

Enhancing Persian Language Proficiency Using Technology

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ABSTRACT

The integration of digital tools in language education has revolutionized the way of learning new languages, playing a unique role in increasing student engagement and retention. With technology, learners can easily connect with native speakers and other learners around the world through language exchange platforms, social media and video calls. Many language learning apps and platforms provide instant feedback on exercises and quizzes, helping learners to quickly identify and correct mistakes. This real-time practice is invaluable for improving speaking and listening skills. This article discusses various digital tools, especially language apps, online dictionaries, and multimedia systems, and their diverse uses in enhancing Persian language proficiency, particularly for foreign students. It will review how students can gain appropriate experiences with the learning environment using these technologies. Additionally, it will address the challenges and limitations related to technology-assisted language learning. Through a comprehensive review of practical research on technology, this article will provide insights into best practices for integrating technology into Persian language education. When used effectively, digital tools can significantly improve language learning outcomes, making the learning process more engaging and efficient for students.

1. Introduction

In recent decades, the integration of technology into language education has transformed traditional pedagogical methods, offering learners more interactive, autonomous, and personalized experiences. As digital tools increasingly shape educational environments, their role in language acquisition has become particularly significant. Numerous studies highlight the effectiveness of technology in supporting language learners, especially in enhancing motivation, improving access to resources, and facilitating real-time communication (Warschauer & Kern, 2000: 23). However, while research on technology-assisted language learning is extensive for global languages such as English, Spanish, or Mandarin, relatively limited attention has been given to the teaching and learning of Persian (Farsi), a language of huge cultural and literary significance. Persian, spoken in Iran, Afghanistan, Tajikistan, and among diaspora communities, is a language rich in history, poetry, and literary tradition. Its unique grammatical structures, idiomatic expressions, and modified Arabic script present both aesthetic value and pedagogical challenges. Traditional Persian instruction often relies on textbook-based learning, grammar-focused lectures, and teacher-centred classrooms. Such approaches may limit opportunities for interactive and contextualized language practice (Rahimi, 2008: 11). In contrast the use of educational technologies can offer multimedia input, facilitate learner autonomy, and create immersive environments conducive to skill development in reading, writing, listening, and speaking. Tools such as mobile applications (e.g., Monica, Memrise), online learning platforms, digital flashcards, virtual reality, and social networking apps like Telegram, have increasingly been employed by Persian language instructors and learners worldwide to enrich the learning experience. The rise of Computer-Assisted Language Learning (CALL) and Mobile-Assisted Language Learning (MALL) has further enabled learners to engage with authentic Persian texts, practice pronunciation using speech recognition, and communicate in real-time with native speakers (Kukulska-Hulme & Shield, 2008: 272).

This study aims to investigate the role of technology in enhancing Persian language proficiency by examining the tools in use, their impact on learning outcomes, and the experiences of learners and instructors. Specifically, it seeks to address the following research questions:

- a. What types of technologies are currently used to support Persian language learning?
- b. How do these technologies affect learners' proficiency across the four core skills?
- c. What are the challenges, limitations, and best practices associated with integrating technology into Persian language instruction?

By exploring these questions, the paper hopes to contribute to a more comprehensive understanding of how modern digital innovations can support the teaching and learning of Persian, ultimately providing recommendations for educators, curriculum designers, and language policy makers.

2. Literature Review

2.1 Theoretical Frameworks in Technology-Assisted Language Learning

The integration of technology into language instruction is grounded in several well-established theories of second language acquisition (SLA). One of the most influential is the Communicative Language Teaching (CLT) approach, which emphasizes interaction and meaningful communication over rote memorization of grammatical rules (Savignon, 2002). Digital tools align well with CLT by enabling interactive and authentic language use, especially through multimedia input and learner-generated output. Another key framework is Computer-Assisted Language Learning (CALL), which refers to the use of computers and software to facilitate language learning. CALL has evolved from behaviorist-based drill exercises to constructivist, task-based learning environments (Chapelle, 2001: 95). In recent years, Mobile-Assisted Language Learning (MALL) has emerged as a subset of CALL, promoting language learning through mobile devices, allowing for greater flexibility, accessibility, and context-sensitive learning (Kukulska-Hulme & Shield, 2008: 272).

