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Enhancing Speaking and Listening Skils through Mobile-Assisted Language and Learning in a Pre-University Context

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ABSTRACT

The Education and Training Evaluation Commission in Saudi Arabia has noted that many students entering university preparatory year programs (PYPs) struggle with foundational English skills, particularly reading and listening, which are essential for academic success. These challenges are often attributed to limited exposure to English, low Motivation, and traditional instructional methods, leading to growing interest in digital tools to enhance student engagement and learning outcomes. However, research on Mobile-Assisted Language Learning (MALL) implementation in the Saudi context remains limited. This mixed-methods study investigates the impact of Duolingo and ReadTheory on student motivation and the development of receptive skills. Sixty students at A1–A2 levels of the Common European Framework of Reference for Languages (CEFR) were purposively selected from a Saudi male-only public university. Guided by the PF-4M framework, which emphasizes authenticity, personalization, autonomy, and contextualization, quantitative data were collected using a CEFR-aligned Receptive Skills Test administered pre- and post-intervention, along with a post-only adapted Language Learning Motivation Scale (LLMS). Qualitative data were gathered through reflective journals that contained simplified self-assessment items, as well as weekly classroom observations, which were used to monitor participation and Engagement. Results indicated notable improvements in Motivation and receptive skills, with average test scores increasing from 8.12 (SD = 2.16) to 15.17 (SD = 1.79). Students reported that Duolingo's gamified tasks and ReadTheory's adaptive content were engaging, although some experienced challenges with comprehension and autonomous learning. The study provides practical insights for integrating scaffolded MALL tools into the PYP curriculum. Future research should investigate AI-driven applications that support the development of productive skills.
Keywords: mobile-assisted language learning (mall); CEFR A1–A2 learners; Motivation; receptive skills development; Saudi preparatory-year education.

INTRODUCTION

Despite being the official language of global business and academia, English remains a significant barrier for many in Saudi Arabia. A 2024 report by Pearson revealed that although 46 percent of Saudi professionals use English daily, only 23 percent feel confident doing so (Pearson 2024). The Education and Training Evaluation Commission (2023) in Saudi Arabia has noted that many students entering university preparatory year programs (PYPs) struggle with foundational English skills, particularly reading and listening, which are critical for academic success. This disparity reflects a troubling disconnect between language use and language readiness. The consequences of this gap are particularly acute for students transitioning into higher education. In Saudi preparatory-year programs, where English is the primary medium of instruction, many students, especially those at CEFR A1–A2 levels, struggle to comprehend complex academic texts and spoken lectures, directly impacting their academic performance (Al Zumor and Abdesslem,

2022).

Recent Saudi research on medical preparatory year students, many of whom are classified at CEFR A1–A2 levels, has revealed persistent deficits in academic receptive skills. The learner's report indicates limited English proficiency, which hinders academic performance, as evidenced by self-efficacy surveys that show low confidence in listening and reading. Additionally, program evaluations suggest that textbook-driven instruction limits authentic Engagement and exposure to real-world language use (Alshehri, 2023). An evaluation of English instruction in Saudi Arabia's preparatory programs showed that teaching methods remain predominantly textbook-focused and centered on lecture-style delivery, which reduces learner autonomy, interaction, exposure to authentic materials, and Engagement (Alfehaid, Alkhatib, and Mukundan 2024). Students at the lower levels of a course series often lack Motivation, as they receive little individualized feedback and are not exposed to diverse language situations.

Motivational gaps for students at the CEFR A1–A2 levels are well documented. These learners often contend with challenges such as low self-esteem, undue stress from academic expectations, difficulty remaining engaged with rigidly structured lessons, and fierce competition. Alshammari (2022) argues that the deeply rooted structural causes of low proficiency among Saudi EFL learners stem from disengagement due to dull teaching methods that are saturated with vocabulary-distant instructional practices and lacking in communicative English. Absent some form of focused pedagogical strategies or engagement frameworks tailored to these students' specific needs, they risk becoming increasingly academically disadvantaged.

The application of Mobile-Assisted Language Learning (MALL) stands out as particularly suited to address these issues because more recent research shows that learners from Saudi Arabia struggle with self-perception issues regarding basic skills, such as listening and reading, even when English is frequently used around them in academic contexts (Al-thresher, 2024). MALL is defined as using mobile devices, such as phones or tablets, and their associated applications for language learning, both inside and outside the classroom. MALL enhances learning through mobile devices

Popular platforms, such as Duolingo and ReadTheory, offer gamified content, immediate feedback, and adaptive learning paths that have been shown to enhance learner engagement and autonomy. For instance, 91.8 percent of Saudi EFL students rated Duolingo as "engaging and enjoyable," citing its supportive feedback and motivating structure (Althiyabi, 2025). Experimental data also demonstrates that Duolingo users at the A2/B1 level typically achieve reading and listening gains equivalent to several university semesters of study (Jiang et al., 2022). While these tools are widely available and have shown promise in motivating learners, their structured use in Saudi CEFR A1–A2 contexts remains under-examined (Keezhatta and Omar 2019).

Although there are encouraging examples of MALL in Saudi classrooms, such as Keezhatta and Omar's (2019) experimental study with secondary students, most

existing research focuses on general learner perceptions or informal application. There remains a lack of empirical studies evaluating how mobile tools affect the reading, listening, and motivation outcomes of low-proficiency learners when integrated systematically into curriculum-based instruction.

To address these gaps, this study investigates how mobile-assisted learning tools influence Motivation, reading and listening proficiency, and student perceptions among CEFR A1–A2 learners in Saudi preparatory-year classrooms. The tools are integrated into the curriculum rather than being optional or supplementary resources. This design ensures that findings reflect the real-world application of MALL in institutional teaching, making them directly relevant for educators and policymakers.

The following questions guide this research:

1. To what extent does MALL integration improve intrinsic and extrinsic Motivation among CEFR A1–A2 Saudi preparatory-year learners?
2. To what extent do CEFR A1–A2 learners improve their receptive language skills (reading and listening) after integrating MALL tools?
3. How do CEFR A1–A2 learners perceive the Usability, engagement level, and effectiveness of MALL tools within the formal classroom environment?

This study is significant because it focuses on a group often overlooked in educational research. CEFR A1–A2 learners in Saudi Arabia face specific instructional and motivational challenges that require targeted solutions. The study contributes to the existing literature by combining quantitative and qualitative data to examine how MALL tools affect language performance and learner attitudes. It provides evidence regarding the effectiveness of MALL when these tools are used in formal, structured environments rather than in isolated or voluntary learning contexts. The research offers valuable insights for educators, curriculum designers, and decision-makers who seek to integrate technology into foundational English programs. It also supports more informed and equitable technology use, ensuring beginner-level learners are not left behind. Theoretically, the study advances our understanding of how digital tools influence language learning processes, particularly in terms of Motivation and receptive skill acquisition at the earliest stages of language development. Ultimately, this study helps shift the conversation from the availability of technology to its effectiveness in the Saudi EFL classroom.

LITERATURE REVIEW

The adoption of new technologies has transformed the approach to knowledge acquisition. In addition, it contributes to a gradual progression from distance learning to e-learning and now mobile learning (Traxler, 2018). Mobile Learning (m-learning) is defined as learning activities that can be carried out on portable devices, such as smartphones and tablets, which facilitate multi-contextual education. Teaching and learning in this modern age mean learners can engage with content anytime, from anywhere, irrespective of age, background, or geographical lines.

