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A Systematic Review of Mobile-Assisted Language Learning in Saudi EFL Education: Trends, Outcomes, and Future Directions (2015-2025)

Dr. Afnan Almegren *
amalmegren@pnu.edu.sa

Abstract:

This systematic review based on PRISMA integrates research on Mobile-Assisted Language Learning (MALL) in Saudi English as a Foreign Language education from 2015 to 2025. Searching Scopus, Web of Science, ERIC, ProQuest, and Google Scholar found empirical research in both secondary and tertiary settings. Following screening, studies were categorized by participants, skills, tools/apps, design, outcomes, and restrictions. Narrative synthesis demonstrates a focused emphasis on vocabulary and reading, alongside an increasing although constrained effort in speaking and writing; grammar and English for Specific Purposes (ESP) remain little investigated. WhatsApp, Quizizz, Telegram, ELSA Speak, and Duolingo are the most used tools. Mobile interventions frequently improve outcomes across designs; notably vocabulary growth and reading comprehension. They also reliably boost motivation, learner, autonomy and, when emphasized, collaboration. The reported limitations encompass small, single institution samples, brief durations, inconsistent infrastructure, and restricted teacher-led research. This review suggests a plan for the future: use multi-site, teacher-led trials to scale up retrieval-based vocabulary practice and mobile-scaffolded reading; use design collaboration as the treatment; combine mobile practice with feedback to improve writing accuracy and advanced speaking skills; and make sure that investments in capacity-building and infrastructure are in line with the Saudi 2030 Vision. In general, evidence shows that well-designed MALL can provide Saudi EFL learners with important, scalable benefits. There are various perspectives on how this can influence the curriculum, tests, and teacher training.

Keywords: Mobile-Assisted Language Learning (MALL), Motivation and Autonomy, PRISMA Systematic Review, Reading Comprehension.

* Associate professor of Applied Linguistics, Department of Applied Linguistics, College of Languages, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia.

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مراجعة منهجية للتعلّم اللغوي المعزَّز بالأجهزة المحمولة في تعليم اللغة الإنجليزية باعتبارها لغة أجنبية في السعودية: الاتجاهات والنتائج والتوجهات المستقبلية (2015-2025)

د. أفنان المقرن*
amalmegren@pnu.edu.sa

الملخص:

تقدّم هذه المراجعة المنهجية، المستندة إلى إطارPRISMA، تكاملًا للبحوث المتعلقة بتعلم اللغة المعزَّز بالأجهزة المحمولة (MALL) في سياق تعليم اللغة الإنجليزية باعتبارها لغة أجنبية في المملكة العربية السعودية خلال المدة (2015-2025). وقد تم البحث في قواعد بيانات Scopus وWeb of Science وERIC وProQuest وGoogle Scholar، مع حصر الدراسات التجريبية في المرحلتين الثانوية والجامعية. وبعد تطبيق معايير الفرز، صُنِّفت الدراسات وفق المشاركين، والمهارات المستهدفة، والأدوات/التطبيقات، والتصميم المنهجي، والنتائج، والقيود. كما يكشف التحليل السردي عن تركيز واضح على مفردات اللغة ومهارة القراءة، مع تزايد، في الاهتمام بمهارتي التحدث والكتابة وإن ظل محدودً، في حين لا تزال القواعد اللغوية وتعليم اللغة الإنجليزية لأغراض خاصة (ESP) مجالات قليلة التناول البحثي. وتُعد تطبيقات WhatsApp وQuizizz وTelegram و ELSA Speak وDuolingo الأكثر استخدامًا. وتشير النتائج إلى أن التدخلات المعززة بالأجهزة المحمولة غالبًا ما تُحسّن نواتج التعلّم عبر مختلف التصاميم البحثية، ولا سيما في تنمية المفردات وفهم المقروء. كما تُظهر أثرًا إيجابيًا ثابتًا في تعزيز الدافعية، وتنمية الاستقلالية لدى المتعلمين، وتعزيز التعاون عند تصميم التدخل لهذا الهدف. ومن أبرز القيود المذكورة: صِغر حجم العينات واقتصارها على مؤسسة واحدة، وقِصر المدد الزمنية، وتفاوت البنية التحتية، ومحدودية البحوث التي يقودها المعلمون. وبناءً على ذلك، تقترح هذه المراجعة أجندة مستقبلية تشمل: تنفيذ تجارب متعددة المواقع بقيادة المعلمين لتوسيع نطاق ممارسة المفردات القائم على الاسترجاع، والقراءة المدعومة بالأجهزة المحمولة؛ واستخدام التعاون في تصميم المقرر كعلاج؛ ودمج الممارسة المعززة بالأجهزة المحمولة بالتغذية الراجعة لتحسين دقة الكتابة ومهارات التحدث لمتقدمة؛ وضمان مواءمة الاستثمارات في بناء القدرات والبنية التحتية مع مستهدفات رؤية السعودية 2030. وعمومًا، تشير الأدلة إلى أن تصميمًا تربويًا محكمًا لتقنيات MALL يمكن أن يحقق فوائد تعليمية مهمة وقابلة للتوسّع لدارسي اللغة الإنجليزية في المملكة العربية السعودية. كما تفتح النتائج آفاقًا متعددة لإعادة النظر في تطوير المناهج، وآليات التقويم، وبرامج إعداد المعلمين.

