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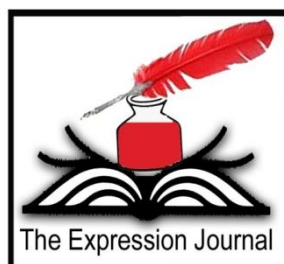
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Effectiveness of Mobile Assisted Vocabulary Learning in Multilingual ESL Context: An Experimental Study

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Abstract

Over the past decade, Mobile Assisted Language Learning (MALL) has gained increasing attention as a means of extending lexical exposure beyond conventional classroom boundaries. This study examines the effectiveness of integrating mobile applications into English as a Second Language (ESL) instruction in enhancing the lexical competence of multilingual undergraduate learners. The participants comprised forty first-year undergraduates from a rural college in Kerala, for whom English functions primarily as an academic language alongside two or more other languages. Employing a mixed-methods research design, the study combines a controlled pre-test/post-test experiment with a learner perception survey to assess both vocabulary gains and learner engagement. Quantitative findings indicate a statistically significant improvement in the vocabulary performance of the learners following sustained mobile-assisted instruction. Qualitative responses further suggest increased learner autonomy, motivation, and engagement with lexical learning tasks. The study argues that MALL, when pedagogically scaffolded, supports contextualised and self-directed vocabulary acquisition in multilingual ESL classrooms. By highlighting empirical evidence from a rural, multilingual context, this study contributes to the growing body of research on technology-mediated language learning and offers pedagogical implications for integrating MALL applications in ESL instruction.

Keywords

Mobile Assisted Language Learning, Multilingual, Lexical Command, Integration,
Pedagogic Principles.

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Introduction

Vocabulary is central to second language acquisition, functioning as the building block of communicative competence. As Wilkins observed, "Without grammar very little can be conveyed, without vocabulary nothing can be conveyed" (111). For ESL learners in rural Kerala, vocabulary acquisition is often constrained by rote memorization, limited exposure to English outside the classroom, and a heavy dependence on textbooks. These factors lead to low learning, where learners memorize words for examinations but fail to retain or apply them in true contexts.

In recent years, the spread of mobile devices has created new possibilities for language learning. Mobile-Assisted Language Learning (MALL) has been celebrated for offering flexibility, learner autonomy, and interactive experiences that can support vocabulary growth (Kukulka-Hulme and Shield 273). Unlike static methods of vocabulary instruction, mobile applications such as Quizlet, Duolingo, and Kahoot incorporate multimodal resources, gamification, and social collaboration. These features potentially address the motivational and cognitive challenges faced by rural ESL learners.

The ESL context in Kasaragod district of Kerala, and more specifically that of Manjeshwar, with its multilingual culture presents a unique challenge. Students come from multilingual background, navigating languages such as Malayalam, Kannada, Tulu, Malame, Marathi, Beary, Konkani and Urdu. While multilingualism can be an asset, it also complicates vocabulary acquisition in English, which is primarily learned in academic contexts rather than through daily communication. This situation necessitates an investigation into the effectiveness of mobile applications in bridging lexical gaps among learners and determining whether their contribution to vocabulary learning is sustained over time or confined to short-term retention.

This study seeks to address this problem by integrating mobile applications into the undergraduate ESL classrooms in Government College, Manjeshwar. It examines

both measurable vocabulary outcomes and learner perceptions of mobile-assisted vocabulary learning. The study not only contributes empirical evidence to the field of MALL but also foregrounds the voices of multilingual learners, a group often overlooked in global discussions of technology-enhanced learning.

Theoretical Framework

The study is based on the following interrelated theoretical foundations:

Vocabulary Knowledge Framework: Nation's taxonomy identifies vocabulary knowledge as comprising form, meaning, and use (Nation 27). Effective vocabulary instruction must therefore extend beyond recognition to include productive skills, contextual understanding, and collocational awareness.

Input Hypothesis: Krashen argues that learners acquire language when exposed to comprehensible input slightly above their current level (Krashen 21). Mobile apps provide repeated, scaffolded exposure to target words, operationalizing this hypothesis in digital contexts.