2.2 Global Trends in Technology Use in Language Education

Studies across diverse linguistic contexts have confirmed the efficacy of technological tools in enhancing various dimensions of language proficiency. For instance, multimedia applications improve listening and speaking skills by simulating real-life conversations and exposing learners to native pronunciation (Stockwell, 2010: 99). Synchronous and asynchronous communication platforms such as Zoom, Moodle, and WhatsApp enable learners to practice writing and comprehension in collaborative environments (Blake, 2013). Gamified applications such as Duolingo, Quizlet, and Memrise support vocabulary retention and learner motivation through interactive formats (Munday, 2016: 84). Speech recognition software and AI-powered chatbots like ChatGPT have also been increasingly used to support pronunciation, grammar correction, and writing development in personalized learning contexts (Godwin-Jones, 2018: 7). These findings have broad implications, demonstrating that educational technologies not only complement traditional instruction but also reshape how learners engage with language outside the classroom.

2.3 Technology in Persian Language Learning: A Growing Field

Despite global advancements, scholarly research on technology-based instruction for Persian remains limited. Most existing work focuses on curriculum design or the creation of static digital materials rather than interactive or AI-supported tools. Rahimi has discussed about computer-based assessment for learning (CBAL) in elementary and secondary education to evaluate Persian reading comprehension, one of the early efforts in this field (Rahimi, 2008: 13). Similarly, Yousefi and Mohammadi examined the use of multimedia in teaching Persian grammar, finding positive effects on learner retention and engagement (Yousefi & Mohammadi, 2017: 141). In a study on mobile learning, Pishghadam and Khajavy emphasized the motivational benefits of mobile applications in language learning among Iranian students, suggesting that similar tools could be adapted for teaching Persian as a foreign language (Pishghadam and Khajavy, 2014: 222). Additionally, some institutions have begun offering online Persian courses using LMS

platforms like Moodle and Google Classroom, though these implementations remain largely experimental and understudied.

There is also a notable gap in research on the use of newer technologies such as artificial intelligence, voice-interactive platforms, and immersive VR experiences in Persian language instruction. The absence of Persian-specific modules in popular global apps (like Duolingo or Babbel) further limits accessibility for learners, although community-built content has partially addressed this shortfall.

2.4 Identified Gaps and Justification for Study

While the effectiveness of technology in language acquisition is well-documented globally, its application to Persian language instruction, especially for non-native students remains underdeveloped. Few empirical studies assess the impact of digital tools on proficiency outcomes in Persian, and there is little guidance for educators on how to integrate such tools into their pedagogy. Moreover, the perspectives of learners and instructors remain largely unexplored in existing research. This study, therefore, aims to fill these gaps by providing a comprehensive analysis of technology-enhanced Persian language learning. By evaluating tools, learner experiences, and pedagogical outcomes, the study contributes to the growing discourse on digital innovation in less commonly taught languages (LCTLs), such as Persian.

3. Methodology

This study employs a qualitative research design to explore the role of technology in enhancing Persian language proficiency. The research focuses on classroom observations, teacher interviews, and content analysis of digital tools and learning platforms used in Persian language instruction. A qualitative approach was selected to capture in-depth perspectives of educators and to analyse the real-world application of technology in language learning environments.

3.1 Participants

The study involved Persian language instructors from various educational institutions from Bangladesh and Iran, who actively incorporate digital tools into their teaching. These educators had experience using a range of technologies, including mobile apps, online platforms, and multimedia resources.

3.2 Data Collection

3.2.1 Classroom Observations

Several online and hybrid Persian language classes were observed with permission from the instructors. Observations focused on how technology was used to support different language skills (reading, writing, listening, and speaking), the level of student interaction, and the integration of multimedia content. Field notes were taken to document teaching methods, tools used, and learner responses.