Mobile-Assisted Language Learning (MALL) falls under this category as a subdivision of mobile learning, specifically about cognition technology-enhanced language teaching and learning. MALL builds upon older methodologies, such as Computer-Assisted and Web-Based Language Learning, by utilizing mobile phones for second language acquisition. This involves the use of educational software, comprising mobile applications and multimedia resources, via handheld devices that offer dynamic, self-paced, and tailored instruction.

What equally distinguishes MALL compared to other language acquisition methods is facilitating learners' engagement at any time from any location seamlessly across basic thematic levels through designated zones over both formal and informal frameworks, beyond the preset confines of classrooms.

Typically, students access learning materials remotely using mobile devices, which allows instant feedback and real-time engagement fueled by tailored lessons crafted through a blend of gaming dynamics models integrated with curriculum content, social tools, and educational frameworks. Such tools foster motivation and augment pathway independence while also raising learner participation. Systems negatively privileged contexts benefit particularly from MALL due to mobile technologies' unrivaled efficiency and ease of scaling reserves.

The encouraging payback that emerges with gamification has legitimized its application in Mobile-Assisted Language Learning (MALL). Purwanto and Syafryadin (2023) have demonstrated the engagement-enhancing impact of virtual badges, point systems, and other forms of interactivity on learners' vocabulary retention in English as a Foreign Language (EFL). These findings support numerous studies that have shown short-term motivational effects resulting from the autonomous use of gamified elements, such as Duolingo's flagging systems, streaks, leaderboards, and rewards. Game-like environments that induce dopaminergic responses, associated with achievement, excite construction or progression, fueling gaming dynamics and adaptation, are framed through computer-assisted structures. Lai Zheng provided evidence revealing the rampant consumption of mobile devices designed for self-regulated practice occurring outside the classroom setting, alongside minimal engagement with authentic and socially centered components. The authors posit personal sa self-directed structure stems from predictable situational habits suggesting absent purposeful design communicative growth deeper ongoing engagement technological frameworks cannot be realized holistically relational dynamics outside purpose-driven intention roots sap purposeful context irrelevant habitual backdrops devoid intention design render space blank neutral but purposive neutral Vortex principles framework bounded intentional focus structure slip out contextual anchors absence Directed habitual parameters rely deepen alongside toward movement boundaries transcend shifts expansion when devoid directional force permeate motivate evoke spark prompt invite call engage draw pull reality frame skirt margins stroke contours punctuations toroidal spiral dip phenomenon gravitates focus.

Due to deeply rooted sociocultural methodologies in Saudi Arabia where

autonomy is curbed the tendency towards reliance elevates educators at the helm may view thegamification toolset hierarchy poses challenges culturally problematic interactions compatibly acceptable relish gaps missing construct blend missing complement within idea external interact embedded propose-system orbit filters interaction circle dictate freely bound essence emerging pattern bring border formative shape anchored unrestricted dome petty dimensional three dual reinforce juxtapose multidimensional tether outlines shapes whence dimension unfolds perforated boundaries cage restraints construct negative free parameters channel reveal express perceived outline infinite form canvas punctured flow solitary streams intertwine neighboring alights awakened alive spark strokes imagine envision coax escape potential unbounded unrestrained infusing touch collision converge collide frames edges sorrow mesh unlock system unify patterns fractal harmony cradle weave dreams vision dances awaken wakes stirred gentle zephyrs drawn rippling motion contrast threshold hovers dwells summons beckons spirit outlining intertwine breaths diaphanous air tracing ethereal silhouette luminous kindred threading vision inspire diaphanous infusing caress whispering skirts moods ripple embrace essence languages. As Alrabai (2017) notes, more than 90 % of preparatory-year students favor teacher-centered classes. More than half focus solely on tests, indicating that motivational features such as gamification may be overlooked in these contexts. As noted earlier, while there is potential in gamification, its effectiveness hinges more on achieving overarching alignment between pedagogical and cultural frameworks.

Adaptive Learning and Receptive Skill Development

Adaptive learning technologies, such as ReadTheory, which utilize real-time performance data to adjust content difficulty, reflect emerging instructional approaches in Saudi Arabia. For instance, Alhumsi, Alshaye, and Sendi (2021) found that although e-learning tools are not fully adaptive, they effectively motivated Saudi EFL learners and supported the development of reading comprehension through the use of strategies. Mohammed et al. (2023) demonstrated that an adaptive stretch-text system significantly enhanced reading skills, including vocabulary, cohesion, decoding, and fluency, among university students in southern Saudi Arabia compared to traditional instruction. Okasha (2020) similarly emphasized that Saudi EFL students benefit more from adaptive and strategy-based reading interventions than conventional teacher-centered methods, underscoring the value of personalized instruction for receptive skill development. Studies highlight that while technology integration is increasing, long-term evaluations are "still emerging" in the Saudi context (Al-Seghayer, 2022).

Implementation Barriers in the Saudi Educational Context

While Saudi Arabia's Vision 2030 aims to stimulate the use of technology in education, significant pedagogical, logistical, and institutional challenges arise regarding the implementation of Mobile-Assisted Language Learning (MALL) tools. One persistent problem revolves around enduring rigid teaching habits. A substantial number of English language teachers continue to engage students with

lectures and remain reluctant to use mobile devices, considering them distractions or misaligned with curriculum goals. According to Al-Alami and Alhamami (2024), a significant number of English teachers in Saudi Arabia do not participate in professional development programs. Consequently, they lack the technological confidence necessary to effectively integrate mobile applications into well-planned lessons.

This concern is exacerbated in government-sponsored preparatory-year programs, which are often characterized by inflexible curricular guidelines, high-stakes evaluations, and limited teaching freedom. These conditions are counterproductive to efforts aimed at encouraging the adoption of instructional technologies and promoting learner-centered approaches. Alshammari (2024) notes that in many schools, administrative focus centers on rote syllabus delivery paired with exam-centric instruction, which lacks meaningful innovation, further stifling opportunities for mobile-enhanced learning experiences.

Alongside pedagogical inertia, multiple logistical hurdles pose significant barriers to the effective deployment of MALL. In rural areas and regions that are remotely located and under-resourced, essential resources are often lacking, such as reliable internet connections for mobile devices and IT support. This lack of resources hinders effective use over sustained periods and hampers the comprehensive application of these resources. Even in economically developed regions of cities, the ownership gap among devices for students widens the digital divide and restricts fair access to mobile-based activities. Several reports have highlighted these gaps as weaknesses in system preparedness arising from unfulfilled infrastructure readiness frameworks where there is an intense desire but little systematic resolve (Al-Seghayer, 2022).

An additional concern is the shortage of mobile learning applications that are tailored linguistically and culturally for learners from Saudi Arabia. Several more sophisticated systems fail to provide services in Arabic, overlook Islamic culture, and do not adhere to the Saudi syllabus for English, rendering them less attractive to students and teachers.

This context is often overlooked within MALL research in Saudi Arabia. Most studies focus on learner motivation, perceptions of Usability, or study-specific tools while overlooking overarching structural and pedagogical contexts shaped by cultural informatics. Alnujaidi (2021), for example, noted that teachers' use or lack of mobile technology tends to be a function of personal willingness and availability, affectionally framed by Motivation or need, rather than holistic infrastructural support that encompasses wider systemic conditions, which often go undeservedly unnoticed. Another example provided by Alaghbary (2021) highlights the fluent use of technological devices by students while also citing poor teacher competence and rigid teaching styles as dominant deterrents to meaningful, practical pedagogic application.