Sociocultural Theory: Vygotsky emphasizes the role of mediation and scaffolding in learning. In a MALL environment, digital tools act as mediational artifacts, supporting learners' entry into the "zone of proximal development" through interactive practice and peer collaboration (Lantolf and Thorne 204).

Self-Determination Theory: Deci and Ryan's theory of motivation highlights autonomy, competence, and relatedness as key elements of engagement (Deci and Ryan 45). Gamified learning platforms align with these principles by offering learners control, feedback, and collaborative experiences.

By integrating these perspectives, the present study places mobile applications not merely as technological novelties but as pedagogical tools that can meaningfully support vocabulary acquisition in multilingual ESL settings.

Review of Literature

Research into vocabulary acquisition has consistently underscored its importance in language learning. Schmitt's comprehensive survey on vocabulary learning strategies highlights that successful learners combine memorization, context-based learning, and repeated exposure (Schmitt 220). Yet, in many ESL contexts, vocabulary remains marginalized within curricula dominated by grammar and literature.

Digital flashcard tools such as Quizlet have gained popularity for their ability to provide spaced repetition, multimodal input, and collaborative learning. Dizon's study with Japanese EFL learners reported significant vocabulary gains through Quizlet, with learners expressing positive attitudes toward its usability (Dizon 41). Similarly, Chien found that Quizlet enhanced learner autonomy by allowing students to create and share their own word sets (Chien 163). Liu and Chen demonstrated that gamified platforms improved motivation and vocabulary retention in Taiwanese classrooms (Liu and Chen 531). Godwin-Jones argues that gamification elements such as points, levels, and badges address motivational challenges that traditional vocabulary teaching fails to overcome (Godwin-Jones 8).

While global research on MALL has grown, its application in multilingual, resource-constrained contexts is less studied. Dashtestani notes that learners in

developing regions often face infrastructural challenges such as limited internet access and lack of training (Dashtestani 16). Stockwell further cautions that mobile learning may lead to superficial processing if not allied with pedagogical frameworks (Stockwell 83).

In the Indian context, studies are less but emerging. Researchers have noted that MALL can support code-switching practices and alleviate language anxiety among Indian learners (Rao 44). However, few empirical studies have examined its role in vocabulary acquisition in rural higher education and this study attempts to address the gap.

Methodology

For the present study, a systematically organized *Must-Know Word List* comprising 2,000 words was prepared and classified according to grammatical category to serve as the linguistic foundation for the instructional intervention. The list was developed through a thematic and pedagogically informed process that expanded into five broad communicative domains relevant to undergraduate learners. In selecting and classifying the vocabulary items, several criteria were used: frequency, based on established corpora; range, or the extent to which words appear across academic disciplines; utility, referring to usefulness in academic, social, and professional communication; learnability, which considered morphological transparency, word families, and cognitive load; and local relevance, ensuring alignment with learners' multilingual backgrounds, institutional contexts, and communicative needs. Each domain was designed to reflect authentic language demands encountered in academic, social, and professional settings.

1) Self and Social Interaction:

This domain was intended to help students express personal identity, build relationships, and participate in everyday social exchanges. It included vocabulary related to personal information (such as name, age, interests, and family), common greetings and introductions, expressing feelings and preferences, making and responding to invitations, and using politeness markers and conversational connectors. This domain forms the foundation of communicative competence. Many undergraduates especially ESL learners experience hesitation during basic introductions or informal interactions. Emphasizing this category supported the development of confidence and oral fluency, fostering active participation in social communication.

2) Academic and Campus Life

The second domain was designed to equip students for active participation in academic and campus-related contexts. It included classroom terminology (assignment, deadline, attendance, lecture, presentation), discipline-specific and research-related terms (hypothesis, data, citation, reference), digital learning vocabulary (portal, upload, forum, plagiarism, dashboard), and expressions used to describe academic goals and achievements. Although frequently overlooked in general vocabulary instruction, academic vocabulary is essential for tertiary-level learners. Familiarity with these terms strengthens reading comprehension, academic writing, and overall engagement in English-medium higher education.