الكلمات المفتاحية: التعلّم اللغوي المعزَّز بالأجهزة المحمولة (MALL)، تعليم اللغة الإنجليزية، الفهم القرائي، الدافعية والاستقلالية.

* أستاذ اللغويات التطبيقية المشارك، قسم اللغويات التطبيقية، كلية اللغات، جامعة الأميرة نورة بنت عبدالرحمن، الرياض، المملكة العربية السعودية.

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Introduction:

Mobile-Assisted Language Learning (MALL) has changed the way, time, and place that of English language acquisition. MALL means learning language with the help of mobile devices (Palalas, 2011). Saudi Arabia's national strategy connects education to the growth of human capital. The goal is to encourage students to do better than the world average and to use a modern, tough curriculum (Kingdom of Saudi Arabia, 2016). This has made Saudi EFL teachers and students use mobile apps like WhatsApp, Duolingo, Kahoot, and Quizizz to help them learn new words, read, and write together.

Nonetheless, the evidence foundation continues to be disjointed. International evaluations of (MALL) often focus on specific skill areas rather than comprehensive language development. Afzali et al. (2017) analyzed literature from various situations about the influence of MALL on vocabulary development, demonstrating that review studies frequently focus on discrete language sub-skills rather than holistic language usage. Klimova and Zamborova (2020) examined the impact of mobile and new technologies on second-language reading comprehension.

Aljameel (2022) offers an extensive analysis of research about the implementation of technology in EFL classrooms within Saudi educational contexts. It looks at how different tech tools, like interactive whiteboards, web-based tools, mobile learning, and social media apps, have been used in English teaching and learning. It also points out the trends and benefits that these studies have found, what results better language learning and more student engagement. It also points out the problems that keep coming up, such as not enough infrastructure, not enough teacher training, and not enough classroom-based research done by teachers instead of academic researchers. The review stresses that technology use in Saudi EFL situations is promising and can help people learn a language, but for this to work, there needs to be strong technology infrastructure, regular teacher training, and more research at all levels and with different tools.

Kamasak et al. (2020) offer a critical review of literature on the effectiveness of mobile-assisted language learning (MALL) to evaluate its efficacy across different educational contexts. Their findings suggest that while mobile integration significantly supports learner engagement and broadens instructional accessibility, its success is not guaranteed. The authors argue that the impact of MALL is dependent upon the interaction between instructional design, specific learner characteristics, and the way technology is implemented. Furthermore, the review cautions against common systemic challenges, such as the overreliance on digital tools at the expense of pedagogical integration, and inflated expectations regarding its impact. The study asserts that while MALL remains a promising pedagogical tool, its educational value is only fully realized through careful planning, appropriate pedagogy and a balanced, evidence-based implementation strategy.

Martinez et al. (2025) present a systematic review to investigate the application of mobile-assisted language learning (MALL) within higher education, with a particular focus on EFL contexts. Their analysis indicates that mobile technologies significantly advance linguistic competencies by promoting an environment of heightened motivation, learner autonomy, and pedagogical flexibility. The authors emphasize that the main strength of MALL lies in its ability to facilitate personalized learning and extend engagement beyond the classroom. However, the study identifies critical barriers to success, most notably technical constraints, a lack of specialized teacher training, and disparate levels of student digital literacy. Consequently, Martinez et al. conclude that while MALL offers substantial potential for university-level language instruction, its efficacy is ultimately dependent upon stronger institutional support and the thoughtful, infrastructure-backed integration of technology into teaching practices.

This evaluation employs PRISMA 2020 to analyze Saudi MALL papers published from 2015 to 2025. PRISMA 2020 replaces the 2009 statement and has new reporting guidelines that show how studies are now better recognized, evaluated, and combined (Page et al., 2021). Using PRISMA makes things clearer and easier to repeat, which is important for making decisions about education that fit with Saudi Vision 2030. Based on this reasoning, the review poses three questions: First, what are the common mobile applications utilized for English language learning in Saudi EFL context? Second, which language domains and skills (e.g., vocabulary, grammar, reading, writing, speaking, and ESP) have been effectively addressed via MALL? Third, what common research designs, methodologies, and pedagogical outcomes have been reported in the literature across the 2015-2025 period? Fourth, what constraints to MALL use do EFL Saudi learners encounter?

