Content Analysis of Doctoral Research on Mobile-Assisted Language Learning in Türkiye

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Article Info	ABSTRACT
	The advent of mobile technology in education has radically transformed language learning practices, exemplified by the emergence of mobile-assisted language learning. This study provides a content analysis of doctoral research on mobile-assisted language learning conducted in Türkiye, featuring the diverse instructional settings, participant groups, research paradigms, data collection instruments, thematic focuses, and key findings. It was revealed that MALL offers a range of benefits for foreign language learning, including improved vocabulary learning, listening and speaking skills. The analyses also showed that participants expressed favorable attitudes and perceptions regarding the use of MALL tools. Moreover, a number of dissertations highlighted the role of mobile-assisted professional development courses in equipping L2 practitioners with the necessary skills and support to integrate mobile technologies into their instructional practices effectively. In conclusion, by examining the doctoral dissertations, this study provides some insights into the current state of MALL research in Türkiye, identifying thematic and methodological trends.

Türkiye'de Mobil Destekli Dil Öğrenimi Üzerine Yapılan Doktora Çalışmalarının İçerik Analizi

Makale Bilgisi	ÖZET
	Mobil teknolojinin eğitimde görünür olması, dil öğrenme uygulamalarını ziyadesiyle dönüştürmektedir. Bu bağlamda, mobil destekli dil öğrenimi (MDDÖ) kavramı, etkili bir örnek olarak karşımıza çıkmaktadır. Bu çalışma, Türkiye'de mobil destekli dil öğrenimi üzerine yapılan doktora araştırmalarının içerik analizini sunmaktadır. Dolayısıyla, çalışmaların uygulandığı öğrenme ortamları, katılımcı grupları, benimsenen araştırma paradigmaları ve türleri, veri toplama araçları, tematik odaklar ve temel bulguları içermektedir. Sonuç olarak ise, MDDÖ'nün yabancı dil öğreniminde kelime, dinleme ve konuşma becerilerinin gelişimi gibi birçok fayda sağladığı görülmüştür. Analizler ayrıca çalışmalarda yer alan katılımcıların MDDÖ araçlarının kullanımı konusunda olumlu tutumlar ve inançlar sergilediklerini göstermiştir. Bunun yanı sıra, bazı tezler mobil destekli mesleki gelişim ve mobil öğrenme/öğretim odaklı mesleki gelişim içeriklerinin, yabancı dil öğretmenlerini mobil teknolojileri etkili bir şekilde öğretim uygulamalarına entegre etmeleri için gerekli becerilerle donatmadaki rolünü vurgulamıştır. Sonuç olarak, incelenen doktora tezleri kapsamında, bu çalışma Türkiye'deki MDDÖ araştırmalarının mevcut durumu hakkında bazı içgörüler sunmakta, tematik ve metodolojik eğilimleri ortaya çıkarmaktadır.

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INTRODUCTION

Mobile technology has revolutionized education, bringing new dimensions to learning experiences. An important development in this area is the use of mobile technologies for additional language (L2) learning, a concept known as 'Mobile-Assisted Language Learning (MALL)'. MALL, defined as the "use of personal, portable devices that enable new ways of learning emphasizing continuity or spontaneity of access and interaction across different contexts of use" (Kukulska-Hulme & Shield, 2008, p. 273), leverages the ubiquity and capabilities of mobile devices such as smartphones and tablets to facilitate L2 learning, making it more accessible, personalized, and contextually relevant (de Oliveira, 2015; Sharples, 2002). MALL has emerged as a remarkable development from the earlier Computer-Assisted Language Learning (CALL) and embodies the shift toward more flexible and integrated learning environments. CALL utilizes computer technologies to facilitate L2 learning and teaching, providing opportunities for interaction and autonomous learning (Chapelle, 2001). However, the limitations of CALL, which spotlighted the need for greater practicality, ergonomics, and mobility, led to the development of more portable and practical solutions. Consequently, the advent of mobile devices in the early 2000s, offering unparallelled flexibility and functionality, has positioned them as ideal tools for L2 learning. As Miangah and Nezarat (2012) noted, the widespread availability of affordable and advanced mobile devices has the strong potential to transform the e-learning process.