3.2.2 Content Review of Digital Tools

A selection of commonly used Persian language learning apps and platforms (such as Monica, Mondly, Memrise, Telegram groups, and YouTube channels) were reviewed to understand their features, usability, and pedagogical value. These tools were evaluated based on their ability to support vocabulary, grammar, pronunciation, and cultural immersion.

3.3 Data Analysis

All qualitative data—including observation notes, transcripts, and platform reviews—were analysed using thematic analysis. Emerging themes were identified, categorized, and interpreted to highlight patterns in how technology supports or challenges Persian language learning. Attention was given to contextual factors such as accessibility, learner autonomy, and instructional strategies.

3.4 Ethical Considerations

Informed consent was obtained from all participating instructors. Their identities were anonymized to ensure confidentiality, and data were used solely for academic purposes.

4. Types of Technologies Used in Persian Language Learning

The integration of digital technologies into Persian language instruction has introduced a range of tools and platforms that support different language skills and learner needs. This section categorizes and analyses the major types of technologies currently used to enhance Persian language proficiency.

4.1 Mobile Applications

Mobile apps have become a central part of language learning due to their accessibility, flexibility, and engaging interfaces. Several apps offer Persian language courses or components, including:

- **Talkpal:** Focuses on real-time conversation with native Persian speakers, using AI feedback for pronunciation and grammar. Offers a personalized, adaptive curriculum complete with cultural modules and gamification elements (points, badges) to keep motivation high. Strong for developing practical fluency across beginner to advanced levels. Talkpal offers a free Basic plan, which includes around 10 minutes of daily AI-chat practice, allowing you to engage in limited conversations, role-plays, debates, and photo-description or sentence modes across supported languages. To unlock full access with the Premium subscription—available monthly (\$14.99/month) or longer-term (\$6.25/month if billed every 24 months)—which removes time limits and grants unlimited conversation, advanced modes, personalized learning paths, ad-free experience, and offline use in some versions.
- **Mondly:** Mondly (launched 2014) is a language-learning app that works across web, iOS, android, supporting learning 41 languages, including Persian. It offers basic Persian vocabulary and sentence structures with speech recognition for pronunciation practice. It includes gamified exercises and real-time feedback. Short, engaging gamified lessons, and innovative AR/VR experiences and AI driven chatbots help practice in context and make learning fun and consistent. People can use this app for free; but the free version is very limited and doesn't include advanced tools. For students, Mondly offers a discounted Premium rate.
- **Kahoot!:** Kahoot! is a Norwegian-origin, game-based learning platform launched in 2013 that lets educators, trainers, and anyone else create and play interactive quizzes in minutes using images, videos, and a variety of question types like polls or word clouds. The mobile and web apps operate on a freemium model—Basic plan is free, allowing users to join public kahoots, play self-paced challenges or flashcards, and browse millions of public quizzes. However, creating and hosting quizzes with more advanced features often requires at least a paid tier. Paid plans (Kahoot!+ Bronze, Silver, Gold, and 360 for business/education) add capabilities like large-group support (up to 2,000 participants), advanced question types (e.g., puzzles, open-ended), branding, collaboration tools, detailed analytics, and integration with platforms like Microsoft Teams.
- **Memrise:** Memrise is a British language-learning platform (launched 2010) that combines spaced-repetition flashcards, videos of native speakers in real life contexts, and an AI conversational tutor called MemBot to help learners memorize vocabulary, improve listening and speak confidently. Its free plan grants access to official courses in over 20 languages- including Persian- basic vocabulary and listening exercises, a limited number of daily MemBot chats, and native-speaker videos—sufficient for beginners up to around A2 level. Some user-generated Persian content is available, though limited. Memrise Pro (monthly or annual subscription, or one-time lifetime fee) unlocks all lessons, unlimited chat with MemBot, pronunciation drills, difficult-word review, offline mode, detailed learning statistics, and an ad-free experience; typical pricing ranges from \$8–9/month, \$30–60/year (often discounted), or \$100–120 lifetime membership.
- **Learn Persian App:** The Learn Persian (Farsi) app—often titled “Learn Persian Farsi” on mobile platforms—is a beginner-focused language tool offering around 90 to 140 bite-sized lessons that cover core vocabulary and phrases with native speaker audio recordings and quizzes. Learners can access a free tier, though many basics like greetings