The studies conducted reinforce the fact that the contextual elements determining the adoption of Mobile Assisted Language Learning (MALL) are often

overlooked as secondary rather than essential when juxtaposed with teaching and learning results.

Theoretical Consideration: The PF 4M Framework

This study adopts the Pedagogical Framework for Mobile-Assisted Language Learning (PF-4M), recently introduced by Wang, Ye, and Bozdoğan (2024), as a guiding theoretical lens. PF-4M provides a structured model for designing and evaluating mobile language learning experiences by integrating four key pedagogical dimensions: authenticity, personalization, autonomy, and contextualization. These dimensions collectively support a balanced and pedagogically grounded use of mobile technologies in language learning contexts.

- **Authenticity** – prioritizing real-world language use through meaningful and relevant input
- **Personalization** – adapting content to match learner profiles and proficiency levels
- **Autonomy** – fostering learner agency and self-directed Engagement
- **Contextualization** – aligning instruction with local cultural, curricular, and infrastructural realities

While PF-4M is a recent contribution, its core dimensions are grounded in longstanding MALL research. For example, mobile learning literature has long highlighted scaffolding and authentic input as crucial for learner comprehension and Engagement. Similarly, the importance of autonomy and personalization in sustaining Motivation has been affirmed across multiple studies.

More recently, adaptive tools such as ReadTheory have demonstrated how tailoring content difficulty to individual learner levels can enhance reading development and learner confidence, aligning directly with the personalization domain of PF-4M. Several existing MALL frameworks have been critiqued for disproportionately emphasizing technological affordances while neglecting pedagogical integration. This imbalance has reduced their practical relevance in formal educational settings, particularly in contexts such as Saudi Arabia, where traditional instructional models prevail. PF-4M addresses this gap by explicitly combining mobile technologies with sound instructional design, ensuring that mobile learning is not a novelty but an embedded component of a pedagogically coherent strategy. This dual focus on pedagogy and technology makes PF-4M particularly suitable for evaluating the effectiveness of mobile tools, such as Duolingo and ReadTheory, in fostering learner motivation and receptive skill development. Finally, PF-4M stands out as a pedagogical framework because it explicitly foregrounds the unique characteristics of language learning. Designed specifically for mobile language instruction, PF-4M recognizes learning content as a core pillar of effective MALL pedagogy. This content-centered emphasis reflects principles from the Technological Pedagogical Content Knowledge (TPACK) model, highlighting the intersection of technological tools, pedagogical strategies, and subject matter knowledge. Within the PF-4M framework, ten types of TPACK integration are identified—including CD (Content-Driven), LC (Learner-Centered),

LCT (Learner-Centered with Technology), LCD (Learner-Centered with Content Design), and LTCD (Learner- and Technology-Centered with Content Design)—each underscoring the significance of using authentic and meaningful language input as instructional material.

While the core PF-4M model emphasizes these four domains, specific instructional strategies often support its implementation. Figure 1 illustrates instructional features, such as scaffolding, learner interaction, real-life context, and learner motivation, that operationalize the framework within both classroom and app-based environments. PF-4M was selected for this study because it addresses many pedagogical and contextual challenges Saudi CEFR A1–A2 EFL learners face, particularly in preparatory-year programs dominated by exam-focused, teacher-centered instruction. Its emphasis on learner autonomy and scaffolded progress makes it particularly suitable for low-proficiency learners who struggle with Motivation and Engagement in static classroom environments. By embedding these integrations, PF-4M strengthens both the pedagogical relevance and instructional effectiveness of mobile language learning, particularly for foundational EFL learners. This balanced attention to content, learner engagement, and contextual factors ensures that MALL interventions are not only technologically sound but also linguistically purposeful, making PF-4 M especially suited to enhancing Motivation and receptive skill acquisition in low-proficiency, exam-oriented learning environments, such as Saudi Arabia's preparatory-year programs.

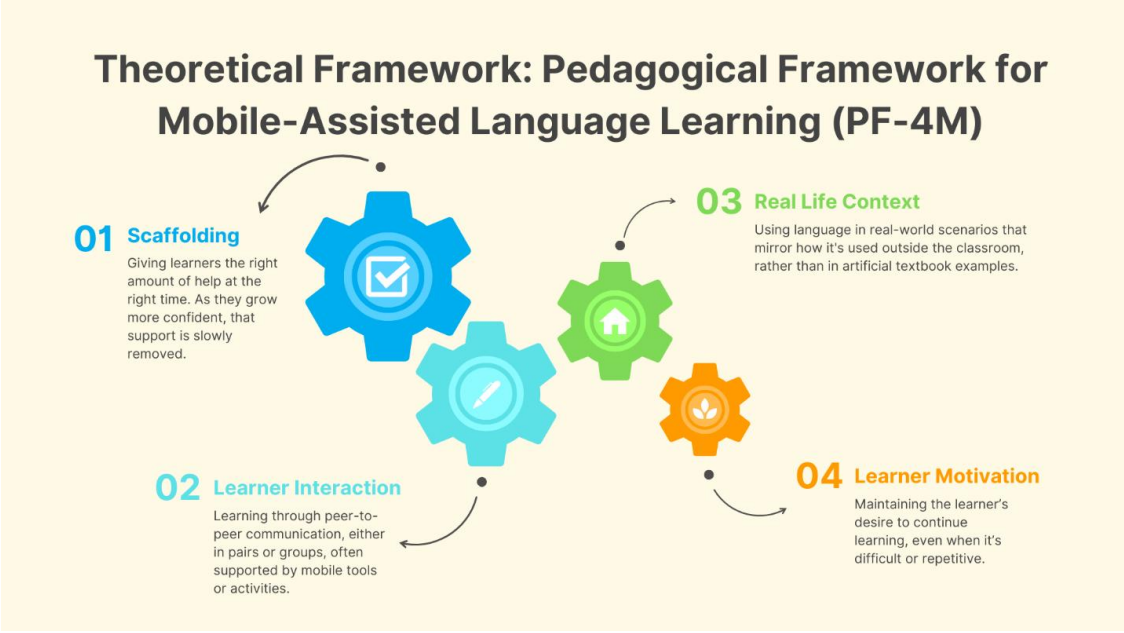

Figure 1. Instructional Features Supporting the PF-4M Framework

Figure 1 highlights four key instructional elements — scaffolding, learner interaction, real-life context, and learner motivation — that align with and support the core pedagogical dimensions of PF-4M. These features illustrate how the framework is operationalized in MALL environments to enhance learner engagement, authenticity, and language development.

METHODOLOGY

This study adopted a mixed-methods design to evaluate the impact of Mobile-Assisted Language Learning (MALL) tools, specifically Duolingo and ReadTheory, on the Motivation and receptive skills (reading and listening) of Saudi CEFR A1–A2 EFL learners in a preparatory-year program. The design enabled simultaneous collection of quantitative and qualitative data, with both strands carrying equal weight in answering the research questions. This approach aimed to enhance the interplay of various factors while refining the accuracy of the results and fostering a more nuanced understanding of the learners' experiences.

The evaluation focused on understanding the impact of two widely recognized MALL tools—ReadTheory and Duolingo—on learners' Motivation, as well as their receptive skills in reading and listening. Both tools were incorporated into students' regular classroom activities. ReadTheory offered tailored adaptive reading practice at learner-specific levels, and Duolingo provided self-paced vocabulary and listening modules in a gamified format. Their selection was justifiable not only for their sheer popularity and ease of access alone; they epitomized vital elements of effective MALL: interactivity, adaptivity, and learner engagement-focused design.