MALL offers several advantages that make it a compelling tool for L2 learning. One of the primary merits is its personalized, expansive, and omnipresent nature (Sharples, 2002). Mobile devices allow learners to manage their learning without the dominance of any authority, enabling self-directed and autonomous learning. Since mobile devices are widely used and accessible, they democratize education by reaching almost every segment of society. Learners can access information anytime and anywhere, breaking the constraints of traditional classroom settings (Klopfer et al., 2012). The portability and accessibility of mobile devices boost the flexibility of learning (Al-Kadi, 2018). Learners can engage in educational activities at their own pace and convenience, making learning a more integrated part of their daily routines (Cheung & Slavin, 2013). This flexibility is particularly beneficial in the case of L2 learning, where consistent practice, interaction, and exposure to the target language are crucial to L2 proficiency. Moreover, the incorporation of mobile technologies in L2 learning has introduced new tools for communication and collaboration, while also establishing online environments for collective learning and resource sharing (Kukulska-Hulme, 2010).

Research on MALL

Research into MALL has demonstrated various aspects of its application and effectiveness across various L2 learning skills. To begin with, Azar and Nasiri (2014) explored the impact of MALL on listening comprehension among Iranian EFL learners, revealing profound gains and positive attitudes toward MALL when using cellphone based audiobooks compared to traditional methods. Similarly, Kim (2018) found that Korean college students using diverse mobile applications increased their TOEFL listening comprehension and experienced reduced anxiety. In the sphere of vocabulary learning, Ali et al. (2020) demonstrated that young ESL learners in Pakistan considerably improved their vocabulary skills using MALL in comparison to conventional teaching methods. Additionally, Baleghizadeh and Oladrostam (2010) showed that pre-intermediate Iranian EFL students who recorded and analyzed their spoken mistakes using mobile phones showed enhanced grammatical accuracy. Khubyari and Narafshan (2016) provided further evidence of MALL's utility, marking a notable progress in reading comprehension among Iranian EFL learners who utilized mobile phones for reading activities. In terms of both the findings and language skills covered, these findings align with Burston's (2015) meta-analysis, which revealed consistently positive results for MALL applications across the majority of the studies, particularly in advancing reading, listening, and speaking skills.

Additional evidence supporting these results is provided by Li's meta-analyses. In a recent study, Li (2023) conducted a meta-analysis of 20 experimental studies with 1,218 participants, revealing that MALL significantly developed EFL learners' listening skills with a moderate-to-large effect size. This study also found that educational levels significantly moderated the effectiveness, with tertiary education students benefiting more than primary and secondary students. Another meta-analysis by Li (2022), focusing on improvements in reading comprehension, revealed a significantly large overall effect size, stressing that the use of MALL applications for EFL/ESL reading comprehension was significantly more effective than traditional methods, with moderating effects from intervention settings and durations. Concerning the gains in speaking development, the most recent meta-analysis by Li (2024) confirmed the overall effectiveness of MALL in developing speaking skills, with a large overall effect size derived from 18 studies involving 932 participants. Moderating factors like instructional approaches and intervention durations were also identified as influential variables. Collectively, these studies underscore the transformative capacity of MALL in promoting various language skills and sub-skills, including listening, speaking, vocabulary, grammar, and reading comprehension, across different learner populations and instructional settings.

The Current Study

MALL represents a notable shift in L2 learning, utilizing mobile devices to facilitate and enrich the learning process. It goes without saying that the integration of technology into educational practices has been steadily increasing across the world. As in other developing countries, Türkiye, with its growing emphasis on integrating technology into education, provides a fertile ground for examining the impact and trends of MALL research. The increasing integration of mobile technologies into L2 learning has generated a substantial body of research aimed at understanding their influence and potential. Even with the widespread use of MALL, comprehensive research investigating the specific contributions of doctoral studies in the Turkish context is lacking. Doctoral dissertations, being rigorous and in-depth studies, often set the foundation for future research directions and practical applications. Therefore, a systematic analysis of these dissertations has the promise to shed important light on the state of MALL research in Türkiye, identifying prevailing trends, methodological approaches, and thematic foci. Ultimately, the findings of this study might assist in elevating L2 learning outcomes by informing the design and implementation of MALL initiatives that are grounded in rigorous academic research. This study is motivated by these voids and prospects, offering a detailed content analysis of doctoral research on MALL in Türkiye to showcase its development and contributions to L2 outcomes, and suggest future research directions. More specifically, in this study, doctoral studies on MALL are investigated in terms of their thematic foci, research components (context and participant specifics), methodological and analytical elements (research design, data collection, data analysis methods and tools), and findings.