may be locked behind a low-cost premium upgrade (commonly around \$4.99). The app is praised for its clean, user-friendly interface, offline access, ability to create favorite phrase lists, and vocabulary reinforcement via spaced repetition, making it effective for memorization and pronunciation exposure. Its limitations include repetitive lessons, occasional spelling inconsistencies, lack of corrective feedback on pronunciation, and a tendency to favor formal register over colloquial speech, as well as some reports of minor bugs in playback and UI responsiveness.

- **Rosetta Stone (limited Persian modules):** Rosetta Stone offers a Persian language course using its well-known Dynamic Immersion™ approach—learn by associating words with images and native-speaker audio without explicit translation or grammar explanations. It includes vocabulary drills, listening and speaking exercises powered by TruAccent™ speech recognition, with instant feedback on your pronunciation. A 3-month single-language plan is around \$36 total (\$8/month), while a lifetime access plan (all languages) costs between \$179 and \$299 depending on promotions. Suited mainly for beginners aiming for A1–A2 proficiency, Rosetta Stone can serve as a structured visual-intuitive introduction to Persian. However, reviews highlight that its method lacks grammar depth, can feel repetitive and sparse in conversational or colloquial usage, and the Farsi interface has received criticism for issues like invisible spaces that cause frustrating typing errors.
- **Quizlet:** Quizlet is a widely-used online learning platform founded in 2005 offering tools like flashcards, adaptive learning modes (Learn, Write, Spell, Test), interactive games (Match, Gravity), diagrams, and real-time classroom collaboration via Quizlet Live. Its free plan allows access to millions of user-generated study sets, basic flashcards, and limited rounds (typically up to five) of Learn and Test modes, though ads are shown and creation tools are restricted. Quizlet Plus, is a flashcard-based platform where learners can access or create Persian decks for vocabulary and grammar. With a premium subscription (\$7.99/month, \$47.88/year), one can get unlimited Learn and Test attempts, ad-free use, offline access, rich media imports (images, audio), AI-powered Q-Chat tutoring, personalized study paths, and advanced content creation tools. Importantly, students in teacher-managed classes can access unlimited use of Learn and Test modes for free, provided they are properly enrolled via a teacher's class and study from the class sets—not the general homepage.

Duolingo, Wordwall, LuvLingua, Drops, Monica, Padlet, Canva- all these multi-purpose AI assistants and design tools offers interactive, gamified learning experiences, enhancing creativity and engagement in Persian lessons. Instant feedback on speaking and grammar boosts student motivation and retention. Structured lessons with audio-visual flashcards supports foundational and intermediate Persian learning. While these apps are useful for beginners and self-learners, advanced content in Persian remains scarce in many mainstream applications.

4.2 Learning Management Systems (LMS)

Formal educational institutions offering Persian courses often use Learning Management Systems (LMS) to organize and deliver content, track student progress, and foster communication. LMS play a crucial role in Persian language learning, particularly in formal online courses, and blended learning environments. LMS platforms are used by universities, language institutes, and private tutors to structure and enhance the language acquisition process through interactive, organized, and scalable systems. Common LMS tools include:

- **Moodle:** Open-source LMS widely used by universities and language institutions for online Persian classes. It supports Persian UI localization (menus, tools, buttons in Persian). Teachers upload reading materials, audio files, discussion prompts, grammar lessons, videos, exercises, quizzes, and assessments. Moodle supports collaborative learning and forum discussions in Persian script. It is excellent for tracking learner progress and enabling discussion forums in Persian.

