

MALL Tools for L2 Listening: A Review of Applications and Learning Outcomes

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Abstract. This review aims to systematize the application of mobile-assisted language learning tools within the domain of listening comprehension, evaluate their pedagogical efficacy, and thereby clarify the current landscape and associated issues. Through defining the difference between core MALL tools and general digital platforms, this paper conducted the general analyses to current researches. The analysis revealed that current researched mainly focused on the intermediate-level English learners within higher education context. Also, although the effectiveness of enhancing the motivation of study and reducing anxiety are the same, its effect on the promotion of listening skills is complex depending on factors such as tool type, teaching integration and learners' self-discipline. At the same time, the study pointed out that the content quality of the general platform is uncontrollable, the research method cycle is short, and the measurement tool is single. Based on these, this article suggests that teaching practice should pay more attention to the role of teachers in resource curation and strategic guidance, and calls for future research to adopt more diverse design, so as to deepen the understanding.

1 Introduction

Listening is of great importance in second language acquisition, serving as the fundamental skill for a whole language acquisition, language internalization, and overall proficiency development. However, learners frequently encounter challenges such as rapid speech, unfamiliar accents, cultural references, and the absence of authentic context. With the widespread adoption of mobile technology, innovative solutions have emerged to address these difficulties. This article aims to introduce the application of mobile-assisted language learning tools of listening comprehension, and also evaluates their current learning outcomes and related issues.

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2 Definition and theoretical frameworks

2.1 Definition of MALL

MALL, the full name of which is mobile-assisted language learning, is a way of assisting and enriching language learning by using handheld mobile tools [1]. MALL has become a subject since in 1994 when it appeared for the first time. Unlike computer-assisted language learning, MALL highlights the importance of interaction and access in different contexts of use, encouraging a new approach for learners to use such personal, portable devices [2]. Due to the advantages, such as ownership, mobility and technological convergence, MALL has received a lot of research attention recently [2]. Particularly in using MALL in English as a Foreign Language (EFL) learning environments has brought about success and fruitful research outcomes. Generally, research using MALL asserts that it provides learning opportunities at different times and different places, which leads to involvement and positive motivation, and hence enhances learning outcomes.

2.2 Related theories

The Input Hypothesis is a crucial guideline in understanding how MALL enhances listening inputs. Krashen believes that the one condition required for language acquisition is the assertion of the centrality of language input in the acquisition of language [3]. Based on this theory, the language input needs to have plenty of materials in sufficient quantity. Therefore, Mobile-Assisted Language Learning would be able to follow this theory in the development of the application by focusing on the need for quality, quantity, variety, and accessibility while being engaging.

The Cognitive Load Theory provides a different theoretical perspective for the study of MALL. The theory argues that the working memory ability in the human brain is very restricted. Based on the CLT, the goal for design is the effort to minimize cognitive load and maximize learning. In the context of MALL listening learning, the above theory means that learning tools should make the best effort to optimize the cognitive load for the learners.

An ideal MALL listening tool needs to address the requirement to offer the learners 'comprehensible input' and also needs to adhere to the principles mentioned in the cognitive load theory. The cognitive load theory approach shall be utilized to scrutinize the efficacy of various types of MALL tools.

3. Application of MALL tool types in listening teaching

To ensure a precise review, this study classified MALL tools in listening into two groups based on their primary design purpose and core functionality.

3.1 Dedicated language learning tools

This type of MALL tool is mainly intended for language learning, and the design includes explicit teaching guidelines like the input hypothesis. It is essentially meant to be a "teaching tool". The classification considered is based on primary interactive modes.

3.1.1 Structured course & practice tools---Duolingo

These learning tools can be used for the design of systematic listening programs, structured exercises, and computerized feedback [4]. As a case study based on the representative

learning tool Duolingo, the design structure for learning is based on particular topics, and the type and design of the exercises include translation, multiple-choice word recognition, and spelling [4]. The use of level design in the tool enables language knowledge to be divided into smaller units to take care of each input being a bit higher than the level possessed by the learners. In the area of cognitive-load management, the tool limits the external cognitive load through instant positive feedback and a progress bar. Hazar, E. argues that through the integration of features, Duolingo does the best it can for language learning to be a fun and enjoyable process [5].