METHOD

This study employs a document content analysis approach (Berntsen et al., 2015) to systematically investigate doctoral dissertations on MALL conducted in Türkiye. Content analysis allows for both quantitative and qualitative examination of text data, making it suitable for identifying trends, methodological approaches, and thematic foci within the dissertations. This methodological approach facilitates an in-depth understanding of the research landscape and the contributions made by these doctoral studies. In the quantitative and qualitative methods divide in social research, content analysis serves as a hybrid technique (Bauer, 2003), used to generate objective conclusions regarding a specific topic of interest (Kondracki et al., 2002). Content analysis draws out essential information from the chosen literature, such as the methodologies employed, the time frame of the data, data sources, and the primary results reported in the articles (Ahmad et al., 2020).

Literature Search and Retrieval

To obtain PhD dissertations focusing on MALL research conducted in Türkiye, a search was performed on Higher Education Council's thesis database by accessing tez.yok.gov.tr. The search was conducted using the "advanced search" option. The search terms "MALL" OR "mobile-assisted" were entered into the search field, limited to doctoral dissertations only. The ALL section, including title, abstract, and index, was selected without any time restrictions. The 76 results that appeared were manually reviewed for their subject areas. Ultimately, 13 dissertations with a focus on the learning and teaching of an L2 through mobile assistance were selected for detailed examination. The distribution of dissertations across years reveals a growing trend, starting with research in 2012 and 2014, peaking in 2018, and continuing with sustained interest through 2024. Table 1 lists the dissertations included in this study.

Table 1
Dissertations Reviewed

ID, Author (Year)	Dissertation Title
1. Gülcü (2015)	Mobile-assisted Turkish Vocabulary Teaching as Foreign Language
2. Zeybek (2020)	Multimodal Mobile-assisted Language Learning Classroom Applications: A Study in Pre-service Teacher Education
3. Başoğlu (2022)	A Mobile Teacher Professional Development Course on Digital Game-enhanced Language Learning
4. Özer (2017)	The Effect of Mobile-assissted Language Learning Environment on EFL Students' Academic Achievement, Acceptance of Mobile Learning Devices and Cognitive Load
5. Aslan (2023)	The Impact of Blended Mobile Learning on EFL Students' Vocabulary Development
6. Gürkan (2018)	The Effects of Hypermedia Annotation Types and Learning Styles on Mobile Assisted Vocabulary Learning, Recall and Retention
7. Okumuş-Dağdeler (2018)	The Role of Mobile-assisted Language Learning (MALL) in Vocabulary Knowledge, Learner Autonomy and Motivation of Prospective English Language Teachers
8. Zengin (2018)	The Effects of an Online Course Designed on Mobile Technologies on the Use of ICT Skills, Attitudes and Self-efficacy of EFL Instructors
9. Berk (2019)	The Effect of Podcasts on Listening Comprehension and Listening Anxiety in Teaching Turkish as a Foreign Language
10. Koç (2024)	The Development of Listening and Speaking Skills in EFL Via an Artificially Intelligent Chatbot Application: A Quasi-Experimental Design Study
11. Tekin (2023)	The Effect of Computer and Mobile-assisted Feedback on Students' Expression Skills in Teaching Turkish as a Foreign Language
12. Ağca (2012)	The Effect of Mobile Hypermedia Supported Printed Materials in Foreign Language Learning on Vocabulary Learning and Motivation
13. Çakmak (2014)	Exploring the Role of Multimedia Glosses and Strategy Use in Second Language Listening Comprehension and Incidental Vocabulary Learning in a Mobile Environment

Coding

The content of the selected dissertations was analyzed using a predefined coding scheme designed to capture key aspects of the research. The coding scheme included the following categories: year of publication, orientation (foreign language teacher education/foreign language teaching), purpose/thematic focus, research paradigm/type, data collection tools, research contexts and participants, data analysis methods, language of interest, and major findings. The coded data were subjected to both quantitative and qualitative analysis. Quantitative analysis involved frequencies to identify common patterns and trends. Qualitative analysis was conducted thematically, centering on the detailed revelations of the research foci, methodologies, and key findings of the dissertations.

FINDINGS AND DISCUSSION

This section presents the interpretation and discussion of the doctoral research on MALL conducted in Türkiye. Specifically, it covers several critical aspects of these PhD studies, including the research contexts and participants, research paradigms, data collection instruments and analysis patterns, thematic focus, and primary findings.

