

The Relationship Between Media and Technology Usage and Learning Styles in Language Learning

Elham Azad  and Mehmet Ali Yavuz 

Department of English Language Teaching (ELT), Cyprus
International University, Cyprus

Abstract

This study examines the correlation between Iranian students' learning styles and their media and technology use for language acquisition in Australian higher education. Understanding of how learners' technology use aligns with their personal learning preferences can offer valuable insights for more effective pedagogical design. In this study, the Learning Style Survey (LSS) and the Media and Technology Usage and Attitudes Scale (MTUAS) were used in a quantitative survey to measure dominant learning styles and technology use frequency among 85 participants. The results revealed that approximately 75% of participants preferred visual learning, and the most frequently used tools for language learning were smartphones and text messaging. Correlation analysis revealed that there was a weak association between specific learning styles and particular technologies—for example, visual learners with television viewing and auditory learners with phone calls. These results suggest that, in multicultural contexts, designing Computer-Assisted Language Learning (CALL) environments should prioritize accessibility and prevailing digital habits rather than strict adherence to learning style alignment.

Keywords: Learning styles, computer-assisted language learning (CALL), higher education, Iranian students, technology-enhanced language learning

Introduction

Rapid advances in digital technology have transformed the ways in which languages are taught and learned, expanding opportunities for interaction and personalization in educational settings. Mobile applications, AI-driven platforms, and other digital instruments can enhance learner motivation and autonomy as well as the development of language skills (Lai et al., 2022). Yet the effectiveness of these technologies is not uniform across learners. Differences in how individuals process and retain information—often described as learning styles such as visual, auditory, or kinesthetic—may shape how they select and engage with digital resources. Although recent research has cast doubt upon matching instruction to individual preferences in this way (Emban et al., 2025), it is still valuable for optimizing teaching design to investigate their association with the use of technology.

Despite extensive research on learning styles and tech-mediated language learning, little research has investigated an area's crossing within an international students' context of Iranian international students in Australian higher education—a growing cohort whose learning experiences are shaped by cultural adaptation, varying English proficiency, and differing prior exposure to educational technologies. This study addresses that gap by the investigation of students' learning styles and their digital language learning tool engagement, which provides evidence of how cultural and educational backgrounds may influence technology engagement. Results will be useful in designing culture-responsive EdTech tools and extending theoretical understandings on learner–technology interaction in multicultural environments.

Literature Review

Currently, technology plays an essential role in language learning, offering clear benefits such as stronger vocabulary retention, better fluency, and richer opportunities for collaboration. An earlier study by Lai et al. (2014) revealed that with clear instructional goals, digital tools can enhance all core language skills. In a recent study, Lee and Lee (2024) reported that AI-guided, personalized language learning significantly boosts learners' performance. Zhang et al. (2023) found that chatbot-assisted learning can outperform traditional methods when design and interaction features are well optimized. Mobile-assisted language learning (MALL) has been shown to foster autonomy and engagement by allowing learners to personalize and direct their own study (Nurmala et al., 2023).

Learning style as individual preferences for processing information can influence how learners choose and interact with digital tools. While earlier research (Cohen et al., 2001) suggested that aligning teaching to such preferences could improve learning outcomes, later studies have been more cautious. Newton and Miah (2017) and Emban et al. (2025) both highlighted the limited evidence for strict alignment, though they note that multimodal approaches, which accommodate a variety of preferences, can help maintain motivation and engagement in technologically advanced settings.

Despite the growing interest in both learning styles and technology-assisted language learning, their intersection has received limited attention, particularly in international higher education contexts. Research on adaptive platforms has shown that technology can accommodate diverse preferences (Kukulska-Hulme & Viberg, 2017). However, newer developments of AI-driven personalisation of CALL have seen limited interest in this respect. Examining how Iranian students' learning styles interact with their use of technology can help in designing EdTech that is responsive to culture and further theoretically develop learner–technology interaction across multicultural settings.

Research Questions

The current study seeks to answer the following research questions:

1. What are the most common learning styles among Iranian students enrolled in Australian higher education institutions?
2. How frequently, and for what purposes, do these students use different forms of media and technology for language learning?
3. How do students' learning styles relate to the frequency and type of media and technology use for language learning?

Methodology

The study involved 85 Iranian students from various program, aged 18–40, enrolled in undergraduate and postgraduate programs at Australian universities. This age range reflects the typical university demographic, with mature learners over 40 excluded. Participants were recruited via university mailing lists and Iranian student networks. Ethics approval was granted by Cyprus International University (Approval No. EKK24-25/16/10).