For guiding implementation and analysis, the study adopted PF-4M (Pedagogical Framework for Mobile-Assisted Language Learning) by Wang, Ye, and Bozdoğan (2024). PF-4M proved critical, as it ensured that the digital tool integration captured a sound educational rationale based on specific CEFR A1–A2 learner considerations aligned with their pedagogical profile. The four framework pillars—authenticity, personalization, autonomy, and contextualization—were used as a guide for designing and evaluating the intervention. Customization was achieved with real-time adaptive text responsiveness through ReadTheory. Autonomy came from self-directed tasks via Duolingo.

Authenticity was woven into the tasks about language use and contextualization, which were motivated by culture through prompts and reflective journaling. By situating the study within PF-4M, the research aimed to ensure that the intervention did not remain at the level of tool use but instead provided a pedagogically sound and replicable framework for integrating MALL into EFL foundational levels instruction as a teaching practice.

Sample and Sampling Strategy

The sample consisted of 60 male Saudi EFL learners enrolled in the foundation-level preparatory-year English program at an all-male public university in Saudi Arabia. All participants were placed at CEFR A1–A2 proficiency levels based on institutional placement test scores. A purposive sampling strategy was used to select students who met the following inclusion criteria:

1. Enrolled in the preparatory-year EFL course for the current semester
2. Placed within the A1–A2 CEFR band based on institutional in-house placement testing
3. Had regular access to mobile devices outside of class

Instructors of these learners were also consulted but not included as research subjects. The choice of a purposive sample was justified based on the need to focus on a homogeneous proficiency group within the Saudi context, ensuring internal validity while capturing learner-specific outcomes in MALL environments.

To ensure both originality and replicability, the study employed three primary research tools:

1. **Motivation Assessment Tool (Appendix A)**

A custom-designed 20-item Language Learning Motivation Scale (LLMS) was developed for this study, grounded in the PF-4M framework. The tool aligned with PF-4M's pillars of autonomy and personalization, but to avoid bias and over-alignment, it was also informed by general motivation theory and mobile learning best practices. Items were categorized under intrinsic Motivation, learner control, and adaptive Engagement without explicitly referencing the framework in wording. The 20 items were each rated on a 5-point Likert scale. The instrument was pilot-tested with 10 students from the same institution, and the wording was refined based on feedback to ensure clarity and neutrality.

2. **Receptive Skills Assessment (Appendix B)**

A custom-designed Receptive Skills Test (RST) covering reading and listening comprehension was developed based on CEFR A1–A2 descriptors. The test included a mix of multiple-choice, cloze, and short-response questions, verified by two senior EFL instructors for construct validity. This instrument was used both before and after the intervention to track measurable improvements in skill.

3. **Reflective Learner Journals (Appendix C)**

Students maintained weekly reflection journals to capture qualitative insights throughout the six-week intervention. Prompts such as "Describe your experience using Duolingo this week," "Did you find the reading passages on ReadTheory helpful? Why or why not?" and "How did using mobile tools affect your motivation to learn English?" guided students to reflect on their motivation levels before and after using the tools, describe any difficulties encountered during mobile-based activities, and evaluate the usefulness of Duolingo and ReadTheory in improving their reading and listening skills. These were analyzed thematically to capture emotional, cognitive, and behavioral shifts that were not evident in the numeric scores.

4. **Classroom Observations (Appendix D)**

The researcher conducted classroom observations weekly using a standardized checklist to record learner-device interaction patterns, levels of Engagement, and instructional integration. These observations contributed non-respondent behavioral data, which strengthened the triangulation of findings.

The study followed a six-week intervention timeline during which Duolingo and ReadTheory were integrated into classwork and assigned homework. Participants received initial training in using the platforms. Duolingo was used for 15 minutes of daily vocabulary and sentence-building practice, while ReadTheory was assigned for structured reading comprehension practice.

Data collection occurred in three stages:

- Week 1 (Pre-Test Phase): Administration of the RST
- Weeks 2–5 (Intervention Phase): Use of mobile tools, journal writing, and observations
- Week 6 (Post-Test Phase): Re-administration of RST and LLMS conducted, and collection of final journals

All data were anonymized and coded to protect participant identities. Participants gave informed consent and had the option to withdraw at any time. The ethical procedures followed were aligned with the university's IRB protocols.

Quantitative data from LLMS and RST were analyzed using paired t-tests to determine statistically significant changes in Motivation and receptive skills. SPSS was used to ensure transparency and reproducibility of the statistical analysis.

Qualitative data from journals were analyzed using thematic coding. Codes were derived inductively and refined through multiple passes to increase inter-coder reliability. Observational data were triangulated with journal entries to confirm trends in learner engagement and tool usage.

This dual-track analysis enables both numerical validation and narrative contextualization, ensuring that the findings are both statistically sound and pedagogically meaningful.

Justification and Replicability

This mixed-methods approach was chosen because it enables the research to generate original, multifaceted data that extends beyond mere perceptions. Using respondent data (LLMS, journals) and non-respondent data (observations) adds depth and authenticity to the results. Anchoring the study in PF-4M added theoretical precision and replicability. Unlike technocentric models, PF-4M provided a pedagogical roadmap for integrating mobile tools in educationally meaningful and contextually appropriate ways for Saudi preparatory-year programs. Each method and instrument was mapped to one or more of the framework's dimensions, making it easier for future researchers to adapt this model to other low-proficiency, exam-focused EFL environments.

All tools, timelines, and sampling procedures were carefully documented to ensure that the study could be replicated by other researchers working with similar learner populations in comparable instructional contexts. This is evident in the research matrix presented in Table 1.

Table 1. Research Matrix

Research Question	Approach	Sample	Tool(s)	Data Type
To what extent does MALL integration improve intrinsic and extrinsic Motivation among CEFR A1–A2 Saudi preparatory-year	Quantitative + Qualitative	60 Saudi EFL learners	LLMS, Journals, Observations	Numeric + Textual

learners?				
To what extent do CEFR A1–A2 learners improve their receptive language skills (reading and listening) after integrating MALL tools?	Quantitative	Same	Receptive Skills Test (pre-post)	Numeric
How do CEFR A1–A2 learners perceive the Usability, engagement level, and effectiveness of MALL tools within the formal classroom environment?	Qualitative	Subset (n=60, journaling)	Reflective Journals, Observations	Thematic

Note. MALL = Mobile-Assisted Language Learning; LLMS = Language Learning Management System; EFL = English as a Foreign Language.

Ethical Considerations

This study followed ethical research practices to protect the privacy, dignity, and rights of participants. An ethical review was conducted by the institutional academic and research oversight committee with IRB Approval Number IRB/24 08/051 on August 24, 2024. The ethics document is aligned with the principles of the Declaration of Helsinki (2013) and institutional guidelines on the responsible conduct of research. Participants were informed about the study's objectives and provided written consent prior to participation. They were guaranteed confidentiality as well as anonymity regarding their responses and were granted the right to withdraw at any point without consequence. The study employed non-invasive methods, including voluntary anonymous surveys and semi-structured interviews. All data collected were appropriately archived in a secure location, accessible only to the research team, where no personally identifiable information was documented or reported.

RESULTS

This section presents the findings from the mixed-method data collected during the six-week Mobile-Assisted Language Learning (MALL) intervention. Quantitative results are reported from three instruments: the Language Learning Motivation Scale (LLMS), the Receptive Skills Test (RST), and weekly classroom observation checklists.