Research Contexts and Participants

The content analysis of the doctoral dissertations on MALL conducted in Türkiye presents varied research settings and participant groups involved in these studies. The studies were conducted in a variety of educational settings, showcasing the applicability of MALL in advancing L2 learning and teaching across different learner demographics. The research settings included schools of foreign languages (n=4), education faculties (n=4), language centers (n=2), general university settings (n=2), and a high school. As such, ELT student teachers were represented in four PhD studies, students of L2 Turkish in three PhD studies, preparatory school English lecturers in two PhD studies, preparatory school EFL students in two PhD studies, and with one PhD study each on university-level and high school EFL learners.

Three of the dissertations focused on MALL from the specific perspective of L2 practitioners, incorporating an instructional dimension. This demonstrates the strength of MALL in reforming not only L2 learning but also L2 teaching practices, making them more dynamic and responsive to the digital age. Also, three dissertations presented MALL applications as an intervention for students of L2 Turkish, underscoring an academic interest in leveraging mobile technology to extend the learning experience for this specific group. However, the dissertations predominantly focused on higher education institutions and preparatory schools. This distribution demonstrates a notable gap in PhD research conducted within primary and secondary schools, apart from the single high school study. Expanding research to include a broader range of educational levels could furnish more meaningful explanations for MALL's effectiveness across different age groups and learning stages. Equally importantly, while L2 teachers, student teachers, and learners of L2 English and L2 Turkish were well-represented, there is no obvious focus on other significant groups such as adult learners, students with special needs, and underrepresented groups (Naveed et al., 2023).

Research Paradigms

Ten of the dissertations adopted a mixed-methods design, while three utilized a quantitative approach, and none used a qualitative method. An experimental dimension surfaced somehow in most of the studies, investigating the effectiveness of several MALL applications. Experimental designs yield robust evidence that can be used to make informed recommendations for L2 practitioners, learners, and policymakers regarding the implementation and optimization of MALL resources, leading to their wider adoption in instructional settings. In addition, considering their depictions of changes in patterns

(Dörnyei, 2007), these experimental dissertations also feature a longitudinal component. The prevalence of mixed-methods experimental dissertations aligns with Ross and Morrison's (2013) recommendation to integrate intervention research with other research methodologies and employ nontraditional, supplementary methods. This portrayal in the present study is also consistent with Ross and Morrison's observation of a consistent trend in the use of experimental methods in educational technology research.

Data Collection Instruments and Analysis Patterns

The analyses of the content of dissertations revealed a variety of data collection tools and data analysis methods employed in the MALL PhD research. Given the extensive use of experimental methods in the dissertations, the data collection instruments, and analysis procedures were accordingly reflective of this approach. In this respect, pre-tests and post-tests, along with achievement and knowledge tests (e.g., vocabulary, collocation, proficiency tests), were predominantly employed, demonstrating the focus on empirical evidence to evaluate MALL's effectiveness. Additionally, quantitative surveys and scales (e.g., Mobile Learning Tools Acceptance Scale, Mobile Learning Perception Scale, Mobile Learning Motivation Scale, etc.) were widely used. These reflect a systematic effort to capture learners' attitudes and perceptions toward MALL, stimulating a comprehensive understanding of its influence on learner motivation and acceptance. Regarding the data collection instruments that represented the qualitative component of mixed-methods designs, semi-structured and standardized open-ended interviews and forms tailored to specific applications were largely utilized. This was complemented by the use of reflective diaries and course/training evaluation forms. The integration of qualitative tools, particularly through interviews and reflective diaries, provides rich, contextual understandings that complement the quantitative data.

In analyzing quantitative data, both descriptive and inferential statistics were employed. The descriptive analysis included frequencies, percentages, and mean scores whereas the inferential analysis utilized various statistical procedures to compare groups within experimental designs. These statistical tests, including t-tests, Mann-Whitney U, Kruskal-Wallis, Wilcoxon signed-rank, chi-square tests, MANOVA, ANOVA, and ANCOVA, were used to determine statistical significance and infer the generalizability of the findings. Additionally, post hoc tests and correlation analyses were conducted. While these solutions are appropriate and necessary for experimental designs, considering their longitudinal aspect, analyses such as longitudinal structural equation modeling, cross-lagged analyses, and growth curve models could also have been used, to be representative of the paradigmatic shift known as the "methodological turn" (Byrnes, 2013). With respect to the analysis of qualitative data in the dissertations, content analysis was the primary method, along with the use of thematic analysis, constant comparison method, grounded theory, pattern analysis, and discourse analysis.

