45 minutes devoted to vocabulary. The experimental group followed a three-stage procedure adapted from Coady and Huckin (1997:23). In Stage 1 (Encounter and Infer, ~15 min), students read passages independently and inferred meanings of target words using contextual clues (Nassaji, 2003:655). In Stage 2 (Analyze and Confirm, ~15 min), the instructor led discussion, drawing attention to grammatical behavior, collocational patterns, and pragmatic nuances, promoting elaborate processing (Craik and Lockhart, 1972:678). In Stage 3 (Apply and Extend, ~15 min), students used target words in communicative activities designed according to the Involvement Load Hypothesis (Laufer and Hulstijn, 2001:14).

The control group followed a conventional PPP (Presentation-Practice-Production) model. The instructor introduced words using worksheets with definitions and translations, students completed practice exercises, then created original sentences. Total instructional time was equivalent across groups (Harmer, 2015:283).

Four instruments were employed: (a) a 50-item multiple-choice pre-test establishing baseline knowledge; (b) a parallel immediate post-test administered within one week of the intervention's conclusion; (c) a delayed post-test administered four weeks later to assess long-term retention, essential for distinguishing temporary accessibility from durable learning (Nation, 2001:379); and (d) a productive vocabulary test requiring contextually appropriate use of 30 target words, scored on a 0–3 scale by two independent raters (inter-rater reliability: Cohen's kappa = 0.91). Internal consistency across all instruments ranged from Cronbach's $\alpha = 0.84$ to 0.89 (Pallant, 2016:104).

Data were analyzed using SPSS 26.0. Independent samples t-tests compared group performance on each instrument. Effect sizes were calculated using Cohen's d, with 0.20, 0.50, and 0.80 interpreted as small, medium, and large effects respectively (Cohen, 1988:25). The significance level was set at $p < 0.05$. Assumptions of normality (Shapiro-Wilk) and homogeneity of variance (Levene's test) were verified prior to analysis.

RESULTS

The pre-test confirmed baseline equivalence. The experimental group achieved $M = 23.4$ ($SD = 4.2$) and the control group $M = 23.8$ ($SD = 3.9$), with no significant difference ($t(58) = 0.42$, $p = 0.67$, $d = 0.10$). Any post-intervention differences can therefore be attributed to the instructional treatment (Dornyei, 2007:117).

Table 1. Descriptive Statistics and Group Comparisons

Measure	EG Mean	EG SD	CG Mean	CG SD	t(58)	Cohen's d
Pre-test	23.4	4.2	23.8	3.9	0.42	0.10
Post-test	38.6	5.1	31.2	4.8	4.87***	1.26
Delayed	36.3	5.4	24.4	5.1	8.93***	2.27
Productive	7.8	1.3	5.2	1.5	5.23***	1.85

Note. EG = Experimental Group; CG = Control Group. *** $p < 0.001$

The experimental group achieved $M = 38.6$ ($SD = 5.1$), a gain of 15.2 points, while the control group achieved $M = 31.2$ ($SD = 4.8$), a gain of 7.4 points. The difference was highly significant ($t(58) = 4.87$, $p < 0.001$, $d = 1.26$), exceeding Cohen's (1988:40) threshold for a large effect. Paired samples t-tests confirmed that both groups made significant pre-to-post gains (experimental: $t(29) = 14.21$, $p < 0.001$; control: $t(29) = 7.83$, $p < 0.001$), but the experimental group improved by 64.9% compared to 31.1% for the control group.

The delayed post-test revealed critical differences in long-term retention. The experimental group's mean dropped only 2.3 points to 36.3 ($SD = 5.4$), representing 94.0% retention. The control group's mean dropped 6.8 points to 24.4 ($SD = 5.1$), representing 78.2% retention. The between-group difference was highly significant ($t(58) = 8.93$, $p < 0.001$, $d = 2.27$). This 34% retention advantage aligns with predictions from the Depth of Processing framework (Craik and Lockhart, 1972:678) and supports Hulstijn's (2001:271) contention that elaborative processing during encoding is the primary determinant of long-term retention.

