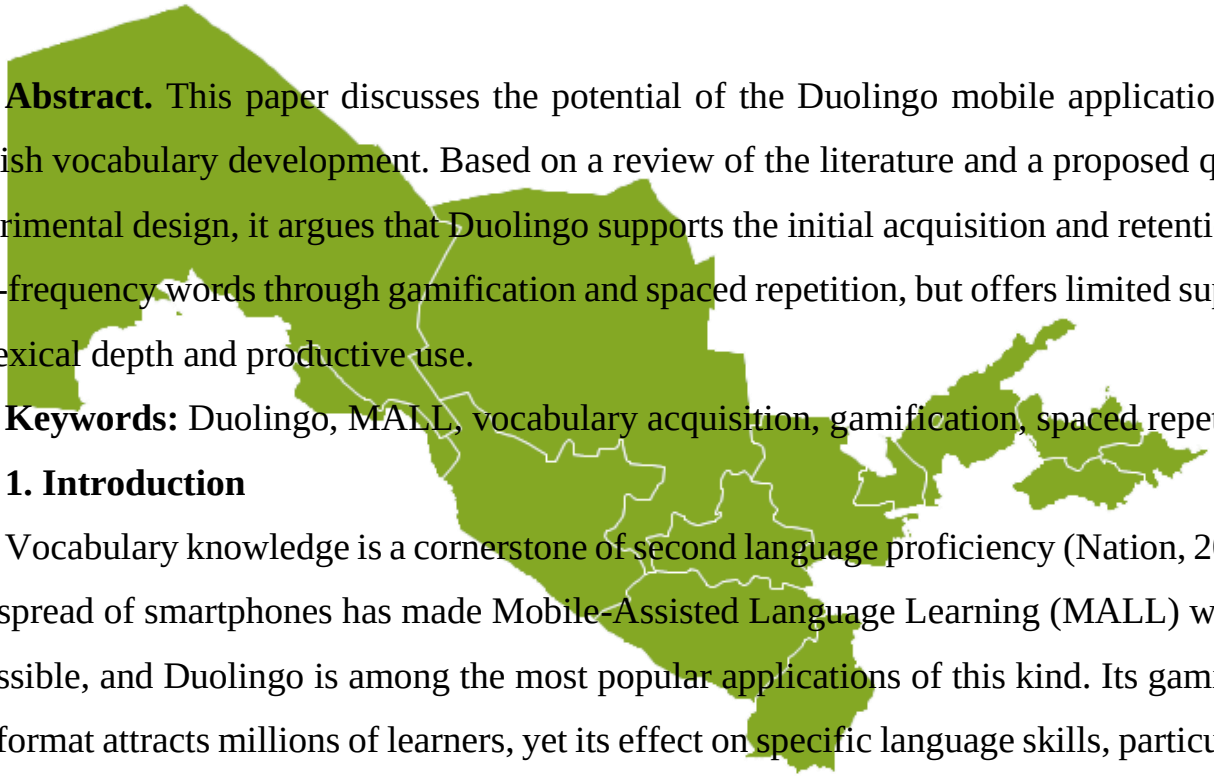
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THE IMPACT OF THE DUOLINGO MOBILE APPLICATION ON DEVELOPING STUDENTS’ ENGLISH VOCABULARY

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Abstract. This paper discusses the potential of the Duolingo mobile application for English vocabulary development. Based on a review of the literature and a proposed quasi-experimental design, it argues that Duolingo supports the initial acquisition and retention of high-frequency words through gamification and spaced repetition, but offers limited support for lexical depth and productive use.

Keywords: Duolingo, MALL, vocabulary acquisition, gamification, spaced repetition

1. Introduction

Vocabulary knowledge is a cornerstone of second language proficiency (Nation, 2001). The spread of smartphones has made Mobile-Assisted Language Learning (MALL) widely accessible, and Duolingo is among the most popular applications of this kind. Its gamified, free format attracts millions of learners, yet its effect on specific language skills, particularly vocabulary, remains debated. This paper examines how Duolingo’s pedagogical features contribute to or limit English vocabulary development.

2. Theoretical background

Duolingo’s design aligns with several well-established principles. Its spaced repetition system reviews items at increasing intervals, which is consistent with research on memory and forgetting. Points, streaks, levels and leaderboards are intended to sustain motivation; in terms of self-determination theory (Ryan & Deci, 2000), they support feelings of competence and autonomy. Immediate feedback further helps learners correct errors.

At the same time, several theoretical concerns arise. The depth of processing framework (Craik & Lockhart, 1972) suggests that deeper semantic engagement leads to

better retention than shallow processing, while exercises based on word-pair translation and multiple-choice tasks tend to encourage the latter. Swain’s (1985) Output Hypothesis stresses the role of meaningful language production, which constrained app exercises provide only to a limited extent. In Nation’s (2001) terms, Duolingo mainly covers language-focused learning, and offers less meaning-focused output and fluency development.

3. Previous research

Earlier studies generally report positive effects of Duolingo on beginners’ vocabulary and motivation. The best-known study (Vesselinov & Grego, 2012) was commissioned by Duolingo and examined learners of Spanish; its methodology has been criticized, and its results cannot be directly generalized to English vocabulary. Independent studies more often describe Duolingo as an effective supplementary tool rather than a stand-alone solution, with limitations in contextualization, productive practice and advanced vocabulary.

4. Proposed methodology

A quasi-experimental pre-test/post-test control group design is proposed. Participants would be 60-80 EFL university students at B1-B2 level (CEFR), divided into an experimental group (Duolingo plus the regular curriculum) and a control group (regular curriculum only). The experimental group would use Duolingo for about 30 minutes a day, five days a week, for 10-12 weeks. Data would include:

- pre- and post-tests of receptive vocabulary, productive vocabulary and lexical depth (e.g., Vocabulary Levels Test, Word Associates Test);
- usage statistics from the application (time, lessons, streaks);
- a student questionnaire and short interviews, analysed thematically.

Vocabulary gains would be compared using ANCOVA with pre-test scores as a covariate, and usage–gain relationships using Pearson’s correlation ($p < 0.05$). Main limitations are the non-random assignment, the additional study time of the experimental group, reliance on self-reported perceptions and the short duration.

5. Expected outcomes

No empirical data have yet been collected; the following outcomes are hypotheses

derived from the literature. It is expected that (1) the experimental group will show greater gains in receptive vocabulary, especially for high-frequency words; (2) differences in productive vocabulary and lexical depth will be small; (3) usage time will correlate positively with receptive gains but weakly with depth; and (4) learners will value motivation, convenience and feedback, while criticizing the lack of context, repetitiveness and limited free production.

6. Conclusion

Duolingo is a valuable supplementary tool for building foundational vocabulary and maintaining motivation, but it cannot replace contextualized input, communicative practice and productive tasks. Teachers should combine it with classroom activities that develop word depth and use, and learners should supplement it with authentic materials. The hypotheses presented here should be tested empirically, including the newer Stories and Max (Roleplay, Video Call) features.

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