Thematic Focus

Content analysis of the stated objectives and purpose statements identified the research themes shown in Table 2, reflecting the primary research interests and objectives. The analyses underscore the innovative capabilities of mobile technologies in L2 learning and teaching. First and foremost, the consistent emphasis in PhD research on the effectiveness of MALL tools suggests their potential in expanding L2 outcomes across different skills. This emphasis parallels the broader literature oriented to investigating the efficacy of MALL applications in various contexts and among diverse groups (Hasan & Islam, 2020; Khan et al., 2019; Parsa & Anjomshoa, 2022). Secondly, understanding student perceptions and attitudes toward MALL is essential for its successful implementation and sustainability. Consequently, participants' experiences and reflections on the MALL tools employed were frequently explored, as also demonstrated by numerous studies (Al Mukhallafi, 2019; Tran, 2020; Viberg & Grönlund, 2013). Additionally, the focus in the MALL PhD research on L2 teachers' professional

development for and through MALL is an indicator of the intention to hone their pedagogical skills and practices with modern approaches, while also polishing their digital literacies. These endeavors are relatively cost-effective, providing effective professional development opportunities and instructional support (Hafour, 2022; Nazari & Xodabande, 2022), without the need for extensive physical resources or travel. Finally, the investigation into MALL's cognitive and affective influences, such as cognitive load, anxiety, and motivation, delivers key perspectives on developing supportive and effective learning environments. Managing cognitive load and reducing anxiety, for example, are critical for ensuring that MALL tools enhance rather than hinder the learning process.

Table 2
Thematic Foci and Specific Objectives

Theme	Description	Focus
Effectiveness of MALL tools	Evaluating the impact of MALL tools on L2 learning outcomes.	**Vocabulary learning:** Multiple dissertations assessed the effectiveness of mobile tools in learning L2 vocabulary through researcher-generated interfaces and environments (Ağca, 2012; Gülcü, 2015; Gürkan, 2018; Okumuş-Dağdeler, 2018) and blended MALL (Aslan, 2023).
		Listening and speaking: Some of the dissertations focused on developing listening and speaking skills through mobile technologies, including the use of podcasts (Berk, 2019), AI chatbots (Koç, 2024), and WhatsApp (Tekin, 2023). A MALL application was also developed to deliver listening content (Çakmak, 2014).
		Overall L2 proficiency: The impact of researcher-generated MALL environment on general L2 proficiency was investigated (Özer, 2017).
Students' perceptions and attitudes	Understanding attitudes toward and experiences with MALL.	A number of dissertations explored student perceptions and motivation toward researcher-generated MALL tools and environments (Okumuş-Dağdeler, 2018; Zeybek, 2020).
Professional development for practitioners	Enhancing teacher training and professional development through MALL.	Several dissertations focused on developing and evaluating mobile-assisted professional development tools and courses (Başoğlu, 2022; Zeybek, 2020), and online mobile technologies courses (Zengin, 2018) for L2 practitioners.
Affective and cognitive impacts	Examining the cognitive load and affective outcomes of MALL.	**Anxiety and motivation:** An array of dissertations examined how MALL tools affect learners' anxiety (Berk, 2019) and motivation (Ağca, 2012).
		Cognitive load: The effect of MALL environment on learners' cognitive load was explored (Özer, 2017).

Primary Findings

The analysis conducted on the findings derived from the MALL PhD research reaffirms the revolutionary capacity of MALL applications in promoting various aspects of L2 learning and instruction. The consistent findings across multiple studies distinguish the major benefits of these tools in improving vocabulary, listening, and speaking skills, as well as overall L2 proficiency. The interactive and stimulating nature of mobile learning tools, combined with their flexibility and accessibility, makes