Literature Review

Learning Vocabulary

A lot of Saudi MALL research has been about vocabulary acquisition, which shows how important lexical knowledge is for proficient communication. A considerable amount of empirical research demonstrates that mobile applications and game-based platforms considerably improve English vocabulary acquisition among learners. For instance, Alhebshi and Gamlo (2022) discovered that Saudi foundation-year students utilizing the vocabulary game app *Quizizz* significantly surpassed a control group in post-test assessments, while even students instructed through conventional methods strongly concurred that digital games could facilitate their vocabulary acquisition. In a similar vein, Azi (2023) discovered that students utilizing mobile vocabulary apps performed significantly better on tests than students in comparison groups. Previous data corroborates these findings: Ahmed (2015) noted that preparatory-year students who were encouraged to study vocabulary through cellphones not only surpassed their counterparts utilizing paper-based materials but also exhibited heightened passion and motivation. Alqarni (2024) recently demonstrated

higher post-test vocabulary scores after a mobile learning intervention, concluding that mobile learning can have a favorable effect on English vocabulary outcomes.

Reading Comprehension

In comparison to vocabulary acquisition, there exists a scarcity of Saudi studies that have investigated reading comprehension as a distinct aspect of MALL, despite promising first results. Keezhatta and Omar (2019) performed an experimental investigation in Riyadh with 120 secondary-school students, who were randomly divided between experimental and control groups. The intervention incorporated MALL exercises into second-language reading teaching for students experiencing difficulties, yielding a statistically significant enhancement in reading comprehension for the experimental group relative to the traditional instruction group ($p < .05$). The researchers also concluded that mobile-assisted reading activities created a motivating learning environment that improved both reading performance and learner engagement.

Hazaea and Alzubi (2018) offer supplementary qualitative evidence by advocating for Saudi preparatory-year students to utilize mobile applications such as WhatsApp and Google for accessing reading materials. Their observations suggested that learners were more autonomous and engaged in extended reading beyond the classroom, taking increasing responsibility for text selection and self-directed practice. These findings indicate that MALL can transcend traditional textbook-based methods by facilitating learners' access to English texts anytime and anywhere via mobile technology. Although there is still not much controlled experimental research on reading comprehension in Saudi EFL settings, the evidence we do have shows that mobile technologies can improve reading results by making students more interested in what they are reading and giving them more chances to read real-world material. However, additional research is required to investigate long-term comprehension improvements and to assess the efficacy of MALL for particular reading sub-skills, including skimming, scanning, and inferencing.

Writing and Speaking Skills

Empirical research on mobile-assisted writing and speaking in Saudi EFL contexts has progressed at a slower pace compared to studies on vocabulary and reading, often utilizing mixed-methods designs; yet the results thus far are predominantly positive. Few studies have investigated the utilization of mobile platforms to facilitate the development of written language. Lee and Al Khateeb (2021) examined writing fluency on smartphones against paper, demonstrating that while composing in English on mobile devices was slower, students preferred correctness above speed by utilizing tools like spell check. Even though their writing speed slowed down, students still liked writing on their phones and preferred using both paper and phone-based writing tools. This suggests that mobile tools can enhance traditional writing practices rather than replace them.

Alharbi (2024) investigated the perspective of Jeddah University students regarding the utilization of Telegram as a mobile-assisted language learning (MALL) tool to facilitate English as a foreign language learning. The study employed a quantitative survey approach and discovered that students exhibited highly favorable sentiments about Telegram, particularly appreciating its accessibility, communication simplicity, and capacity to facilitate engagement beyond the classroom. Participants indicated that Telegram enhanced interaction with English learning resources, peer collaboration, and informal language practice, implying its potential efficacy in cultivating receptive and productive abilities. Overall, there is not much study on mobile-assisted writing in Saudi Arabia, and much of it focuses on what learners think instead of how well they do. This shows that further experimental work is needed to see how MALL can improve accuracy, complexity, and text organization.

Conversely, speaking abilities have garnered heightened study interest, especially via mobile applications that integrate aural feedback, artificial intelligence, and gamification. Alfuhaid (2021) investigated the influence of *Duolingo* on the speaking competency of Saudi secondary students, revealing that after a four-month intervention, the experimental group exhibited significant enhancements in speaking performance and total language proficiency relative to a control group. Learners' positive perceptions of the app correlated with less speaking fear, indicating that gamified mobile contexts can mitigate emotional obstacles to oral practice. The research from Saudi EFL contexts suggests that MALL can facilitate speaking development by improving pronunciation, fluency, and learner confidence when mobile technologies are effectively integrated into pedagogy. However, due to the intricacy of speaking as a talent, forthcoming research would be advantageous to investigate methodologies that integrate mobile applications with interactive oral tasks, including real-time communication and collaborative voice-based activities.

English for Specific Purposes and Grammar

Mobile-assisted language learning in English for Specific Purposes (ESP) and grammar education is still a largely underexplored topic in Saudi EFL research, even though some initial results are encouraging. Most Saudi MALL studies have concentrated on general English proficiency. This inequity is evident in the limited number of studies investigating the utilization of mobile devices for professional or technical English learning.