Motivation Assessment (LLMS)

In this study, a total of 60 responses were collected using the Language Learning Motivation Scale (LLMS), a 20-item instrument designed to measure language learning motivation. The mean overall score achieved by participants was 64.87 (SD = 0.77), with a range of 64 to 66 out of a maximum possible score of 100.

The average score per item for all participants was 3.24 (SD = 0.04), measured using a five-point Likert scale.

Figure 2 displays the mean scores for each LLMS item, indicating relatively consistent agreement across motivational constructs.

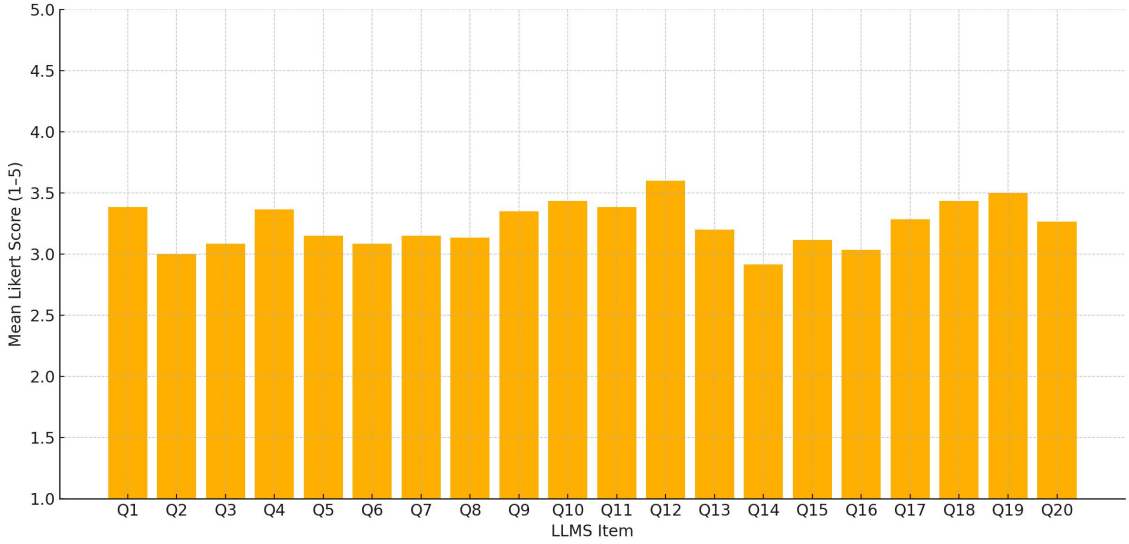

Figure 2. Mean Likert scores across the 20 LLMS items. Each item was rated from 1 (Strongly Disagree) to 5 (Strongly Agree).

Receptive Skills Assessment

The Receptive Skills Test (RST), a 20-item test consisting of 10 reading and 10 listening questions aligned with CEFR A1–A2 descriptors, was administered to 60 participants to establish baseline reading and listening proficiency. The average total score on the pre-test was 8.12 (SD = 2.16) out of a maximum of 20, with individual scores ranging from 4 to 13.

Following the intervention, the same group completed the post-test RST. The average total score increased to 15.17 (SD = 1.79), with individual scores ranging from 11 to 19. This represents a substantial overall gain in receptive language proficiency.

Figure 3 illustrates item-level performance, showing a consistent upward shift in the percentage of correct responses across all 20 items. This granular Improvement reflects enhanced comprehension, vocabulary recognition, and listening accuracy due to the structured integration of MALL tools. While individual variation remained, the magnitude and consistency of gains across the cohort underscore the positive impact of digital language learning platforms on early-stage EFL learners.

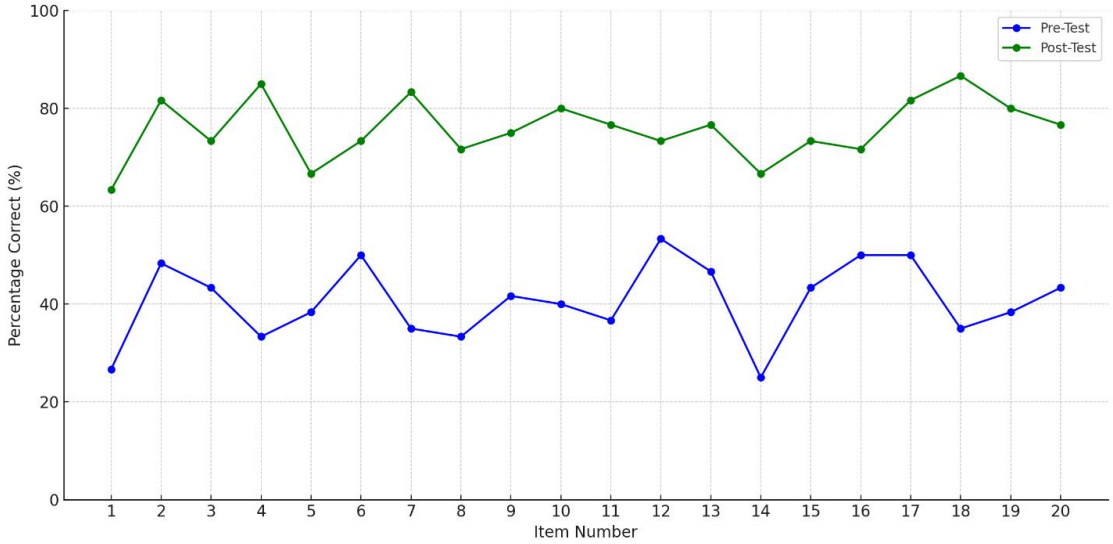

Figure 3. The proportion of correct responses per item on the Receptive Skills Test (RST) for pre-test and post-test. Each item is scored as correct (1) or incorrect (0).

All 20 test items showed Improvement from the pre-test to the post-test, confirming the overall effectiveness of the MALL intervention. The extent of gain varied: items such as 2, 4, 7, 12, and 18 exhibited substantial increases, while others like 10, 13, and 14 showed moderate yet meaningful Improvement. Even items with initially lower performance (e.g., Item 1) registered significant post-test growth. This indicates that the intervention effectively reinforced a broad spectrum of CEFR A1–A2 receptive skills. Nonetheless, additional instructional support may benefit higher-order skills, particularly those requiring inference or parsing complex structures. The results highlight the strengths and the future potential of MALL tools in foundational language programs.

Reflective Learner Journals

Over four weeks, a total of 60 students submitted 480 journal entries. Thematic coding highlighted substantial Engagement (n = 144), Improvement (n = 138), Usability (n = 108), and Motivation (n = 54). The terms "Challenges" and "Recommendations" appeared in 54 and 36 entries, respectively. Due to their vaguely nonspecific content, a total of 114 entries were labeled as "Other."

The engagement that was noted often related to the gamified application of Duolingo. Students referred to the apps as "fun," "like a game," or "better than books." As one learner remarked, “I like racing with my brother,” while another stated, “I enjoy the streak and goal feature.” These comments confirm that interest and sustained interaction were provided through competitive, reward-centered frameworks every week.

About participant observations, one individual remarked, “It is colorful but should repeat harder words.” This implies the design could capture and hold attention, but more advanced vocabulary should be used within its verbal pedagogical frameworks. Additionally, another person suggested, “It can help by adding slower audio,” which highlights the need for more tailored auditory support to be implemented.

