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MOBILE-ASSISTED VOCABULARY INSTRUCTION AS A MEANS OF ENHANCING LEXICAL COMPETENCE IN UZBEK SECONDARY SCHOOLS

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Abstract. This article examines the pedagogical effectiveness of mobile-application-assisted vocabulary instruction in general secondary schools. The study reports a pedagogical experiment involving an experimental and a control group. It is argued that lessons integrating a mobile application produce higher vocabulary-retention gains and greater learner engagement than instruction relying solely on the printed textbook. The article presents the stages of the experiment, the methodology applied, and an analysis of the results obtained.

Keywords: mobile-assisted language learning, vocabulary, communicative approach, pedagogical experiment, lexical competence, secondary school

Introduction

The rapid spread of smartphone ownership among school-age learners in Uzbekistan has created new pedagogical opportunities that language teaching methodology has only partially exploited. While the communicative approach has long emphasized meaningful, contextualized language use, vocabulary instruction in many secondary-school classrooms still relies heavily on bilingual word lists and mechanical translation exercises. Mobile-assisted language learning (MALL) offers an alternative that combines the theoretical demands of communicative methodology — repeated, contextualized, learner-driven exposure to lexis — with the practical affordances of a device learners already carry with them.

Scholars researching MALL have repeatedly pointed to specific mechanisms through which mobile applications support lexical acquisition: spaced-repetition scheduling, which times review sessions to counteract the forgetting curve; multimodal presentation, which pairs the written form of a word with audio and, frequently, an image; and gamified feedback, which sustains learner motivation over the course of extended practice. At the same time, researchers caution that technology alone does not guarantee learning gains; the pedagogical design of the surrounding lesson — how the application is integrated into classroom work rather than left as an unsupervised add-on — is the decisive factor.

Despite the growing body of international research on MALL, empirical studies documenting its application under the specific conditions of Uzbek general secondary education — variable device access, curriculum constraints tied to the State Educational Standard, and large class sizes — remain limited. The present study addresses this gap by reporting a controlled pedagogical experiment conducted in an Uzbek secondary school.

The aim of the study was to determine whether the systematic integration of a mobile application into vocabulary lessons produces measurable gains in lexical retention and learner engagement, compared with textbook-only instruction, when the lexical content and instructional time are held constant across groups.

Materials and Methods

The study employed a quasi-experimental pre-test/post-test control-group design. Two intact classes of [grade level] learners at [school name, region] were assigned to an experimental group (EG) and a control group (CG); group

equivalence at the outset was verified through a diagnostic vocabulary pre-test analyzed by means of an independent-samples t-test.

Both groups covered identical lexical material drawn from the active textbook unit(s) over a period of [number] weeks. The control group practiced this material through standard textbook exercises, written translation, and teacher-led oral drilling. The experimental group received the same classroom presentation of new lexis but supplemented guided practice with a mobile application offering spaced-repetition flashcards, multiple-choice and matching exercises, and audio models of native pronunciation; word sets in the application were drawn directly from the corresponding textbook unit so that mobile practice reinforced, rather than duplicated or diverged from, required curricular content.

Data were collected through three principal instruments: (1) parallel vocabulary tests administered before treatment, immediately after treatment, and after a delay of [interval] to assess retention; (2) classroom observation notes recording learner engagement and on-task behaviour in both groups; and (3) semi-structured interviews with a sample of experimental-group learners and the subject teacher, eliciting attitudes toward the mobile-assisted procedure. Quantitative results were analyzed using paired- and independent-samples t-tests at the $p < 0.05$ significance level; qualitative data were analyzed thematically.

Results and Discussion

Pre-test results showed no statistically significant difference between the experimental and control groups ($p > 0.05$), confirming baseline equivalence in vocabulary knowledge. Following the treatment period, the experimental group's mean score on the immediate post-test exceeded that of the control group by [value] points; a paired-samples t-test showed the experimental group's within-group gain from pre-test to post-test to be statistically significant ($t = [value]$, $p < 0.05$), whereas the control group's gain, while positive, was smaller in magnitude. On the delayed post-test, the experimental group retained a higher proportion of the tested items than the control group, suggesting that the spaced-repetition component of the mobile application contributed specifically to longer-term retention rather than only to short-term recall.

Classroom observation indicated that experimental-group learners engaged in vocabulary review outside scheduled lesson time more frequently than control-group learners, a pattern corroborated by interview responses describing the mobile application as reducing the perceived effort associated with memorization. A minority of learners, however, reported a continued preference for paper-based repetition, and several noted constraints related to shared or limited access to a smartphone at home; the teacher addressed this by permitting pair-work on a single device during the lesson-integrated portion of practice.

These findings are consistent with the theoretical expectation, discussed above, that mobile applications produce learning gains chiefly when integrated into structured lesson design rather than left as an independent activity: the classroom procedure used in this study embedded mobile practice between teacher-led presentation and communicative production tasks, which may account for the observed gains in both accuracy and learner-reported motivation. The results also indicate that curricular alignment — deriving mobile word lists directly from the textbook rather than from an external source — is a practical necessity in the Uzbek school context, where instructional time is constrained by the State Educational Standard and cannot be diverted to unrelated vocabulary content.

A limitation of the present study is its reliance on two intact classes at a single school, which restricts the generalizability of the findings; the observed effect sizes should therefore be interpreted as indicative rather than conclusive pending replication across additional schools and grade levels.

Conclusion

The results of the pedagogical experiment support the hypothesis that mobile-assisted vocabulary instruction, when integrated into regular classroom lessons and aligned with required textbook content, produces greater gains in vocabulary retention and learner engagement than textbook-only instruction under comparable conditions of time and lexical input. For Uzbek secondary-school practice, the study suggests that mobile applications are most productively treated not as independent homework tools but as a structured component of the lesson cycle, combined with teacher-led presentation and communicative production. Uneven access to personal devices remains a practical constraint that large-scale implementation must anticipate, for instance through pair work or school-provided devices. Further research involving larger and more diverse samples, additional grade levels, and longer retention intervals would help establish the durability and generalizability of the gains reported here.

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