Alqarni (2024) is an exception, he did a case study to explore how mobile-assisted learning affected Saudi college students' vocabulary and grammar. The study employed a pre-test/post-test design including 29 diploma-level learners and revealed improved post-test scores in vocabulary and overall academic performance following the mobile intervention, particularly in English vocabulary and grammar. The results indicate that mobile platforms can accelerate grammar acquisition through interactive and contextualized

practice, providing an alternative to conventional memory techniques. Alqarni emphasizes that mobile technologies can enable more interactive and adaptable methods of grammar and vocabulary acquisition.

Aside from a few Saudi studies, empirical evidence confirming direct developments in grammatical accuracy via MALL is still restricted compared to vocabulary-focused research. Alongside Alqarni's (2024) research, Al-Durayhim (2023) performed an extensive experimental study investigating the influence of WhatsApp-based teaching on grammatical proficiency in Saudi higher education. Employing a control experimental group design, the study conveyed statistically significant developments in grammatical performance among the students participating in structured WhatsApp activities, thus demonstrating that mobile messaging platforms can assist grammar development when pedagogically directed.

International evaluations have also pointed out that not much attention has been given to English for Specific Purposes-focused MALL. These reviews indicate that mobile language research focuses mostly on vocabulary learning, while domain-specific language use and grammar teaching are still not well-represented. This imbalance is particularly significant due to the increasing need for ESP programs in Saudi higher education, such as English for medical, business, and engineering purposes. A limited number of Saudi studies have started to reveal that mobile platforms can assist grammar learning when instructions are clear and lessons are well-planned. Nonetheless, there has not been much research on how MALL can be used for ESP. Upcoming research should investigate the effectiveness of mobile technology in facilitating the acquisition of specialized terminology and grammatical constructs, such as medical abbreviations or discipline-specific speech patterns, in manners that are not achieved by conventional ESP textbooks. Mainly, current research suggests that MALL could improve grammar acquisition by enhancing engagement and providing contextualized practice. Nevertheless, strong empirical evidence in Saudi ESP settings is still scarce, emphasizing a distinct direction for future research.

Motivation, Autonomy, and Teamwork

Results from Saudi MALL research consistently confirm positive impacts on learner motivation, autonomy, and collaborative behaviors. Researchers regularly indicate increased engagement and enthusiasm following the introduction of mobile technologies. For instance, Ahmed (2015) noted that the participants involved in a smartphone-based intervention were much more enthusiastic and motivated than those in the control group. This underscores the advantages of mobile learning settings. These motivational advantages are generally credited to the interactive and learner-centered characteristics of MALL.

This notion is also supported by real-world data. Applying a controlled design based on self-determination theory, Alamer et al. (2023) confirmed that instant messaging technologies can improve learner motivation, showing that WhatsApp usage improved interest and achievement while decreasing

language-learning anxiety. These results are consistent with survey-based research by Ali and Bin-Hady (2019), which Speaking-focused research ed that Saudi university students viewed WhatsApp as helpful for English acquisition and as a means to reduce language-use anxiety. The overall views of Saudi EFL learners towards mobile applications are mostly positive to somewhat positive. The study yielded positive mean results for both attitude and motivation, indicating broad acceptance of MALL and the potential for enhanced involvement. Alfuhaid (2021) also affirmed that learners' enjoyment of a gamified language tool like Duolingo improved their speaking confidence, thus emphasizing the strong relationship between motivation and learning outcomes.

Studies in Saudi EFL settings have also linked mobile-assisted learning to increased learner independence. Mobile tools help students to take more responsibility for their learning by giving them flexible access to materials whenever and wherever they want. Hazaea and Alzubi's (2018) qualitative study revealed that preparatory-year students utilized WhatsApp and online resources to enhance reading activities beyond the classroom. Their investigation revealed that learner autonomy improved as students had more control over text choice, reading schedules, and learning environments. These results align with broader theoretical viewpoints emphasizing that mobile technologies can fulfill learners' requirements for autonomy and competence, thus boosting self-regulated learning and intrinsic motivation.

Mobile platforms have also been evidenced to encourage Saudi EFL students to learn together. Several studies utilize the social functionalities of mobile applications, such as group chats, to encourage peer connection. For example, Al-Ahdal and Alharbi (2021) employed collaborative mobile vocabulary tests across two Saudi colleges and found that vocabulary retention improved when MALL was overtly used as a collaborative learning tool. Even basic tools like WhatsApp discussion groups have been related to promoting a feeling of learning community and decreasing the barriers between participants, especially for those who are less confident.

Mobile Tools/Apps Used

Saudi research on MALL published from 2015 to 2025 reveals that researchers tried out various mobile technologies, which were chosen to fit with certain language skills and their ease of participants' use. In all of this research, there is a clear inclination towards apps that are easy to use and popular where learners engage in their daily lives. Messaging tools are quite popular, and WhatsApp is commonly used for activities like writing practice and group discussion. Teachers usually created WhatsApp groups to assist communication. They used the app's familiarity and immediacy to support learners' use of real English. Learners' responses were mostly positive because combining educational and social communication decreased anxiety and raised interest.

