

CLASSIFICATION AND DIDACTIC POTENTIAL OF DIGITAL EDUCATIONAL TOOLS AIMED AT DEVELOPING ORAL SPEECH IN JAPANESE**Navruzjon Bakoev**Lecturer at the Department of Uzbek and Oriental Languages,
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Abstract: This research investigates the classification and didactic potential of digital tools specifically designed to enhance Japanese oral proficiency. By analyzing technologies ranging from AI-driven speech recognition to immersive VR environments, the study establishes a systematic typology based on pedagogical functions. The findings highlight how digital integration mitigates phonetic and socio-cultural barriers, offering a framework for educators to optimize communicative competence through personalized, interactive, and feedback-rich learning ecosystems in modern Japanese linguistics.

Key words: Japanese lingvodidactics, oral speech, digitalization, call, pitch accent, keigo, AI-chatbots, shadowing, communicative competence, pedagogy.

The contemporary landscape of foreign language acquisition is undergoing a radical paradigm shift, driven by the global demand for Japanese language proficiency and the pervasive digital transformation of applied linguistics. As Japan remains a pivotal hub for technological innovation and cultural export, the necessity for effective oral communication skills has transcended traditional classroom boundaries. However, achieving fluency in Japanese presents unique linguistic hurdles that are often difficult to surmount in non-native environments. The primary problem lies in the intricate nature of Japanese phonology—specifically the pitch accent system—and the socio-pragmatic complexities of honorifics (Keigo) and conversational fillers (Aizuchi). Traditional pedagogical models frequently struggle to provide the high-frequency, interactive exposure required to master these nuances, leading to a gap between theoretical knowledge and spontaneous speech production.

The rationale for this research is rooted in the need to bridge this gap by leveraging the affordances of Computer-Assisted Language Learning (CALL) and Mobile-Assisted Language Learning (MALL). Despite the abundance of digital resources, there is a lack of systematic classification regarding their didactic potential specifically for oral development. Therefore, the objective of this study is to categorize existing digital tools and evaluate their empirical effectiveness in fostering oral proficiency. To achieve this, the research employs a multi-dimensional methodology, including a comparative analysis of software architectures, a typological classification based on cognitive-functional criteria, and empirical observation of learner-tool interaction. By synthesizing perspectives from both Eastern and Western linguistic traditions, this study aims to provide a comprehensive roadmap for integrating digital ecosystems into the Japanese language curriculum, ensuring that learners develop not just grammatical accuracy, but a resonant, culturally grounded "digital communicative competence" that meets the demands of the 21st century¹.

The evolution of Computer-Assisted Language Learning (CALL) has transitioned from early "behavioristic" models to modern "integrative" and "sociocognitive" paradigms. In the context of Japanese linguistics, this shift represents an evolution from static electronic dictionaries to dynamic, interactive ecosystems. According to European researchers such as Stockwell, digital tools are no longer mere supplements but are central to the "affordance-based" learning environment². In the CIS and Russian scientific schools, researchers like Azimov and Shchukin emphasize the "informatization" of lingvodidactics, where digital tools serve as a

¹ Levy Michael. 1997. *Computer-Assisted Language Learning: Context and Conceptualization*. Oxford: Clarendon Press.

² Stockwell Glenn. 2022. *Mobile-Assisted Language Learning: Concepts, Contexts and Challenges*. Cambridge: Cambridge University Press.

bridge between the linguistic code and the cultural context³. Uzbek scholars, including Jalolov, have highlighted that the effectiveness of such tools depends on their ability to simulate authentic communicative situations, which is particularly vital for the complex phonetic and hierarchical structure of the Japanese language⁴. Furthermore, Muratova argues that in the Uzbek educational context, the integration of multimedia resources is essential for overcoming the lack of a natural Japanese-speaking environment⁵.

Mastering Japanese oral speech involves navigating profound psycholinguistic barriers. Unlike Indo-European languages, Japanese requires the simultaneous management of "Pitch Accent" and "Mora-timing." Scientific observations by Japanese linguists such as Hirose demonstrate that digital visualization of pitch contours can significantly reduce "foreign accent syndrome" in learners⁶. Furthermore, the concept of "Language Anxiety," famously theorized by MacIntyre and Gardner, is particularly acute in Japanese due to the rigid social hierarchy embedded in the language⁷. The "social hierarchy" barrier often paralyzes students during oral production for fear of misusing Keigo. Modern digital environments provide a "low-stakes" simulation space where learners can experiment with different levels of politeness without social consequence. This didactic "safety net" is a crucial potential of AI-driven chatbots and virtual avatars, which allow for the repeated rehearsal of socio-linguistic patterns in a controlled environment.