3.1.2 Adaptive content & player tools---Podcast

These MALL tools make use of a huge database of levelled audio materials. It integrates learning features such as speeding up or slowing down audio, looping an audio section from point A to point B, and interactive transcripts. For example, given a podcasting application with a 'learning mode,' podcasts help learners through their authenticity and relevance to intensive and extensive listening. More importantly, the authentic language presented through this medium helps reduce the distance between formal and informal language, making it persuasive enough to motivate students' interests to listen to English both inside and outside the classroom. Through selecting programs of their interests and levels, learners can actively develop their 'i+1' input context. In relation to cognitive load, learners can make use of speeding up or slowing down audio features with a view to enabling learners to control or handle cognitive loads.

3.1.3 Social interactive & gamified tools---Hello Talk

These types of MALL tools include listening practice within gaming scenarios in order to entice learners with increased levels of motivation for the processes of learning. There is, for instance, a voice message function within the Hello Talk APP. These properties of points, levels, and the 'dynamic' release function are the key to the development of successful linguistic communication into 'game progress'. In terms of listening input, this directly motivates users to actively seek understandable voice input to complete interactive tasks, get likes or improve language level. These boring listening exercises into social games will full of positive feedback, significantly improving the willingness and frequency of listening practice, which is the underlying driving force to ensure the continuous occurrence of "input".

3.2 General-purpose digital media platforms---YouTube

These MALL tools initially are designed for entertainment, social interaction, or information dissemination; however, nowadays its creatively repurposed by learners or teachers for language learning resources, such as YouTube, Netflix, TikTok [1]. Pratama et al. in their studies found that students hold the firm belief that YouTube can increase their language skills, particularly in listening skills [6]. Despite YouTube's non-educational design, it generates knowledge and also serves as channels for learners to authentically encounter the target language, thus constituting an integral part of MALL practice [6].

4. Review of empirical research findings

4.1 General characteristics of the research

As for predominant contexts, a review of the literature reveals that the majority of studies examining MALL in the context of listening comprehension have been conducted within higher education settings [7]. Moreover, among the primary subjects in most studies, intermediate-level English learners constitute the most common research participant [8]. Research focusing on beginner or advanced learners is not very common, while studies targeting EFL are increasing, but still represent a minority. For instance, Xu's research focused on intermediate-level undergraduate students majoring in non-English disciplines at Chinese universities [9].

4.2 Methodological approaches in the research

Concerning research methodology, this study adopts a mixed-methods research methodology, involving testing, questionnaires, and interviews [10]. Mixed-methods research is gaining acceptance, as it may facilitate the combination of outcomes obtained from both quantitative approaches (such as experiment designs involving pre- and post-testing, and questionnaire designs) and qualitative approaches (such as interviews and, in this case, analysis of learning journals) to provide a clear insight into the overall outcomes. Some research may include data collection instruments, including standardized or home-built listening comprehension tests, designed to determine skill outcomes, and motivational/attitudinal scales to determine affective aspects. This study utilizes standardized measurement tools, including Metacognitive Awareness of Listening Strategies, Learning Style Preference Questionnaire, and General Self-Efficacy Scale, given that the GSE Scale and MALQ have been utilized to determine learners' affective and strategic aspects [11].

4.3 Major findings from the research

4.3.1 Impact on listening proficiency

Most studies show significant effects, especially in the score of listening comprehension, vocabulary recall, and detail recall. A study done by Chen et al. in 2020 found that the mobile device has a significant positive impact on the process of listening [12]. Another study conducted by Karakaya & Bozkurt in 2022 showed that those listeners who practiced listening using the facilities of MALL performed better in understanding English speech than those who pursued learning in the conventional way [13]. Moreover, studies like Hamid emphasized the advantages and possible application of the concept of MALL in improving the listening comprehension ability and performance by utilizing interaction and proper strategies in learning [14].