Saudi MALL literature also examines language-learning apps that use games. For example, Alfuhaid (2021) observed Duolingo's role in speaking development and found that it had a positive effect on learners' oral proficiency. Alhebshi and Gamlo (2022) also investigated the role of the Quizizz app in facilitating vocabulary learning using quizzes based on games. The findings revealed better test performance and positive learner views, signifying that competitiveness, points, and immediate feedback can support motivation. These results demonstrate the importance of mobile games in supporting engagement and boosting language skills.

More recently, apps using AI and focusing on speech have started to draw attention. One example is *ELSA Speak*, which offers automated input on how to pronounce words. Almutairi and Alghammas (2025) reported that participants appreciated the tailored and low-pressure practice environment provided by AI-supported tools, which improved their pronunciation and fluency. Saudi higher education systems also utilize institutional platforms like Blackboard Mobile. At King Abdulaziz University, learners can use their mobiles to access learning management systems, which allows them to be involved with course materials, tests, and discussion forums. Research examining students' perceptions of Blackboard Mobile highlights the significance of user-friendliness and cultural relevance in sustaining motivation and continued usage (Aloufi & Alotaibi, 2025).

Along with structured apps, students regularly use mobile features every day like web browsers, online dictionaries, and translation tools to practice their language skills independently. Hazaea and Alzubi (2018) indicate that Saudi students frequently use search engines to reach English reading materials and mobile dictionaries to help them learn new words outside the classroom.

Methodological Frameworks in Saudi MALL Research

The corpus of Saudi MALL research published from 2015 to 2025 shows the application of various research methodologies, with quasi-experimental designs emerging as the most predominant. Numerous studies have used pre-test/post-test control group designs to measure the learning advantages associated with mobile-based interventions. For example, Keezhatta and Omar (2019) employed an experimental design in which participants were randomly appointed to experimental and control groups to explore the impact of mobile-enhanced education on reading comprehension. Likewise, Alhebshi and Gamlo (2022) utilized pre- and post-tests, surveys and interviews to compare a mobile game-based vocabulary group with a group that learned in a traditional way. These quasi-experimental designs have been utilized broadly and have shown their effectiveness in representing cause-and-effect relationships, usually through statistically significant enhancements in the outcomes of the experiment. Alfuhaid (2021) is another example where he split high school students into two groups: one used an app whereas the other did not. Then he used inferential

statistics to prove that Duolingo was effective at improving speaking skills. These strategies together support the evidence base by accounting for early proficiency differences.

Besides experimental methodologies, mixed-methods designs are regularly used to assess both learning results and learner perceptions. Various Saudi research combinations enhance the understanding of MALL interventions. For example, Almutairi and Alghammas (2025) used a mixed-methods design that integrated pre- and post-tests with questionnaires that had both closed- and open-ended items, assisting statistical validation of speaking improvements while examining learners' subjective experiences. Similarly, Alhebshi and Gamlo (2022) triangulated test score data with survey responses and subsequent interviews to facilitate the interpretation of vocabulary achievements in learner motivation and cognitive load. Qualitative and descriptive methodologies have also provided valued insights. Hazaea and Alzubi (2018) utilized portfolios and interviews in a qualitative case study to investigate participants' autonomy in mobile-supported reading.

Gaps in the Literature

The reviewed research shows positive effects of mobile-assisted language learning in Saudi settings; however, they also signal certain methodological and substantive restrictions that have not been explored enough. One of the significant issues is the restricted scope and generalizability of a large portion of the present work. Several studies are directed within a single institution or classroom, employing small convenience samples. While observed gains in classrooms of 30 students or experiments with 40-60 participants are valued, these results cannot be generalized to the varied Saudi EFL setting. Furthermore, gender separation in the Saudi education system entails that numerous studies focus solely on either male or female participants, with few exploring outcomes across both genders, thus restricting wider applicability.

Another restriction is the imbalanced coverage of linguistic competencies. Vocabulary acquisition dominates the Saudi MALL research, succeeded by limited investigations on reading and speaking skills. However, there is still a lack of exploration in advanced writing, listening comprehension, and pronunciation. Furthermore, specialized areas such as English for Specific Purposes (ESP), advanced language skills like critical reading and oral presentations, and outcomes with a special focus on grammar have received inadequate attention. This echoes other international mobile-learning reviews, which indicate prolonged gaps in ESP-focused MALL research.

From a methodological viewpoint, numerous Saudi MALL studies measure short-term learning outcomes only, usually using direct post-tests at the end of an intervention. Consequently, it is ambiguous whether the improvements lead to long-term retention or continued proficiency development. The

insufficiency of longitudinal designs denotes a substantial deficiency, which highlights the necessity for evidence about the durability of MALL effects. Furthermore, many studies prioritize participants' views and attitudes, including engagement, motivation, and anxiety, without methodically connecting these emotional variables to assessable language performance. Whereas perception-based statistics deliver valuable insights, deeper results would arise from research that clearly links attitudinal outcomes with measurable performance achievements.