To collect the necessary data, two instruments were employed. The Learning Style Survey (Cohen et al., 2001) identified learners' dominant

preferences. This study focused on the Visual, Auditory, and Kinesthetic (VAK) categories due to their relevance to technology use in language learning although the instrument includes several dimensions. While the VAK model has been debated (Newton & Miah, 2017), it remains pedagogically useful when applied with caution. The other validated instrument—the Media and Technology Usage and Attitudes Scale (MTUAS; Rosen et al., 2013) assessed students' frequency of digital tool use and attitudes. Only subscales relevant to language learning—smartphones, messaging, email, and video streaming—were included. A small pilot study confirmed cultural appropriateness and language clarity.

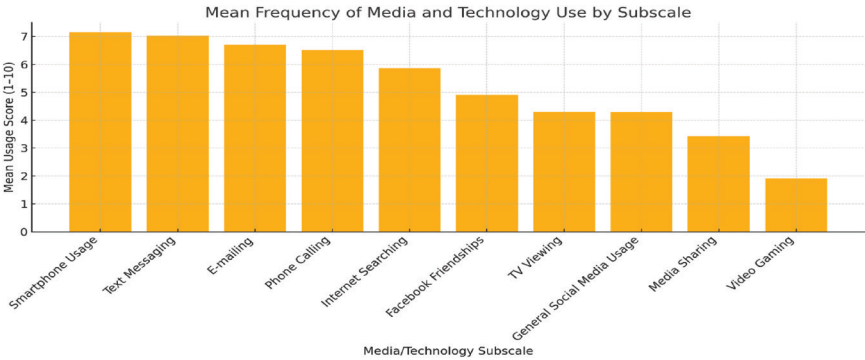
Data collection was conducted online via Google Forms over a three-week period. Eighty-five out of 102 cases were retained. Descriptive statistics, Pearson correlations, and one-way ANOVA were used to examine learning style prevalence and its relationship to technology use.

Result (Hypothetical Overview)

To address the first research question, descriptive statistics were used to summarize the distribution of dominant learning styles. Visual learning was the most prevalent preference (75%) followed by auditory (15%) and kinesthetic (10%). No significant variation was observed across age groups or gender.

In response to the second question, analysis of MTUAS subscales indicated that smartphone use and text messaging were the most frequently used tools for language learning, with over 80% of participants reporting daily use. This was followed by email (58%) and phone calls (42%). In contrast, TV viewing (22%), video gaming (15%), and online friendships (18%) were less common. These patterns suggest a strong preference for mobile-based and text-driven tools in learners' digital routines.

To explore the third research question, Pearson correlation coefficients were calculated to examine associations between learning styles and specific technology use. Visual learners had a weak positive correlation with TV viewing ($r = .24, p < .05$), while auditory learners were moderately associated with phone calling ($r = .31, p < .01$). Kinesthetic learners demonstrated a small negative correlation with text messaging and smartphone use ($r = -.18, p = .07$), indicating a limited alignment between their preferred learning mode and the dominant digital platforms. Overall, these findings indicate that while certain tendencies exist, the relationship between learning styles and technology use is modest.



Discussion and Conclusion

The findings of this study are consistent with recent research showing weak correlations between learning styles and technology use (Sui et al., 2023). In this sample, mobile technology adoption appeared to be driven more by convenience and accessibility than by instructional fit. The dominance of smartphones and messaging tools among Iranian students reflects broader trends such as mobile-first internet use and limited access to computers in Iran (Mokhtarinia et al., 2024).

These findings align with the Technology Acceptance Model (Davis, 1989), in which perceived ease of use and usefulness outweigh individual cognitive style preferences. More recent studies (e.g., Feng et al., 2025) also highlight that habitual behaviors and available infrastructure serve as stronger predictors of technology adoption than cognitive styles. Weak correlations in this domain may also reflect the limitations inherent in self-reported learning style data (Newton & Salvi, 2020). Considering cultural adaptation, language barriers, and limited resources, inclusive CALL environments should emphasis mobile-friendly, multimodal resources that allow flexible engagement instead of rigid learning style alignment.

This study indicates that everyday digital habits, particularly mobile use, can outweigh learning style preferences among Australian-educated Iranians. The findings challenge assumptions behind style-based EdTech and support learner-focused, technology-integrated curricula grounded in actual use. In practice, this means prioritizing mobile-friendly platforms, using multimodal resources, and accounting for infrastructure in both local and global contexts. Further research should explore diverse cultural groups and track changes in technology preferences over time.

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