Responses to Motivational feedback focused on both External/Intrinsic motivators. Learners commented, “I feel smart when I get full marks,” alongside “They help more than watching YouTube.” This illustrates how quick reward systems and measurable achievements nurture confidence, alongside the sense of accomplishment that low-stakes assessments can provide.

Nevertheless, most participants reflected on challenge responses that hint at a conflict between autonomy and understanding the concept, which the PDF provides the option to answer without being embedded. Students voiced “It is hard without help from the teacher,” or combinations of other options,” It needs better explanations of the rules.” All these elements highlight the need for careful instructional design of learning materials in mobile-assisted contexts and emphasize the extreme level of dependency that foundational learners with low levels of digital fluency have on educational scaffolding.

Some responses specifically referred to ReadTheory-formulated exercises, such as narrative-based reading passages, in which students were asked to share their thoughts. One learner mentioned, "A school story helped me read faster," and another responded, "I liked the birthday party story." These remarks suggest that they derived significant meaning from the texts in question as they developed their personally perceived reading fluency over time. Whilst this indicates positive engagement with the content, several comments suggested that learners struggled mentally with Reading Theories' adaptive model. The phrases "It is hard without help from the teacher" and "It needs better explanations of rules" demonstrate that although the tool in question was helpful, it needed instructional scaffolding to be utilized to its full potential. These statements capture a wider perspective within Saudi EFL contexts where reading self-efficacy has a notable impact on strategy use and comprehension (Alzahrani, 2021), as well as in cases where digital tools like ReadTheory necessitate teacher scaffolding for prolonged effectiveness (Keezhatta & Omar, 2019).

Students' responses to the last prompt, which asked them if they would recommend using the apps to a friend, were clearly defined, albeit sparse. Most answers were affirmative: “I told my cousin to use Duolingo,” “I think my friend should try these apps." Such responses exemplify the peer-to-peer convergence of digital literacy and motivation.

As noted in this section, much of what added Little analytical value came from simple statements such as “It is good” or answers like “I learned colors red and blue,” which recurred over time. These responses may have been simplistic, with repetitive themes involving how learners experience the integration of technology into their learning; this lack highlighted an interesting consistency across journaling periods. Moreover, this contributed to strong affective and cognitive engagement, alongside MALL tools aligned with LLMS findings, supplemented by post-test improvement data.

Nonetheless, they also raised important concerns around accessibility and the need for in-app assistive features. The qualitative insights support the necessity of

purposeful integration and adaptive task creation in mobile-assisted EFL learning.

Table 2 summarizes the frequency of thematic categories that emerged from the journal data, highlighting learners' perceptions of Engagement, progress, and Usability during mobile-assisted English learning.

Table 2. Frequency of Thematic Categories in Reflective Journals

Thematic Category	Number of Responses
Engagement	144
Improvement	138
Usability	108
Motivation	54
Challenge	54
Recommendation	36
Other	114

Classroom Observations

Classroom observations were conducted weekly over four weeks (Weeks 2–5) by two trained observers (Observer A and Observer B) using a standardized 10-item checklist that focused on behavioral indicators of Engagement, interaction, and autonomy. Each item was rated on a 3-point scale (0 = Not Observed, 1 = Partially Observed, 2 = Fully Observed), following a clearly defined rubric suitable for CEFR A1–A2 learners using Duolingo and ReadTheory apps.

As summarized in Table 3, Observer A generally reported higher frequencies of autonomous and engaged behaviors. For instance, students' independent use of Duolingo (M = 1.25 vs. 0.75), peer discussion around Duolingo tasks (M = 1.75 vs. 1.00), and careful answering of ReadTheory questions (M = 1.50 vs. 0.25) were more frequently noted by Observer A than Observer B. The most significant discrepancy was observed in careful reading behavior ($\Delta = 1.25$), suggesting differing thresholds for interpreting cognitive Engagement.

However, both observers agreed on specific behaviors, such as students choosing their own ReadTheory stories (M = 1.00), indicating a shared perception of learner autonomy on that task. Notably, Observer B reported slightly higher scores for teacher-reliant behaviors, such as students asking about app problems and completing tasks on time. Several negative patterns emerged consistently across observations. Firstly, both observers noted low levels of self-correction or persistence in ReadTheory after incorrect answers, particularly in the early weeks. Observer B, in particular, flagged a lack of careful reading (M = 0.25), suggesting a tendency to rush through comprehension tasks. Secondly, autonomous behaviors such as independently using Duolingo or navigating app features without teacher assistance were only partially observed (overall M = 1.00), implying limited self-directed learning. Thirdly, sharing scores and celebrating progress, a social, motivational indicator, was not widely observed (M < 1.50), indicating room to cultivate peer encouragement. In addition, Observer B noted frequent technical issues, with some students relying on the teacher even for minor navigation problems with the app. These issues affected students' ability to engage

independently, particularly during the ReadTheory sessions.

Observer notes provided qualitative insights that contextualized these discrepancies. Observer A emphasized spontaneous peer interaction and strategic app usage, while Observer B highlighted intermittent technical challenges and a more teacher-dependent learning atmosphere. These observational differences underline the complexity of interpreting learner behavior, particularly in tech-mediated language learning environments.

Table 3. Mean Ratings from Classroom Observations (Weeks 2–5)

Observation Item	Observer A	Observer B	Difference
Students use Duolingo without the teacher's help	1.25	0.75	0.50
Students try the ReadTheory passages again after mistakes	1.50	1.00	0.50
Students look happy or focused when using apps	1.50	1.00	0.50
Students talk to peers about Duolingo tasks	1.75	1.00	0.75
Students answer ReadTheory questions carefully	1.50	0.25	1.25
Students use app feedback to improve	1.50	1.25	0.25
Students ask the teacher about app problems	1.00	1.25	-0.25
Students finish Duolingo exercises on time	1.25	1.50	-0.25
Students choose their own ReadTheory stories	1.00	1.00	0.00
Students share app scores with friends	1.50	1.25	0.25

DISCUSSION

This section interprets the study's findings using triangulated data from LLMS scores, pre- and post-receptive skills tests, reflective journals, and classroom observations. The discussion is structured according to the PF-4M theoretical framework and aims to explain both positive impacts and persistent implementation challenges in MALL integration.

ReadTheory and Motivation: A Platform for Autonomy, Limited by Self-Efficacy

The average LLMS score was 3.24 (SD = 0.038), suggesting a generally high level of learner motivation. However, item-level analysis revealed that not all motivational dimensions were equally supported. The lowest scoring items were Q14 ("I continue studying English even when I find it difficult," M = 2.92) and Q2 ("I feel confident learning English on my own," M = 3.00). These results suggest that while ReadTheory's adaptive passages supported autonomy for some students, others struggled with self-regulation and persistence, especially when encountering linguistic complexity.

Reflective journal entries reinforced this: 54 negative expressions referenced confusion, fatigue, or difficulty (e.g., "Some stories use hard grammar," "I forget some words"). Observation data showed that only 8 out of 10 classroom sessions had

more than five students reattempting ReadTheory questions after mistakes. In contrast, items like Q12 (“I like using English apps,” M = 3.60) and Q19 (“I feel better at English after using the apps,” M = 3.50) indicate that learners valued the digital format, even if they required teacher mediation for complex content.

Despite ReadTheory’s alignment with the personalization and feedback pillars of PF-4M, its limited impact on sustaining Motivation and self-efficacy underscores the importance of embedding adaptive scaffolding and contextual cues. For foundational learners, particularly those without previous digital reading experience, instructional support is not supplementary but central to the success of mobile interventions.