Other practical issues that are mentioned irregularly but have not been examined in a systematic way include inconsistent internet connection, mobile device distractions, and different levels of digital literacy. In addition, most studies assume that mobile technologies are available and accepted without paying much attention to institutional constraints, policy considerations, or teachers' professional development needs. All these issues can affect the integration of MALL in Saudi classrooms.

Methodology

PRISMA 2020 standards were followed in this research review to ensure that it reflects the integration of methodological advancements in the identification, selection, assessment, and synthesis of studies. Several databases were comprehensively investigated, including Web of Science, ERIC, Scopus, and Google Scholar, covering publications from 2015 to 2025.

The search strategy used predefined keywords combined using Boolean operators as follows: ("mobile-assisted language learning," OR "MALL") AND ("English as a foreign language," OR "EFL") AND ("Saudi" OR "Saudi Arabia"). Only peer-reviewed journal articles were included. Conference proceedings and dissertations, and studies published outside this date range (2015-202) were excluded.

The screening process by the researcher involved reviewing titles and abstracts, followed by full-text assessment based on predefined inclusion and exclusion criteria. Studies were included if they focused on mobile-assisted language learning in Saudi EFL contexts and reported empirical findings related to language learning outcomes. Studies were eliminated if they were conducted outside Saudi Arabia, were non-empirical, or did not address English language learning or mobile technology use.

Because of the heterogeneity in study designs, methodologies, and outcomes, a narrative qualitative synthesis approach was adopted. The characteristics and key findings of the included studies were systematically summarized and organized into thematic categories, such as benefits and challenges of mobile-assisted language learning. This approach assisted the identification of recurring patterns to reveal main patterns and support future research.

Results

Overview of Included Studies

Saudi EFL research from 2015 to 2025 displayed a steady growth in mobile-assisted language learning. Most of the studies were done at higher education and preparatory-year programs. Most of the researchers were academics rather than classroom teachers. National reviews emphasize the effect of training and infrastructure on implementation results.

Language Skills Targeted

Vocabulary was the most examined skill. Many controlled studies indicated that participants who used mobile game-based tools performed significantly better on post-tests compared to those who were taught in a traditional way. Collaborative mobile practices also confirmed better vocabulary retention. Grammar was less frequently isolated; however, mobile interventions were correlated with positive achievement when integrated. Reading results were consistently positive when mobile technologies supported comprehension. Experimental data demonstrated significant improvements, enhanced learner autonomy, and prolonged reading outside classroom constraints. Speaking and writing skills received relatively less attention, yet studies indicate that mobile apps can assist speaking skills and confidence. Writing-focused interventions, on the other hand, usually focus on fluency, comfort, and peer collaboration rather than instant accuracy gains. There is still inadequate research on ESP, grammar, and advanced skills, yet early results are similar to vocabulary trends.

Mobile Tools and Applications

Saudi MALL studies mainly utilized three categories of tools: (1) messaging and social apps, WhatsApp in particular, to continue interaction and collaboration after class time; (2) game-based quiz platforms, such as Quizizz, which consistently proved strong vocabulary enhancements and favorable learner perceptions; and (3) specialized language apps (e.g., Duolingo) and mobile-compatible learning management systems (e.g., Blackboard).

Research Outcomes

In both experimental and quasi-experimental studies, MALL interventions largely equaled or exceeded conventional teaching in achievement for vocabulary, reading, and specific speaking outcomes. Effective outcomes were outstandingly consistent: participants indicated less anxiety, increased motivation, and enhanced engagement with the integration of mobile tools. Mobile-supported tasks also stimulated learner autonomy by allowing them to choose the content, timing, and place of practice. Collaborative designs were correlated with enhanced retention and peer support.

Research Designs and Samples

Most of the studies used short-term pre- and post-test designs with control groups. They also often combined quantitative assessments with surveys, interviews, or artifacts like portfolios. Samples were usually small and taken from individual institutions, with interventions ranging from weeks to one academic term. Although these designs are practical for classroom research, they constrain generalizability and long-term conclusions.

Common Limitations and Gaps

Authors regularly reported constraints associated with small sample numbers, short intervention periods, restricted longitudinal follow-up, and contextual difficulties, including infrastructural insufficiencies, technical problems, and inconsistent teacher training. Skill coverage is still not balanced, with vocabulary and reading receiving more attention than writing, grammar, listening, and ESP.

The Saudi MALL literature provides a rational pattern: effectively designed mobile interventions consistently improve vocabulary and reading skills, present promising achievements in speaking, and provide robust motivational and autonomy-related advantages. Nevertheless, future research should encourage large, multi-site studies, longitudinal designs, and underexamined skills, while explicitly considering implementation conditions. These improvements would make the research basis stronger and assist Saudi EFL education policy and practice in the classroom.