- **Google Classroom:** Facilitates assignment submission, feedback, and class communication. It is particularly useful for integrating external Persian resources such as YouTube links, Google Docs in Persian, and voice assignments. Frequently used by Persian teachers for remote learning, especially for young learners. Allows Persian script easily in assignments, announcements, and comments. Integration with YouTube Persian lessons, Google Docs, and Forms for quizzes makes it popular in schools and private institutes.
- **Canvas:** Offers a clean interface, multimedia integration, and full Persian font compatibility. Allows video lectures, assignments, feedback, peer interaction, and integration with tools like Zoom, Google Docs, and Kahoot. Used in several Iranian and international universities teaching Persian as a foreign language. Support for Persian script and mobile access. Less commonly used but effective for blended Persian classes, especially in regions with limited tech infrastructure.

These platforms allow for a blended learning model, where traditional instruction is combined with asynchronous digital tasks.

4.3 Digital Media and Online Resources

Persian language learners benefit from a wide array of freely available audio-visual and textual materials online, including:

- **YouTube Channels:** Several educators and native speakers upload lessons, poetry recitations, cultural documentaries, and grammar tutorials. Channels like *Learn Persian with Chai and Conversation* have gained popularity among beginner and intermediate learners.
- **Podcasts:** Persian-language podcasts offer exposure to authentic pronunciation and everyday conversation. Examples include *PersianPod101* and *Learn Persian with Behtarin*.
- **Online Newspapers and Blogs:** Reading Iranian news outlets such as *BBC Persian* or *Etemaad Daily* helps learners build vocabulary and comprehension with real-world content.

These resources also help learners understand cultural context, idioms, and contemporary language usage.

4.4 Social Media and Messaging Platforms

Social and communication platforms are increasingly used for collaborative and peer-to-peer learning, especially in informal and semi-formal contexts:

- **Telegram:** Popular among Persian speakers, Telegram channels and groups offer access to Persian poetry, vocabulary challenges, and teacher-led discussions. Its features like voice messages and polls are used creatively in teaching.
- **WhatsApp:** Enables learners to form study groups, practice writing in Persian script, and send audio recordings for pronunciation correction.
- **Instagram:** Some Persian educators use visual posts and short videos to teach vocabulary, grammar tips, or Persian calligraphy.

These platforms facilitate community learning, especially for learners who do not have access to formal Persian instruction.

4.5 Digital Dictionaries and Translators

Digital tools like *Google Translate*, *Aryanpour Dictionary*, and *FA-EN dictionaries* are indispensable for learners. Though not flawless, these tools support: quick translation and pronunciation, script learning (transliteration and Persian writing), and grammar look-up and usage examples. Advanced learners use these tools for reading comprehension and writing accuracy in academic or real-life texts.

4.6 AI-Based Language Tools

While still emerging in Persian language learning, AI-driven tools offer exciting possibilities:

- **Chatbots and AI Tutors:** Platforms like *Replika* or *Monica* can simulate conversational practice.

- **Speech Recognition Tools:** Built-in features on Android/iOS devices or tools like Google Speech-to-Text support pronunciation practice and voice-based input in Persian.
- **Grammatical Correction Tools:** While less developed than in English, some Persian proofreading tools are under development and being tested in academic settings.

These tools support learner autonomy, fluency, and error correction, particularly for writing and speaking skills.

4.7 Virtual and Augmented Reality (VR/AR): Emerging Technologies

Although not widely used yet, VR and AR tools have potential in Persian language immersion by simulating real-life interactions or Iranian cultural experiences. For example: VR travel apps showcasing Persian-speaking cities and AR-enabled flashcards for vocabulary learning. These tools can support contextual learning and increase learner motivation through experiential engagement.

5. Findings and Discussion

This section presents the key findings derived from classroom observations, instructor interviews, and digital content analysis. The insights are categorized based on recurring themes related to language skill development, learner engagement, pedagogical effectiveness, and technological challenges in Persian language education.