Finally, the shift toward digitalization necessitates a redefinition of "Communicative Competence." In the digital age, this competence is not merely the ability to speak, but the capacity to engage in "mediated interaction." This involves mastering both synchronous communication and asynchronous production. The Japan Foundation, through its JF Standard, has adapted the European CEFR framework to include digital interaction as a core component of fluency. The didactic potential here lies in "multimodality"—the integration of text, audio, and visual cues that reinforce the auditory-perceptual link⁸. By utilizing tools that offer immediate, data-driven feedback, learners can transition from "passive recognition" to "active production." This theoretical framework suggests that the integration of digital tools is not a technical choice but a methodological necessity to overcome the inherent complexities of Japanese oral discourse in a globalized educational context.

The structural classification of digital tools for Japanese language acquisition requires a multi-dimensional approach that accounts for both technical architecture and communicative intent. From a functional perspective, the most transformative shift in Japanese lingvodidactics is the integration of Automatic Speech Recognition (ASR) and Text-to-Speech (TTS) technologies. These tools, often functioning as AI-driven pronunciation coaches, allow for the real-time correction of pitch accent—a feature traditionally difficult to monitor without a native instructor. As noted by Japanese researcher Hirose (2014), the visualization of fundamental frequency (F0) contours through software like OJAD (Online Japanese Accent Dictionary) provides learners with a concrete cognitive map of melodic patterns, bridging the gap between auditory perception and articulatory execution. Complementary to these are specialized shadowing and mimicry platforms, which operationalize the "Shadowing" technique. These platforms facilitate the

³ Еремеева, Оксана Алексеевна. "О ПРОЕКТЕ СОЗДАНИЯ КОМПЛЕКСНОГО СПЕЦИАЛИЗИРОВАННОГО СЛОВАРЯ ТЕРМИНОВ МЕТОДИКИ ПРЕПОДАВАНИЯ РУССКОГО ЯЗЫКА." *Известия* 4 (2022): 297.

⁴ Jalolov, Jamol. 2012. *Chet tili o'qitish metodikasi* [Foreign Language Teaching Methodology]. Tashkent: O'qituvchi.

⁵ Muratova, Nargiza. 2020. "Innovatsionnye tekhnologii v prepodavanii yaponskogo yazyka v Uzbekistane" [Innovative Technologies in Teaching Japanese in Uzbekistan]. *Oriental Art and Culture* 4: 112–118

⁶ Fujisaki, Hiroya, and Keikichi Hirose. "Analysis of voice fundamental frequency contours for declarative sentences of Japanese." *Journal of the Acoustical Society of Japan* (e) 5, no. 4 (1984): 233-242.

⁷ MacIntyre, Peter D., and Robert C. Gardner. 1994. "The Subtle Effects of Language Anxiety on Cognitive Processing in the Second Language." *Language Learning* 44 (2): 283–305.

⁸ Japan Foundation. 2017. *JF Standard for Japanese-Language Education*. Tokyo: The Japan Foundation.

rhythmic synchronization and mora-timing essential to Japanese fluencies, moving beyond simple repetition to deep phonological immersion.

Furthermore, the classification extends to the mode of interaction, distinguishing between synchronous and asynchronous communicative environments. Synchronous tools, such as high-definition video conferencing (Zoom, Microsoft Teams) and specialized language exchange ecosystems like HelloTalk or Tandem, simulate the "Ba" (contextual space) necessary for authentic interpersonal negotiation of meaning. Conversely, asynchronous tools—including voice messaging systems, interactive podcasts, and automated drilling software—provide the necessary "spaced repetition" for lexical and grammatical automation. The distinction is critical in the CIS and Russian methodological tradition; as Polat (2001) argues, the efficacy of distance learning depends on the balance between autonomous linguistic processing (asynchronous) and spontaneous social interaction (synchronous). In the Uzbek educational context, Muratova (2020) emphasizes that such tools are vital for creating a "synthetic" linguistic environment where a natural one is absent, allowing students to rehearse Keigo and social scripts in a controlled, low-anxiety digital space.