Discussion

1) What the body of evidence shows and what it does not

From 2015 to 2025, Saudi MALL research displays a clear pattern: mobile activities that are well-planned tend to boost aimed EFL outcomes, particularly in vocabulary and reading. They also consistently enhance motivation and support the learners to be more independent and collaborative. In controlled experiments involving foundation-year participants, gamified mobile quizzes frequently produced higher outcomes compared to traditional instruction. For instance, one study reported that the experimental group performed much better than the control group on post-tests. The participants also perceived game-based practice as an efficient and practicable way to learn vocabulary (Alhebshi & Gamlo, 2022). However, it is important to note that many of the studies discussed earlier use small, single institution samples which limits the evidence-based integration (Alhebshi & Gamlo,2022; Azi, 2023; Ahmed, 2015; Alqarni, 2024; Hazaea & Alzubi, 2018; Lee & Al Khateeb, 2021; Alharbi, 2024; Al-Durayhim, 2023; Ali & Bin-Hady, 2019; Alfuhaid, 2021; Almutairi & Alghammas, 2025; Aloufi & Alotaibi, 2025).

Reading outcomes indicate a comparable consistency when mobile tools are strongly integrated with comprehension processes. A randomized study involving 120 secondary-school students found that mobile-

assisted instruction led to statistically significant enhancements in reading comprehension compared to conventional approaches (Keezhatta & Omar, 2019). Qualitative evidence also shows significant changes in learner behavior outside of experimental settings: mobile access allowed students to overcome textbook and timetable limitations, allowing flexible reading and text sharing, while enhancing their responsibility for text selection, reading duration, and learning environment (Hazaea & Alzubi, 2018).

Speaking improvements become apparent when mobile tools enable regular, low-pressure production opportunities. A four-month intervention in secondary school used a language-learning application and proved significant enhancements in speaking skills, reduced speaking fear, and better learner attitudes (Alfuhaid, 2021). Initial collaborative MALL projects also confirm that the explicit use of mobile devices for joint vocabulary exercises enhances memory, with collaborative engagement serving as a reinforcing factor (Al-Ahdal & Alharbi, 2021).

Together, these results do not propose that mobile applications inherently outperform instruction. However, they show that mobile learning is successful when it is built into the lesson plans guided by clear objectives, direct feedback, and organized interaction. When mobile usage is unstructured or unguided, effects seem to diminish. The Saudi evidence base, although still modest, is now adequately consistent to shift the discussion from whether MALL can assist learning to how, for what skills, under what conditions, and for how long.

2) Understanding skill-level patterns

Vocabulary: Robust and replicable improvements occur when practice is distributed, interactive, and social. The prominence of vocabulary enhancements across Saudi studies is unsurprising. Game-based quiz platforms allow regular retrieval practice, immediate feedback, and motivational components like competition and progress tracking, which are known to support enduring lexical acquisition. In the best designs, these features were clearly linked to the course content and reused across sessions, which explains why mobile quiz groups outperform controls (Alhebshi & Gamlo, 2022). Collaborative implementations increase this result, as peer discourse and shared problem-solving strengthen encoding, a pattern that is mirrored in findings of enhanced vocabulary retention within collaborative MALL environments (Al-Ahdal & Alharbi, 2021).

Reading: Benefits appear when mobile devices support comprehension instead of causing distraction. Studies that incorporated mobile quizzes, segmented texts, and instant feedback regularly outperformed conventional paper-based methods (Keezhatta & Omar, 2019). Qualitative research emphasizes that comprehension improvements are supported not just by assessment tools but also by improved learner autonomy; students engage with a wider range of texts, choose them based on their interests, and exchange

the content flexibly (Hazaea & Alzubi, 2018). This conclusion implies that efficient mobile-assisted reading must combine teacher-directed core texts with learner-curated extensions.

Speaking and writing: Evolving but promising evidence. Speaking-focused research, although limited in quantity, reveals that mobile tools can enhance oral proficiency by extending the overall practice duration and reducing anxiety. App-based environments permit private rehearsal, repetition, and tracking progress, all of which enhance confidence and performance (Alfuhaid, 2021). Interventions focusing on writing through messaging platforms usually improve fluency and motivation to write more regularly than instant accuracy, emphasizing the demand for explicit feedback loops when accuracy is the instructional aim. This result is in line with other findings on WhatsApp use, which regularly show positive attitudes and less anxiety (Ali & Bin-Hady, 2019).

Grammar and ESP: The coverage of grammar and English for Specific Purposes (ESP) is inadequate, but their feasibility is clear. Grammar is frequently integrated with interventions focusing on vocabulary and, when assessed, displays positive trends, yet the general evidence base is still limited. ESP apps show their feasibility in the Saudi EFL context by employing scenario-based tasks and mobile glossaries; however, they are still inadequate. These results indicate strong potential for collaboratively built ESP mobile courses that prioritize spaced practice and contextualized application.

3) Tools in practice: WhatsApp for connectivity, games for gains, LMS for access

WhatsApp is the main social network for Saudi MALL. Research regularly shows that using it intentionally for small assignments, peer feedback, and conversation has positive influences on learning, motivation, and reducing anxiety (Ali & Bin-Hady, 2019).