Duolingo and Receptive Skills: Notable Gains, But Engagement Fluctuated

The post-test data showed a mean gain of 5.25 points (SD = 4.25) from pre-test scores. While 74.2% of learners improved, the distribution of gains varied: 8 students improved by 10 points or more, 18 improved by three points or fewer, and one declined slightly. This highlights significant variability in learner responses despite overall success.

Learners frequently mentioned Duolingo's benefits in their journals, with 144 positive reflections referencing enjoyment, confidence, or gamified Motivation (e.g., "I smile when I finish a passage," "The speaking game helped me with pronunciation"). Observationally, 7 out of 10 sessions showed students completing Duolingo tasks on time and sharing scores with peers. However, by Week 4, Motivation waned, with entries like "Sometimes I feel bored with topics" or "The quiz makes me feel nervous." These patterns support previous literature noting that gamified systems lose motivational strength if not embedded in broader pedagogical structures.

While Duolingo supported PF-4M's pillars of Motivation and multimodality, its long-term efficacy appears contingent upon variation and reinforcement. The app's initial novelty was insufficient to sustain Engagement, indicating a need for teacher-led integration strategies that maintain learner curiosity and contextual relevance.

Dual-Tool Synergy and Task Variation: Enhancing Engagement Through Rotation

The integrated use of Duolingo and ReadTheory enhanced Engagement through tool rotation, which introduced pedagogical variation that sustained learners' attention and improved outcomes. This statement is backed by previous research on both tools: Duolingo's gamified elements—such as points, badges, and streaks—have been shown to significantly boost Motivation and Engagement in EFL classrooms (Indrawan, Daristin, and Laili, 2023) while ReadTheory, as part of a mobile-assisted language learning approach, has been found to enhance reading comprehension through adaptive, personalized text difficulty (Pearlin and Mercy Gnana Gandhi 2024).

Students frequently contrasted the two in journals, stating that the alternation reduced monotony: “Duolingo was fun after the hard reading,” and “ReadTheory helped me think more, and Duolingo gave me energy.” Classroom

observers consistently reported improved completion and focus when tasks rotated weekly. Peer discussion increased during these periods, with students often comparing app results and motivating one another.

This synergy aligns with Stockwell and Hubbard's (2013) findings, which suggest that multi-tool ecosystems offer richer Engagement than single-platform models. Within the PF-4M model, the combined use of ReadTheory and Duolingo effectively leveraged all five pillars of the model. The reading app emphasized personalization and monitoring, while Duolingo strengthened Motivation and multimodality. However, their full impact depended on structured classroom delivery, underscoring the importance of sequencing and instructional design in mobile learning environments.

The line chart (Figure 4) from classroom observations revealed considerable discrepancies between Observer A and B, particularly in their careful Engagement with reading tasks. This suggests that student participation was uneven and possibly affected by individual learner traits or contextual distractions. Such findings reinforce the value of triangulated methods to capture a fuller picture of learner behavior.

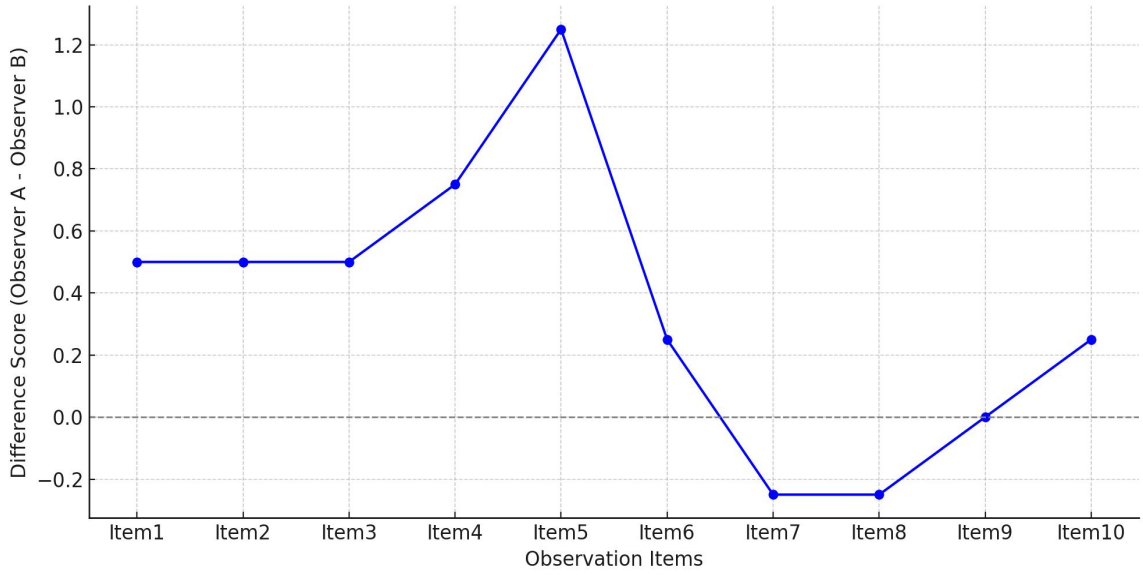

Figure 4. Difference in Classroom Observation Ratings Between Observer A and Observer B Across 10 Behavioral Items

Theoretical Implications: Extending PF-4M to Foundational Learners in Guided Settings

This research study applies the PF-4M model to pedagogical frameworks for guided instructional settings with beginner EFL learners. Although PF-4M was created from self-directed learning environments, it demonstrated flexibility in more structured settings as long as its elements were integrated into regular classroom activities. In the course design, app-based Personalization, Feedback, and Multimodality were evident alongside Motivation and Monitoring, which were teacher-led. For instance, only half of the 10 sessions documented students selecting ReadTheory stories independently, while in six sessions, learners solicited

clarification from their instructors. These actions suggest that foundational learners are most responsive when their digital choices are carefully guided. Teacher supervision should consist of using backend analytics alongside immediate verbal feedback during lesson delivery to reinforce task adherence and rectify false understandings.

This framework was created through design-based research focused on mobile-assisted language learning (MALL) contexts and is built upon the principles of personalization, feedback, Motivation, and Multimodality as core descriptors of pedagogically appropriate mobile language learning systems. It addresses educators' concerns about how to effectively incorporate mobile technologies into instruction grounded in sound theoretical frameworks.

In this case study, PF-4M served as a framework for exploring app features related to personalized task identification such as ReadTheory (for personalized reading), multitask engagement Duolingo (for gamified language drills), and cued peer interaction assessment for feedback cycles on adults' training sessions within early childhood classes with ongoing reflection protocols integrated after each session. However, its relevance faded in environments marked by low levels of digital competency or instructor control over learner freedom due to gaps embedded within the guidelines that formed an imposed 'lower order' hierarchical level of scaffolding.

Foundational learners need further guidance that PF-4M does not spell out:

- Emotional scaffolding: A significant number of learners required encouragement from peers, affirmation from the instructor, and feedback through the application.
- **Language simplification:** Some digital passages were too complex for students' current levels, requiring more specialized support beyond the app's boundaries.
- **Peer modeling and collaborative features:** PF-4M fails to fully account for the need for actively guided social interaction among learners, which is essential for low-proficient users.

These findings align with existing critiques, which note that frameworks like PF-4M, although pedagogically robust, assume a baseline of learner digital competence and autonomy. Combining embedded app support with external facilitation, such as strategic training or guided peer interaction, is essential for early-stage learners. The framework may be enhanced by distinguishing between embedded (app-based) and external (human- or teacher-mediated) scaffolding to more fully describe effective MALL integration in guided educational settings.