5.1 Enhancement of Language Skills through Technology

Observation and interview data suggest that different technologies support different aspects of Persian language proficiency:

- **Listening and Speaking:** According to most of the instructors YouTube videos, Persian podcasts, and voice messaging apps like Telegram significantly improved students' listening comprehension and pronunciation. Learners were more confident in mimicking native speech when they had repeated exposure to audio content in informal settings.
- **Reading and Vocabulary:** Mobile apps like Memrise, Kahoot! and Learn Persian were frequently used to strengthen vocabulary and reading skills. Teachers noted that students who used flashcard-based apps showed faster word recall and more accurate usage in class discussions.
- **Writing and Grammar:** Digital writing assignments submitted via Google Docs or Moodle allowed instructors to provide real-time feedback. Peer collaboration tools also enabled students to write journal entries or short essays in Persian, improving accuracy over time.

5.2 Increased Learner Engagement and Autonomy

Instructors consistently highlighted a rise in student motivation when technology was integrated into lessons. Learners were more engaged when lessons included:

- Interactive apps (e.g., gamified vocabulary drills)
- Multimedia content (e.g., Persian music or film clips)
- Digital storytelling tools (e.g., student-created voice notes or comics)

Many students also took initiative to explore Persian content outside the curriculum, such as following Persian-speaking influencers on Instagram or joining Telegram channels for poetry and cultural news. This indicates an increase in learner autonomy and sustained interest beyond the classroom.

5.3 Pedagogical Innovation and Flexibility

Technology allowed teachers to adapt their instructional strategies more easily, as lessons could be customized based on learner pace and proficiency. Also, Multimedia resources can address diverse learning styles like- auditory, visual, and kinaesthetic. Online platforms supported flexible scheduling and asynchronous learning, which benefited students in different time zones or with limited classroom access. Moreover, teachers found that students retained more cultural context when exposed to real-world Persian media than from textbook examples alone.

5.4 Challenges and Limitations

Despite the benefits, several challenges were also reported:

- Limited availability of advanced Persian content on global platforms (e.g., Duolingo lacks an official Persian course).
- Technical issues, such as unstable internet or unfamiliarity with Persian script typing, hindered smooth integration in some classes.
- Digital literacy gaps among older students or teachers unfamiliar with new tools.
- Lack of AI-based grammar correction tools for Persian compared to English or other major languages.
- Teachers also expressed concern about overreliance on technology and the potential decline of in-person speaking and writing practice.

5.5 Comparison with Other Language Learning Contexts

Compared to other widely taught languages, the Persian language community is less digitally resourced, both in commercial tools and institutional support. However, the strong cultural richness of Persian—poetry, music, cinema—provides valuable content for digital adaptation. When properly curated and integrated, this content can compensate for the lack of structured commercial tools.

5.6 Summary of Key Findings

Technology supports skill development in listening, reading, writing, and speaking—especially through multimedia and communication apps. Learners become more autonomous and culturally immersed when exposed to authentic digital materials. Instructors benefit from flexibility but face content and infrastructure limitations. There is an urgent need for Persian-specific digital tool development and teacher training in tech integration, especially for non-native Persian students and teachers.

6. Pedagogical Implications and Recommendations

The findings of this study highlight the significant potential of technology to support and enhance Persian language instruction. However, the effective integration of digital tools requires careful pedagogical planning, appropriate content curation, and adequate support for both teachers and learners. This section outlines key pedagogical implications and provides practical recommendations for instructors, curriculum developers, and institutions.

6.1 For Persian Language Teachers

- **Incorporate Blended Learning Models:** A combination of in-class instruction and digital tasks can maximize exposure and practice. Teachers can use platforms like *Google Classroom* or *Moodle* to assign listening tasks, grammar exercises, and creative writing prompts.
- **Use Multimedia Strategically:** Authentic Persian materials (videos, music, poetry) can help students develop listening skills, cultural literacy, and oral fluency. Teachers should select content based on learners' proficiency levels and clearly defined learning outcomes.
- **Foster Digital Literacy:** Instructors should receive training on how to use Persian typing tools, multimedia editing software, and collaborative platforms (e.g., Padlet) to enhance classroom engagement.
- **Encourage Self-Directed Learning:** Teachers can guide students in choosing appropriate apps, YouTube channels, or podcasts for extracurricular learning. Learner autonomy can be strengthened by promoting goal-setting, reflection, and digital portfolios.