3) Daily Life and Practical Communication

This domain focused on vocabulary necessary for managing routine real-life situations. It comprised terms related to travel and directions (ticket, platform, schedule, destination), shopping and finance (bill, discount, refund, exchange), food and health (menu, appointment, symptom, prescription), and housing and community (rent, facility, address, neighbour). The selected items equip learners to navigate social, urban, and digital spaces independently. This domain supports the development of life skills and communicative autonomy, particularly for students preparing for higher studies or employment in unfamiliar environments.

4) Media, Technology, and Communication

The fourth domain incorporated vocabulary needed for engagement with contemporary media, digital communication, and online learning. It included terms related to digital tools and platforms (browser, stream, password, device), social media practices (post, comment, tag, share), digital etiquette and safety (privacy, spam, authentic, report), and news and information literacy (headline, source, bias, update). Although students may recognize many of these terms, their systematic inclusion was essential for strengthening media literacy. Mastery of this vocabulary enables learners to critically engage with technology-driven discourse and to communicate responsibly in digital environments.

5) Career and Global Awareness

The final domain was developed to prepare learners for professional communication and intercultural contexts. It included vocabulary related to employment and workplace practices (résumé, interview, teamwork, responsibility), interpersonal and communication skills (presentation, negotiation, collaboration), cultural awareness (diversity, etiquette, globalization), and global issues (sustainability, innovation, equality, volunteerism). This domain connects academic learning with career readiness. It encourages learners to use English to discuss topics of global and professional significance, thereby enhancing their worldview and future employability.

Research Design

The present study employed a mixed-method research design integrating both quantitative and qualitative approaches to examine the effectiveness of mobile-assisted language learning (MALL) on vocabulary acquisition. The participants of the study included forty first-year undergraduate students enrolled in a government college in the Kasaragod district of Kerala. Their mean age was 18.5 years. Although English served as the medium of academic instruction, the linguistic backgrounds of the participants were diverse, representing Malayalam, Kannada, Tulu, Malame, Marathi, Beary, Konkani, and Urdu as their mother tongues.

The study was conducted in a semi-formal educational setting as part of a skill club activity in the college. Students initially engaged in a discussion on the motion *"Mobile Assisted Language Learning Contributes to Sustained Vocabulary Growth."* Participants naturally divided themselves into two groups; supporters and opponents of the motion based on their individual perspectives. Following this debate, both groups

collectively agreed to conduct an experimental study to examine the actual impact of MALL on vocabulary development.

Participation in each group expanded organically until both reached twenty members. However, due to inconsistent participation over time, the groups were subsequently limited to fifteen members each, resulting in an active sample of thirty students who completed the study. For experimental validity, participants were categorized into two groups: an experimental group called MALL (n = 15) that used the mobile applications for vocabulary practice over six weeks, and a control group called TALL (n = 15) that received traditional vocabulary instruction through textbook exercises and note-taking.

Procedure

1. Pre-test:
Both groups undertook a 100-item vocabulary test assessing recognition and production skills. The test items were drawn from a systematically organized "Must-Know Words" list.
2. Intervention:
The experimental group engaged in MALL-based learning which included flashcards, matching activities, and interactive review sessions. In contrast, the control group studied the same word set through conventional methods involving reading passages and dictionary-based exercises.
3. Post-test:
After six weeks, both groups completed a post-test designed to measure vocabulary gains. The test incorporated interactive activities such as flashcards, matching games administered in a relaxed and collaborative environment.
4. Perception Survey:
To capture qualitative insights, the experimental group completed a perception survey exploring their attitudes toward MALL-based learning and their perceived progress in vocabulary acquisition.

Data Analysis

Quantitative data were analyzed using paired-sample t-tests to measure within-group gains and independent-sample t-tests to compare performance between groups. Statistical analyses were conducted using SPSS software. Qualitative responses from the perception survey were thematically coded to identify patterns in learner experience and motivation.