4.3.2 Impact on affective and motivational factors

As for the effect on the learning motivation aspect, the findings clearly showed that the use of the MALL approach can positively increase learning motivation, learning interest, self-efficacy, and autonomous learning willingness while decreasing the level of listening anxiety. Nasri et al. showed that motivation in L2 learning significantly improved when the group used MALL, and the participants shaped positive attitudes toward L2 learning after receiving MALL-based instruction [15]. Dong et al. indicated that using MALL positively affected the Iranian EFL students' motivation, anxiety, and self-efficacy [16]. Also, the advantage of

being portable and accessible whenever needed is a factor that is important for today's highly mobile students.

4.3.3 Impact on learning behaviors and strategies

During mobile-assisted learning for listening, learners develop and utilize various specific learning strategies. Research indicates that the use of MALL tools significantly enhances learners' metacognitive strategy proficiency. Furthermore, MALL environments would affect how Chinese English learners adopt specific learning strategies and participants in the study most frequently used metacognitive strategies, leading to new learning approaches such as fragmented time management.

4.4 Challenges and limitations revealed by the research

4.4.1 Learner differences

MALL tools have considerable potential. However, their effectiveness is not universal. It depends on individual learner differences. Research findings indicate that outcomes are highly contingent upon learners' self-discipline, digital literacy, existing language proficiency, and tool selection strategies [17]. Furthermore, learners' perceptions, acceptance, and usage preferences towards these tools are various, influenced by complex factors such as their technological literacy, learning styles, and personal innovativeness. Hence, adapting to the diverse characteristics of learners represents one of the fundamental challenges facing MALL practice.

4.4.2 Tool and content deficiencies

Current research also reveals inherent limitations within the tools themselves. Firstly, at the practical level, the difficulty of content on universal platforms is uncontrollable and varies greatly in quality [12]. Such content can be regarded as "untamed input", unmanageable in terms of difficulty, quality, and cultural appropriateness, and furthermore, some tools feature poor interaction design, increasing operational burden [2]. Furthermore, there was a widespread failure to account for variations in learners' mobile devices and technological environments, and an inability to conduct in-depth tracking of the specific processes through which learning occurred [17].

5. Conclusion

5.1 Overall conclusion

Research has revealed that MALL has served as a key addition and powerful tool in teaching listening skills in a second language. Its most important contribution has remained improved accessibility, motivation, and autonomy of learning. However, this method has remained neither reliably useful in all cases nor has its effectiveness remained maximized through critical integration and adequate knowledge of limitations.

5.2 Implications for teaching and learning

For teachers, there is a fundamental change between becoming “resource facilitators” instead of “knowledge disseminators.” In light of this consideration regarding resource content across universal platforms, teachers must offer their learners pre-curated lists of resources in addition to relevant and well-defined activities. Learners must practice critical digital literacy by adhering to what follows: first, assessing resource quality; second, articulating relevant objectives depending on their level, or rather proficiency level; third, effectively controlling input complexity by employing playback speed modification and subtitles; and lastly, extracting systematic learning from episodic exposure based upon thoughtful and informed reflections.

5.3 Suggestions for future research

Based on the literature review conducted above with respect to the empirical studies that have been conducted, this paper concludes that the effect exhibited by MALL technology is significant and positive, influenced by the aspect of emotional participation, while the literature with respect to the long-term effects exhibited by the technology regarding listening micro-skills is deficient and irregular. The future literature review needs to be focused and broadened to provide deeper observations and studies regarding the effects, as well as the development or use of technology to measure the listening micro-skills without concentrating only on the general outcomes. Second, the literature review needs to be widened to encompass various settings and cultures. Finally, much focus and emphasis need to be placed upon successful personalization and the integration of the technology with the professional teacher.

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