Practical and Policy Implications

The effectiveness of mobile tools is maximized when used during classroom instruction under teacher guidance; teachers act as facilitators who help integrate technology with learning objectives and scaffold student use (Phetsut and Waemusa, 2022). When instructors supported the use of tools, learners were more likely to complete tasks, retry difficult passages, and engage meaningfully. Scaffolding also facilitated reflective discussion and helped align tool activities with lesson objectives. To sustain Engagement, teachers should rotate between apps every week, offer brief

debriefs, and utilize formative tasks to reinforce key concepts. For instance, vocabulary quizzes or group storytelling can consolidate app-acquired language. Teacher training should emphasize the operation of tools, data interpretation, behavior monitoring, and emotional support, particularly for learners who are anxious or have low proficiency in the subject matter. Institutional support must include digital access, professional development, and curricular mapping to ensure alignment between app content and learning outcomes. Even the most engaging tools may fail to produce lasting educational value without structured integration. The findings emphasize that integrating Mobile-Assisted Language Learning (MALL) requires systemic institutional and policy support, particularly in foundational EFL settings. While improvements in Motivation and receptive skills highlight the pedagogical value of mobile tools, sustained impact demands planning and infrastructure. At the institutional level, MALL must be aligned with curriculum objectives, with platforms like ReadTheory and Duolingo embedded into structured lesson sequences. Institutions should develop integration protocols that guide instructors on sequencing app-based work and leverage mobile learning analytics to inform formative assessments and instructional adaptations (Alnujaidi, 2021).

Teacher professional development is crucial. While many Saudi EFL teachers recognize the potential of mobile learning, they also express significant concerns about its implementation, mainly when it is not supported by targeted training (Alnujaidi, 2021). Training initiatives must, therefore, include strategies for scaffolding digital tasks, interpreting analytics data, and supporting learners with limited digital literacy. Policy frameworks should establish rigorous criteria for MALL tool adoption, evaluating apps for language-level appropriateness, cultural relevance, user accessibility, and cognitive suitability. A centralized evaluation framework led by national educational bodies (e.g., the National Center for e-Learning and Distance Education) could ensure consistent and equitable implementation. Research indicates that Saudi EFL teachers perceive training programs as being misaligned with their classroom needs, underscoring the need for curriculum-relevant professional development (Alshammari and Oudah, 2018). Equity is another key concern. Even when tools are available, access is often uneven. Policies should support device and connectivity subsidies, localized bilingual onboarding materials, and low-literacy support to ensure foundational learners can benefit equally. The notable improvements in Motivation and skills documented in this study, achieved through scaffolded, in-class mobile learning, underscore that MALL can function as a core instructional strategy. However, its impact is maximized only when backed by coherent policy, professional capacity building, and quality assurance frameworks.

Limitations

This study is limited by its single-institution scope and focus on male students enrolled at a single public university in Saudi Arabia, which may affect the generalizability of the findings to other institutional types, regions, or gender groups.

Recommendations

1. Utilize Tool Pairings for Balance Between Learner Motivation and Interest: Use pair apps like ReadTheory and Duolingo. Use weekly alternation schedules to promote sustained motivation as well as cognitive demand balance.

2. Schedule Integrative MALL Instruction: Instead of assigning it as homework, embed the use of apps within the taught lesson plans. Learning objectives are improved alongside learner accountability during structured classroom use compared to unstructured or out-of-class assignments.

3. Empower Instructional Mobile Pedagogy Design: Equip teachers with skills such as analyzing application data, digitally scaffolding tasks, and assisting learners struggling with low motivation or literacy levels. Formative feedback focused on social-emotional support improves outcomes for low-motivated learners on mobile device tasks.

4. Tailor App Content to Learners' Immediate Environment: Modify it by tailoring stories, vocabulary, and visuals to make them more relatable in their familiar outside-of-school environments, including cultural contexts, languages, and current realities, through bilingual glosses and topic scaffolds.

5. Develop a National Evaluation Framework for Mobile-Assisted Language Learning (MALL): Provide rubrics for evaluating mobile-assisted tools in terms of curriculum alignment, accessibility, and pedagogical value, facilitating the assessment of school app quality, while encouraging public-private partnerships in the development of these tools.

6. Aid Sustained Evaluations: Motivate institutions to conduct longitudinal evaluations that combine classroom assessments and analytics from applications to measure language skill development over time, using advanced analytic techniques to adjust instruction based on shifts in learning milestones.

Transforming MALL from a novelty into a primary instructional model strengthens national educational frameworks by implementing these recommendations, while promoting high-impact sustainability at each societal level and engaging stakeholders directly.

CONCLUSION

This research examined the effects of mobile-assisted language learning (MALL) tools, ReadTheory and Duolingo, on the motivation and receptive skills of Saudi preparatory-year learners of English at CEFR A1 – A2 levels. Following the PF-4M framework, this study employed a mixed-methods approach, combining quantitative surveys and tests with qualitative learner journals and classroom observations. Using multiple sources of data through different methods increased the trustworthiness and reliability of the findings while minimizing bias in interpretation.

Key research findings revealed that learners using ReadTheory reported generally high motivational scores, particularly in areas linked to personalized feedback and progress tracking. Duolingo users demonstrated significant

improvements in reading and listening proficiency, with average post-test scores nearly doubling those of the pre-test baselines. The integration of both tools over six weeks fostered behavioral, cognitive, and emotional Engagement, as evidenced by journal reflections and observed classroom interactions. Challenges emerged in sustaining Engagement beyond the third week and in learners' initial adjustment to adaptive reading tasks, underscoring the need for ongoing support and task alignment with learner capabilities.

The study's main contribution is that it demonstrates that even low-proficiency learners in resource-constrained, test-driven educational settings can benefit from carefully scaffolded MALL interventions. It affirms the relevance of the PF-4M framework for foundational learners. It highlights the pedagogical potential of pairing feedback-rich and gamified tools to strike a balance between challenge and enjoyment. Additionally, the study provides empirical evidence to support the integration of digital learning in Saudi preparatory-year programs, contributing to the broader global conversation on equity and access in English language education.

The broader implications include curriculum design, teacher training, and educational policy. Curriculum developers are encouraged to adopt multi-tool digital strategies that alternate between cognitive demand and motivational reinforcement. Teacher training programs should focus on equipping instructors with the digital pedagogical skills needed to guide, personalize, and monitor mobile learning activities. Policymakers and institutional leaders should invest in digital infrastructure and instructional capacity to ensure that MALL can be scaled equitably across public-sector institutions.

Future research should explore gender-inclusive and cross-institutional replications of this study, adopting longitudinal designs to track sustained learning outcomes and investigate alternative theoretical models better to understand the mechanisms underlying digital Motivation and skill development. In addition, comparative studies using other MALL platforms or combinations could provide insight into optimal tool pairings for diverse learner profiles. Specifically, future investigations could focus on AI-driven MALL applications to enhance productive skills such as speaking and writing, which remain underexplored in current literature.

In conclusion, the evidence from this study sends a clear message. When intentionally integrated into classroom instruction, mobile-assisted tools can meaningfully enhance learner motivation and foundational language skills, even in early-stage learners with limited exposure to English or technology. The success of ReadTheory and Duolingo in this context illustrates the potential of MALL for building confident, self-directed, and competent language learners. It is now essential for educators, researchers, and decision-makers to act by embracing these tools and institutionalizing practices that make such digital interventions sustainable, inclusive, and pedagogically effective.

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