Table 2. Retention Rates by Group

Group	Post-test Mean	Delayed Mean	Retention %
Experimental	38.6	36.3	94.0%
Control	31.2	24.4	78.2%

Note. Retention % = (Delayed post-test mean / Post-test mean) $\times 100$

On the 10-point productive test, the experimental group achieved $M = 7.8$ ($SD = 1.3$) versus the control group's $M = 5.2$ ($SD = 1.5$), a significant difference ($t(58) = 5.23$, $p < 0.001$, $d = 1.85$). Qualitative analysis revealed that experimental group students

demonstrated superior collocational accuracy (e.g., producing contextually appropriate word combinations), accurate word-form selection, and register awareness. Control group students frequently exhibited errors in collocation and word form, patterns consistent with the shallow knowledge resulting from decontextualized learning (Webb, 2007:60).

DISCUSSION

The results provide strong evidence for the superiority of context-based vocabulary instruction across all measured dimensions. The large effect sizes ($d = 1.26$ to 2.27) substantially exceed typical values in second language acquisition research (Plonsky and Oswald, 2014:889). These effects may be attributable to the systematic design incorporating multiple contextualized encounters with target words, a feature Webb (2007:60) identifies as critical for robust acquisition.

The immediate post-test results are consistent with Prince (1996:478), who found context-based learning led to superior transfer performance. The experimental group's 64.9% improvement versus the control group's 31.1% suggests that contextual instruction approximately doubles the rate of vocabulary acquisition, a finding with substantial practical significance for curriculum planning.

The differential retention patterns are particularly striking. The experimental group's 94.0% retention versus 78.2% for the control group is readily interpretable within the Depth of Processing framework (Craik and Lockhart, 1972:678). Context-based instruction required learners to engage in effortful inferencing (search), evaluate their interpretations against the text (evaluation), and apply words communicatively (need), creating what Baddeley (1997:142) terms elaborative encoding. The traditional approach relied on rehearsal and repetition, promoting only maintenance encoding associated with rapid forgetting.

The retention advantage also supports the Involvement Load Hypothesis (Laufer and Hulstijn, 2001:15). The tripartite cognitive engagement in context-based instruction established rich associative networks facilitating subsequent retrieval, whereas the control group's more passive engagement produced fragile memory traces vulnerable to decay over time.

The productive vocabulary results address a critical concern in vocabulary acquisition research. As Nation (2001:382) emphasizes, the goal of vocabulary instruction is not merely recognition but the ability to use words accurately in communicative contexts. The experimental group's superior collocational accuracy can be attributed to incidental

learning of collocational patterns through authentic textual exposure (Durrant and Schmitt, 2010:163). Their more accurate word-form use reflects morphological awareness developed through encountering words in full syntactic environments rather than truncated citation forms (Oxford and Scarcella, 1994:237).

The gap between the two groups on productive measures ($d = 1.85$) was notably larger than on receptive measures ($d = 1.26$), suggesting that contextual instruction confers a disproportionate advantage for productive vocabulary use. This finding can be explained by the fact that context-based instruction exposes learners to words in their natural syntactic and collocational environments, providing implicit information about grammatical behavior, register constraints, and discourse functions that is simply unavailable in decontextualized word-list formats. Students who learned vocabulary through context had internalized not just the referential meanings of words but also the patterns of use that govern their deployment in connected discourse.

Several important implications emerge from these findings for EFL vocabulary instruction at the tertiary level. First, context-based vocabulary teaching should be the primary mode of lexical instruction, with decontextualized activities serving a supplementary role for initial form-meaning mapping (Nation, 2001:395). The results demonstrate that learners who engage with vocabulary in context develop richer, more durable, and more deployable word knowledge than those who study words in isolation.