them highly effective in modern instructional settings (Kerimbayev et al., 2023). Student satisfaction and motivation are critical factors in L2 achievement, as extensively demonstrated in the literature (Anjomshoa & Sadighi, 2015; Lamb, 2017; Li & Ni, 2024; Wu, 2022). The high levels of satisfaction and motivation reported by the participants using MALL tools underscore the importance of creating engaging learning environments (Klimova, 2019). The ability to learn at one's own pace and convenience, coupled with the dynamic features of mobile tools, elevates the pleasure and effectiveness derived from learning. This shift from traditional classroom settings to personalized, continuous learning experiences is a substantial advancement in L2 learning. L2 practitioners' professional development gains are another crucial aspect addressed by the findings in PhD research. Mobile-assisted professional development courses offer valuable resources and continuous support, enabling teachers to integrate mobile technologies into their teaching practices effectively (Criollo-C et al., 2021; UNESCO, 2012). However, the challenges faced in implementing these courses, such as technical issues and the need for better integration strategies, must be handled to maximize their impact. Providing technical training, developing user-friendly interfaces, and ensuring continuous access to resources are essential steps in overcoming these challenges.

A more specific viewpoint toward the findings provides additional interpretations. For instance, the reduction of listening anxiety through mobile tools, particularly podcasts, is a notable finding. Reducing anxiety betters students' confidence and performance, particularly in listening comprehension tasks (Liu & Xiangming, 2019; Zhang, 2019). This indicates that mobile tools can create a more conducive learning environment by addressing affective factors that affect L2 learning (Ali, 2022; Dong et al., 2022; Hwang et al., 2024; Putri & Degeng, 2024). Cognitive load management, another point of interest in one of the dissertations, is also a critical consideration in the design of mobile learning environments. While MALL tools are instrumental in fostering academic achievement, the risk of cognitive overload remains a concern (Bahari, 2023). Balancing cognitive demands to prevent overload is essential for maintaining effective learning. Computer and mobile-assisted feedback, as revealed in another dissertation, provides timely and personalized feedback, helping students augment their writing and speaking skills.

As a conclusion, the integration of mobile technologies in L2 learning represents a major advancement in the field. The value of MALL applications in optimizing various language skills, coupled with high levels of student satisfaction and motivation, feature their game-changing role. Resolving the challenges specified by the participants will further deepen the effectiveness of these tools. Continued research and development in the field of L2 learning is essential to fully leverage the benefits of MALL.

CONCLUSION AND LIMITATIONS

In conclusion, the exploration of doctoral research on MALL in Türkiye unveils a promising shift toward more dynamic and contextually rich L2 settings. This body of work highlights the effectiveness of MALL in bolstering L2 skills such as vocabulary, listening, and speaking through the pervasive use of mobile devices. The integration of these technologies allows for seamless, on-the-go learning experiences that break traditional classroom constraints, promoting self-directed and continuous L2 engagement. The findings also reflect a high degree of learner satisfaction and motivation, illustrating MALL's capacity to make L2 learning trajectory more engaging and accessible. However, the research also points out a number of implementation challenges. Addressing these hurdles through enhanced technical support and streamlined interfaces likely facilitates the broader adoption of MALL.

This study, naturally, has several limitations that need to be acknowledged. The analyses exclusively included doctoral dissertations. Including master's theses and journal articles could

contribute to a further understanding of the applications, merits, and constraints of MALL within the Turkish context. In addition, the search for data retrieval was conducted using specific terms such as "MALL" and "mobile-assisted". Dissertations that did not explicitly use these terms in their title, abstract, or index but still focused on MALL, if any, were not included in the study. This may have resulted in the exclusion of relevant research.

Ethics Committee Approval

This study did not use human or animal subjects that require ethics committee approval. The research was conducted on publicly available data sets, literature reviews or theoretical analyses. In accordance with ethical rules, academic integrity and scientific ethics were fully complied with at every stage of the research process. Therefore, ethics committee approval was not required.

Author Contributions

Research Design (CRediT 1) Yusuf DEMİR (%100)

Data Collection (CRediT 2) Yusuf DEMİR (%100)

Research - Data Analysis - Validation (CRediT 3-4-6-11) Yusuf DEMİR (%100)

Writing the Article (CRediT 12-13) Yusuf DEMİR (%100)

Revision and Improvement of the Text (CRediT 14) Yusuf DEMİR (%100)

Conflict of Interest

No conflict of interest.

Sustainable Development Goals (SDG)

Sustainable Development Goals: 4 Quality Education

Item 4.7. *"By 2030, ensure that all students acquire the knowledge and skills needed to advance sustainable development through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, world citizenship and appreciation of cultural diversity and the contribution of culture to sustainable development"*. Article 4.7. is supported in this study. This is because this study aims to examine the practices in this field in Turkey through the analysis of doctoral studies on mobile-assisted language learning.

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