Table.1
Vocabulary Assessment

Sl NO	Pre test	Post test	Gain score
MALL1	12	32	20
M 2	15	33	18
M 3	13	32	19
M 4	17	40	23
M 5	16	38	22
M 6	6	26	20
M 7	12	30	18

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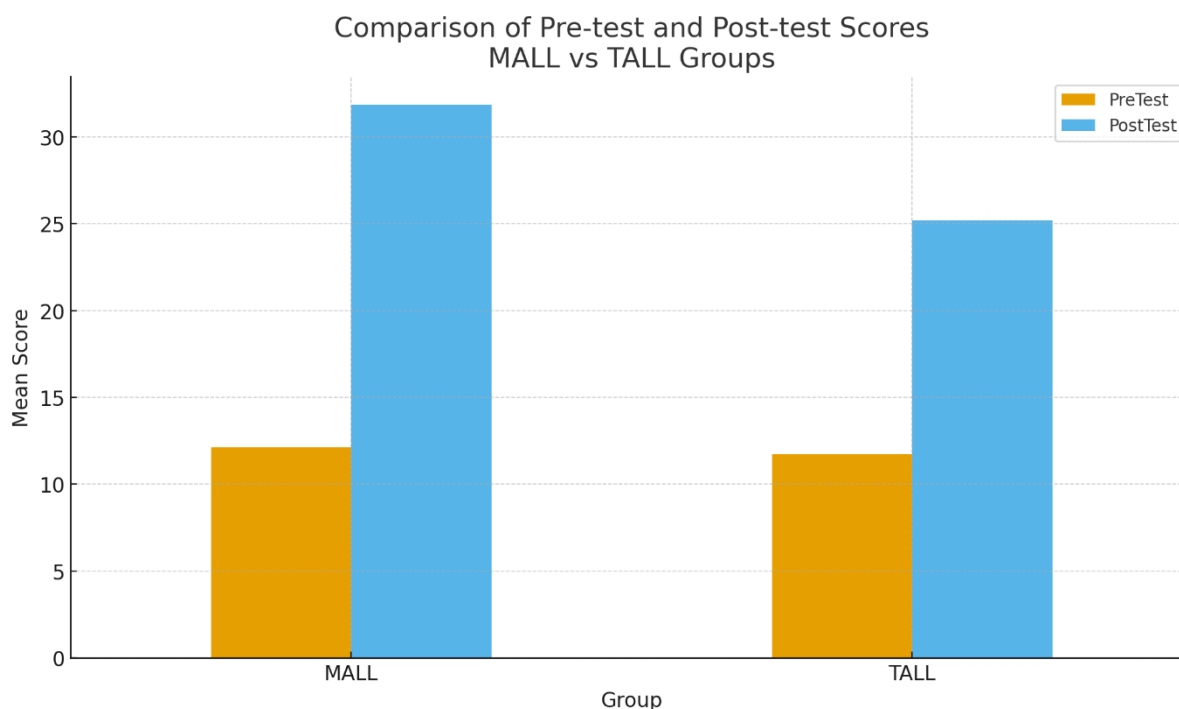
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M 8	9	25	16
M 9	4	23	19
M 10	18	40	22
M 11	13	33	20
M 12	11	30	19
M 13	8	26	18
M 14	13	33	20
M 15	15	37	22
TALL1	15	34	19
T2	8	20	12
T3	13	22	9
T4	11	22	11
T5	6	18	12
T6	8	29	21
T7	17	32	15
T8	11	24	13
T9	12	25	13
T10	13	22	9
T11	16	31	15
T12	10	22	12
T13	14	27	13
T14	17	33	16
T15	5	17	12

Table 2
Descriptive Summary

Group	Mean Pre-test	Mean Post-test	Mean Gain Score
MALL (Mobile Assisted Language Learning)	12.13	31.87	19.73
TALL (Text Assisted Language Learning)	11.73	25.20	13.47



(Fig.1)

Findings

Both groups showed improvement from pre-test to post-test.

- However, the MALL group achieved a much higher mean gain (≈ 19.73) than the TALL group (≈ 13.47).
- The bar diagram clearly shows a larger increase in the post-test mean of the MALL group, suggesting that mobile-assisted learning had a stronger positive impact on vocabulary development than the traditional method.