6.2 For Curriculum Developers

- **Design Persian-Specific Digital Content:** There is a pressing need for structured, level-based Persian learning modules tailored to various digital platforms. Multimedia grammar lessons, interactive stories, and pronunciation practice tools should be integrated into formal syllabi.
- **Embed Technology into Assessment:** Language assessment should incorporate digital tools such as oral recordings, online quizzes, and collaborative writing tasks, reflecting real-world language use.

- **Promote Intercultural Competence:** Curriculum designers should include Persian cultural elements (e.g., Nowruz, Persian cinema, classic poetry) in digital modules to promote deeper learner engagement and identity-building.

6.3 For Educational Institutions

- **Provide Access to Technological Infrastructure:** Institutions must ensure students and teachers have access to high-speed internet, updated software, and language-specific keyboard tools, particularly in under-resourced areas.
- **Support Professional Development:** Institutions should organize workshops, webinars, and training programs on integrating technology into Persian language instruction, especially for teachers new to digital platforms.
- **Establish Collaborative Networks:** Universities and cultural centres can collaborate to create resource-sharing networks, digital libraries, and online repositories of Persian language content.

6.4 For Policymakers and Language Program Coordinators

- **Invest in Persian Language EdTech Projects:** Policymakers should fund the development of AI-powered Persian language learning platforms, mobile apps, and voice-interactive tools to match those available for other major languages.
- **Recognize the Role of Persian in Global Education:** Governmental and non-governmental bodies should support Persian as a strategic language by offering digital resources and scholarships for learners and teachers.
- **Encourage Multilingual Digital Inclusion:** As Persian is often overlooked in global EdTech markets, language planners should advocate for its inclusion in international language-learning platforms and open-access repositories.

7. Limitations of the Study

Through classroom observations, instructor interviews, and content analysis of various digital tools, the research revealed that technology plays a transformative role in modern language instruction. It not only supports the development of core language skills—listening, speaking, reading, and writing—but also increases learner engagement, autonomy, and cultural immersion. But this study was qualitative in nature and did not include learner surveys or large-scale quantitative data. As such, findings are based on a limited participant pool and may not reflect all learning contexts. Future research could include learner performance data, longitudinal studies, or comparative analyses with other less commonly taught languages.

8. Conclusion

By aligning pedagogical strategies with digital innovations, the Persian language education community can create inclusive, engaging, and future-ready learning environments. These changes not only improve language proficiency but also foster intercultural awareness and learner confidence in global contexts. This study set out to explore how the integration of technology can enhance Persian language proficiency among learners. Mobile applications, multimedia resources, online platforms, and AI-driven tools have expanded the learning landscape for Persian, especially in contexts where access to native speakers or structured classes is limited. Teachers benefit from greater flexibility and resource diversity, while learners are empowered to explore the language beyond the boundaries of the classroom. However, the study also identified significant challenges, including the lack of Persian-specific content in mainstream apps, digital literacy gaps among instructors and learners, and limited institutional investment in Persian language EdTech. Addressing these challenges requires coordinated efforts from educators, curriculum developers, institutions, and policymakers. The findings underscore the need for pedagogical innovation that combines technological tools with culturally rich and learner-centered approaches. By leveraging available resources and advocating for more inclusive technology development, stakeholders can ensure that Persian language education continues to thrive in the digital age.

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Supportive Online resources

- <https://www.mondly.com> -
- <https://www.memrise.com>
- <https://www.rosettastone.com>
- <https://talkpal.ai>
- <https://www.persianpod101.com>
- <https://play.google.com/store/apps/details?id=com.silvermoonapps.luvlingualearnfarsi>
- <https://www.quizlet.com>
- <https://www.kahoot.com>
- <https://moodle.org>
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