Gamified quiz platforms received the most substantial achievement results, mostly for vocabulary, when aligned with curricular objectives and utilized regularly (Alhebshi & Gamlo, 2022).

Mobile LMS platforms like Blackboard perform an important organizational role; however, they are not a kind of teaching on their own. Evidence confirms that technical reliability structures learner views, emphasizing the need to integrate LMS access with interactive, feedback-oriented learning assignments (Aloufi & Alotaibi, 2025).

4) Results beyond test scores

Motivation is the most persistent non-cognitive benefit of MALL in Saudi contexts. Messaging-based interventions display medium to high motivational effects and less anxiety, reinforced by research rooted in self-determination theory, which shows enhancements in autonomous motivation (Alamer et al., 2023).

Autonomy advantages are tangible rather than abstract, mainly in reading, where the learners take control over resources, timing, and learning environments (Hazaea & Alzubi, 2018).

While collaboration is not regularly the main focus, studies that are clearly designed to enhance social interaction confirm better retention and involvement. This emphasizes that inserting collaborative structures into mobile workflows is useful (Al-Ahdal & Alharbi, 2021).

5) Methodological considerations

Two systemic limitations hinder generalizability. First, most of the studies have been conducted by academics instead of classroom teachers. National reviews have emphasized that training and infrastructure are two crucial barriers (Aljameel, 2022). Second, lots of interventions are short-term and small-scale, and the use of delayed post-tests is limited (Alfuhaid, 2021).

Methodological transparency has improved; however, utilizing PRISMA 2020 and structured appraisal tools like CASP would further reinforce confidence in future syntheses (Page et al., 2021).

6) Policy alignment and practical implications

Saudi Vision 2030 clearly highlights curriculum reform, teacher development, and digital infrastructure as central pillars for education advancement. MALL research aligns strongly with these priorities by providing scalable and flexible strategies to improve vocabulary, reading, and speaking outcomes. However, achieving meaningful evidence-based integration requires more than simply adopting mobile tools; it depends on effectively translating research findings into classroom practice. To optimize this alignment, mobile learning should be systematically built into the curriculum, reinforced by focused teacher training, and supported by reliable technological infrastructure. Teachers should design small-scale MALL interventions like WhatsApp for group writing or Quizizz for quick vocabulary boosts. By tracking what works in their classrooms; watching how students engage and observing their progress, teachers can refine their strategies accordingly. This "plan, act, observe, and reflect" cycle does not only improve the effectiveness of teaching but also empowers teachers to be active contributors to the unique environment of a Saudi classroom.

Moreover, structured collaboration between researchers and practitioners is obligatory. Universities and schools should partner directly to co-create mobile activities. Researchers can handle data and theory, while teachers ensure the activities work in a real-world setting. This teamwork ensures that great ideas are not just individual studies but permanent, practical tools in the classroom. In addition, professional learning communities focusing on MALL integration should be encouraged and supported. Educators can share their experiences, evaluate mobile tools, and exchange their best practices for integrating applications or learning management systems into their instruction. Regular, peer-led workshops can further support teachers in aligning mobile use with pedagogical goals instead of using technology in an ad hoc manner.

The Saudi MALL study now offers a useful framework: mobile tools can assist retrieval (vocabulary), scaffold understanding (reading), increase practice opportunities (speaking), and maintain connection

(WhatsApp). Mobile-assisted learning offers both linguistic and emotional advantages when assignments are carefully designed, feedback is timely, and collaboration is planned. The main challenge we face now is not adoption but making sure that every learner can benefit from the learning chances already present in their pocket by scaling efficient designs with sufficient support.

Conclusion

This systematic review synthesized ten years of mobile-assisted language learning in Saudi EFL education (2015-2025) in accordance with PRISMA 2020 principles. The evidence collected so far suggests that well-designed mobile interventions can significantly improve English language learning, specifically in vocabulary learning and reading comprehension. They can have consistent positive effects on feelings, such as enhancing motivation, lowering anxiety, and better learner autonomy. Speaking development displays promising achievements when mobile tools support frequent, low-stress practice, though writing, grammar, listening, and English for Specific Purposes remain relatively underexplored.

Throughout several studies, the value of MALL was not only due to mobile technologies but also to pedagogically designed integration, portrayed by well-defined objectives, prompt feedback, and avenues for interaction and cooperation. Messaging apps like WhatsApp were dominant social and motivational tools; game-based platforms provided the greatest achievements in vocabulary; and mobile learning management systems were mostly used to support access and organize rather than teach.

The review underlines critical limitations in the present evidence base, such as the small and single-site samples, short intervention periods, lack of longitudinal research, and inadequate studies led by teachers. To enhance generalizability and promote sustainable practice, these gaps should be addressed through several locations, longer duration, and in the classroom.

In line with the goals of Saudi Vision 2030, future research and policy efforts should concentrate on teacher training, infrastructure reliability, and designing mobile tasks that are based on the curriculum. Mobile-assisted language learning can enhance English language education in Saudi Arabia in a flexible and scalable way when these certain conditions are met.

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