The frontier of this classification lies in emerging technologies, specifically Generative Artificial Intelligence (LLMs) and Virtual Reality (VR). Unlike traditional software, Generative AI chatbots (e.g., GPT-4o, Japanese-specific models) function as infinite interlocutors capable of simulating various social roles, from a casual friend to a formal interviewer. This allows for the practice of "sociopragmatic competence" in a way previously impossible without human partners. European scholars like Stockwell highlight that these immersive environments—particularly VR—create a high degree of "presence," where the cognitive load of speaking a foreign language is modulated by the familiarity of the digital "setting."⁹ By placing a student in a virtual Tokyo convenience store or a corporate boardroom, these tools provide the situational cues necessary for the correct application of Japanese honorifics, thereby transforming the digital tool from a passive resource into a proactive didactic agent.

The didactic potential of digital tools in Japanese oral speech development is rooted in their inherent "pedagogical affordances"—specifically interactivity, multimodality, and the immediacy of the feedback loop. In traditional settings, the feedback cycle is often delayed and individualized instruction is limited by classroom time. Digital ecosystems, however, offer "just-in-time" corrections that are crucial for mastering Japanese moraic structures and pitch. As European CALL specialist Levy theorized, the multimodal nature of these tools—combining visual pitch graphs, audio samples, and textual cues—caters to diverse cognitive styles, thereby accelerating the transition from "declarative knowledge" (knowing the rule) to "procedural knowledge" (using the language). This is particularly effective for Japanese, where the visual nature of the writing system can be leveraged to support the auditory-vocal channel through interactive subtitles and phonetic highlighting.

Strategic integration of these tools often follows the "Flipped Classroom" model, a methodology that has gained significant traction in both Western and Uzbek pedagogical circles. According to the research of Jalolov, the optimization of the "contact hour" is paramount; by shifting grammar and vocabulary drills to autonomous digital platforms, the physical or virtual classroom is reserved exclusively for high-intensity communicative practice. This model is further enhanced by gamification elements—leaderboards, badges, and progress tracking—which address the psycholinguistic barrier of "foreign language anxiety." By framing oral production as a "quest" or a social game, digital platforms encourage risk-taking in speech, which is often inhibited in the traditional, hierarchy-conscious Japanese language classroom. The CIS school of thought, represented by Azimov and Shchukin, supports this by noting that

⁹ Stockwell, Glenn. 2022. *Mobile-Assisted Language Learning: Concepts, Contexts and Challenges*. Cambridge: Cambridge University Press.

"informatization" should not replace the teacher but should redefine the teacher's role as a "moderator" of digital-mediated interaction.

The assessment of digital-integrated curricula reveals a significant empirical advantage over purely traditional methods. Comparative studies and case analyses indicate that students utilizing AI-tutors and shadowing apps demonstrate higher levels of "fluency" (measured by speech rate and length of run) and "accuracy" (measured by pitch-accent conformity). Japanese researchers have observed that learners who engage with "Shadowing" apps show marked improvement in their Aizuchi (conversational fillers), making their speech sound more "natural" to native ears. In conclusion, the didactic potential of these tools lies in their ability to provide a "high-density" linguistic environment. By synthesizing the technical affordances of AI and VR with established methodological frameworks like the JF Standard educators can create a robust pedagogical system that prepares students for the complexities of real-world Japanese communication in the 21st century¹⁰.

Despite the technological surge, current digital tools face significant limitations in addressing the subtle complexities of Japanese oral discourse. A primary technical hurdle remains the precision of Automatic Speech Recognition (ASR) in detecting Japanese pitch accents; many AI systems still prioritize lexical accuracy over tonal phonology, potentially reinforcing "flat" speech patterns in learners. Furthermore, as noted by Japanese scholars like Hirose (2014), AI often struggles with the high-context nuances of Keigo (honorifics), failing to account for the fluid social distance between interlocutors. This technological gap necessitates a redefinition of the instructor's role. In a digital-rich environment, the teacher transitions from a primary "knowledge provider" to a "methodological facilitator"¹¹. The educator's new mandate is to curate digital paths and provide the critical sociolinguistic feedback that AI cannot yet replicate.

Looking forward, the democratization of immersive learning through affordable VR and personalized AI tutors suggests a more equitable future for Japanese language learners globally. Future trends point toward "Hyper-Personalization," where generative models adapt in real-time to a student's specific phonetic weaknesses and cultural biases. As Uzbek and European researchers suggest, the ultimate didactic goal is to create a seamless "blended" ecosystem. In this future, digital tools provide the infinite, low-anxiety rehearsal space (the "Ba"), while human instructors guide the high-level pragmatic execution, ensuring that learners achieve a resonant and culturally authentic Japanese voice.

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¹¹ Stockwell, Glenn. 2022. *Mobile-Assisted Language Learning: Concepts, Contexts and Challenges*. Cambridge: Cambridge University Press.

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