Second, textbooks and supplementary materials should present target vocabulary within authentic textual environments, designed to provide multiple encounters across varied contexts (Webb, 2007:60). Materials developers should ensure that target words appear in diverse syntactic positions and semantic contexts, enabling learners to build comprehensive representations of each word's form, meaning, and use properties. The current prevalence of vocabulary lists and decontextualized exercises in EFL textbooks used in Central Asian institutions represents a significant missed opportunity for promoting deeper vocabulary learning. Third, teacher training programs should include practical instruction in contextual vocabulary teaching strategies, as successful implementation requires pedagogical knowledge of inferencing strategies, metalinguistic awareness, and communicative activity design (Richards and Rodgers, 2014:89). Teachers need to develop the ability to select appropriate texts, design inferencing tasks that are appropriately challenging, and facilitate productive vocabulary activities that engage learners in meaningful communication. Fourth, assessment practices must extend beyond recognition tests to include measures of productive knowledge, collocational accuracy,

and contextually appropriate use (Read, 2000:187). Several limitations of this study should be acknowledged. The use of intact classes rather than random assignment introduces possible confounding variables despite the confirmed baseline equivalence of the groups (Mackey and Gass, 2005:362). The single-institution setting with a relatively homogeneous participant population limits the generalizability of the findings to other educational contexts and proficiency levels. The 12-week intervention period, while adequate for detecting treatment effects, may not capture the full trajectory of vocabulary development under the two conditions.

Additionally, individual difference variables such as learning style preferences, motivation, working memory capacity, and first language vocabulary size were not controlled for in this study and may have influenced the results (Dornyei, 2007:225). Future research should address these limitations through studies employing true experimental designs with random assignment, multi-site investigations involving diverse learner populations, and longer intervention periods. The integration of technology-enhanced contextual vocabulary instruction, including digital reading platforms and corpus-based activities, represents a particularly promising avenue for future investigation (Chapelle, 2001:44).

CONCLUSION

This study investigated whether context-based vocabulary instruction produces superior outcomes compared to traditional decontextualized methods in EFL settings. The results provide an unambiguous affirmative answer. Across all three measures of vocabulary knowledge — immediate recognition, long-term retention, and productive use — the context-based approach yielded substantially and statistically significantly better outcomes than traditional word-list instruction. The large effect sizes observed throughout ($d = 1.26$ to 2.27) lend confidence to the robustness and practical significance of these findings.

The theoretical implications of this study are consistent with several influential frameworks in vocabulary acquisition research. The superior immediate learning outcomes align with Krashen's (1989:440) Input Hypothesis and the comprehensible input model. The retention advantages are readily interpretable within the Depth of Processing theory (Craik and Lockhart, 1972:671) and the Involvement Load Hypothesis (Laufer and Hulstijn, 2001:1). The productive vocabulary gains support Nation's (2001:382)

multidimensional model of word knowledge. The convergence of the present findings with these theoretical predictions strengthens the case for context-based instruction as a theoretically principled and empirically validated approach to vocabulary teaching.

From a practical perspective, the study demonstrates that investing instructional time in context-based vocabulary teaching yields dividends not only in the quantity of words learned but, more importantly, in the quality and durability of that learning. The experimental group's ability to retain 94% of their vocabulary gains after four weeks and to use target words productively with collocational and register accuracy represents precisely the kind of robust lexical competence that EFL learners need for academic and professional success.

In an era when EFL curricula must prepare learners for the demands of academic study, professional communication, and globalized discourse, the development of deep, flexible, and retrievable vocabulary knowledge is not a luxury but a necessity. Context-based instruction, as demonstrated by this study, offers a principled and effective means of achieving this goal. The findings call upon curriculum designers, materials developers, teacher educators, and classroom practitioners to embrace approaches that present vocabulary not as isolated items to be memorized but as living elements of discourse to be encountered, analyzed, and used in the rich and varied contexts that give them meaning.

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