Inferential Summary (Test Comparison)

If this data were subjected to an independent-sample *t*-test comparing gain scores between MALL and TALL:

- The observed difference (≈ 6.26 points in mean gain) would likely be statistically significant, given the consistent pattern of higher post-test scores in MALL.
- Thus, the null hypothesis (no difference between the two instructional modes) could be rejected, supporting the inference that MALL significantly enhanced vocabulary learning outcomes compared to TALL.

Qualitative Results

Survey responses revealed that learners found MALL enjoyable and motivating. Many noted that gamified tasks reduced the “burden” of rote memorization. Students valued being able to practice outside the classroom, often on their mobile phones during commute or leisure time. However, some highlighted challenges, including limited internet connectivity and distractions from non-academic apps.

Learner Motivation through Fun Filled Activities

The incorporation of fun-filled and interactive activities has proven to be an effective pedagogical intervention for bridging such linguistic divides by fostering collaboration, peer interaction, and mutual support. When classroom tasks are situated within the familiar socio-cultural and campus contexts, learners exhibit heightened emotional engagement with the learning process. Such affective investment enhances motivation and gradually transforms learners from passive recipients of instruction into active participants who perceive English as a medium of expression and intercultural communication rather than as an academic requirement.

Research in motivational psychology and second language pedagogy substantiates the critical role of enjoyment and engagement in sustaining learner motivation. Deci and Ryan's self-determination theory posits that intrinsic motivation is strengthened when learners experience autonomy, competence, and relatedness within the learning environment (Deci and Ryan 72). Similarly, Dörnyei underscores that motivational intensity in language learning increases when tasks generate positive emotional resonance and social relevance (Dörnyei 115). Gamified learning environments and humour-based peer interactions have been found to enhance attention, participation, and vocabulary acquisition through affective stimulation and intrinsic reward mechanisms.

Findings from the present study substantiate these theoretical perspectives. The participants demonstrated measurable improvement in vocabulary gain scores and expressed favourable attitudes toward app-based and humour oriented quiz activities. These results suggest that playful, interactive pedagogies can significantly contribute to the sustained engagement and lexical development of the learners. For educators, the implications are pedagogically significant: integrating game-based tools, humorous quizzes, and culturally situated activities can transform vocabulary instruction into an experiential process that balances enjoyment with cognitive challenge. Furthermore, aligning these tasks with explicit learning objectives, promoting post-activity reflection, and fostering peer feedback within a supportive, laughter-friendly atmosphere collectively cultivate an environment conducive to intrinsic motivation. Fun-filled learning, therefore, transcends mere entertainment; it constitutes a purposeful pedagogical strategy that humanizes the classroom and redefines learning as a meaningful social experience. When learning assumes the affective tone of play, achievement becomes a natural outcome.

The findings reinforce the value of integrating mobile applications into vocabulary instruction. The higher gains among the experimental group align with Nation's framework, suggesting that repeated, multimodal input supports deeper lexical acquisition. The motivational boost observed echoes Self-Determination Theory, as learners felt greater autonomy and competence while engaging in gamified activities. This study also contributes to understanding MALL in multilingual contexts. Learners frequently reported using their first languages to check meanings while practising on Quizlet, effectively employing translanguageing strategies. Such practices highlight the complex role of multilingualism in vocabulary learning.

At the same time, challenges persist. Issues of internet connectivity, device availability, and potential distractions raise questions about sustainability. As Stockwell warns, mobile learning cannot succeed without pedagogical integration. Teacher scaffolding and institutional support are essential to maximize benefits

Conclusion

This study demonstrates that integrating mobile applications into ESL classrooms in Kerala significantly improves vocabulary learning outcomes and enhances learner motivation. By focusing on multilingual learners in a rural Kerala setting, it adds to the limited body of research on MALL in South India. Pedagogically, the findings suggest that mobile applications can complement traditional instruction, especially when teachers design structured, syllabus allied activities. At the same time, the digital divide and teacher preparedness must be addressed. Future research could extend this study longitudinally to assess long-term retention, compare multiple mobile platforms, and explore how translanguaging strategies can be systematically integrated into mobile-assisted vocabulary learning.

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