The OSCAR PUBLISHING Services
American Journal of Philological Sciences

VOLUME Vol.06 Issue03 2026
PAGE NO. 31-37
DOI 10.37547/ajps/Volume06Issue03-07

The Role of Digital Tools in Enhancing Communication Skills in English Among High School Students

Torejanova Altinay

Institution: Doctoral Student, Karakalpak State University, Specialty: 13.00.02 – Theory and Methodology of Education and Training (English Language), Uzbekistan

Received: 24 January 2026; **Accepted:** 20 February 2026; **Published:** 12 March 2026

Abstract: This article examines the role of digital tools in enhancing English communication skills among high school students. Drawing on contemporary research from diverse educational contexts, the study analyzes various digital platforms and applications—including aipowered speech evaluation tools, video conferencing platforms, language learning apps, and pronunciation software—and their impact on developing students' speaking proficiency, listening comprehension, and overall communicative competence. The research synthesizes findings from recent experimental studies demonstrating significant improvements in fluency, pronunciation, vocabulary, and learner confidence through technology integration. Challenges such as limited infrastructure, teacher preparedness, and digital literacy are also discussed. The article proposes a comprehensive framework for effectively integrating digital tools into high school English instruction, with particular attention to the Karakalpak educational context.

Keywords: Digital tools, communication skills, English language teaching, high school students, aipowered applications, MALL, speaking proficiency, technology integration.

Introduction: In the 21st century, English has become an indispensable tool for global communication, academic success, and professional advancement. As Hsieh et al. (2023) observe, with the emergence of globalization, English has become increasingly important as a tool for transnational communication and exchange, which facilitates EFL learners to improve their speaking skills [9:1]. However, developing oral proficiency remains one of the most persistent challenges in language learning across global contexts. Despite extensive formal instruction, many learners worldwide struggle to convert grammatical and lexical knowledge into fluent, confident spoken communication [3:2].

The integration of digital technologies in foreign language education has emerged as a promising solution to these challenges. From aipowered speech evaluation tools to interactive language learning applications, digital platforms offer unprecedented opportunities for learners to engage in authentic communication practice. Research indicates that technologybased instruction can significantly enhance students' speaking abilities, with studies demonstrating gains of 13.5 points in speaking scores compared to traditional methods [5:1; 8:1].

For high school students in Karakalpakstan, where English is taught as a foreign language in a bilingual context, digital tools present both opportunities and challenges. Students often face limited exposure to authentic English, linguistic interference from their native Karakalpak language, and motivational barriers that impede oral communication [7:3]. This article examines how digital tools can address these challenges and enhance English communication skills among high school students, drawing on international research and considering implications for the Karakalpak educational context.

The research aim is to analyze the role of digital tools in developing English communication skills among high school students, identify effective tools and approaches, and propose a framework for integration that accounts for contextual factors. The research

objectives include examining various digital platforms and their impact on speaking proficiency, analyzing challenges in technology integration, synthesizing findings from recent experimental studies, and developing practical recommendations for educators.

LITERATURE REVIEW

Theoretical Foundations of technologyenhanced Language Learning

The integration of digital tools in language education is grounded in several theoretical frameworks. Krashen's Input Hypothesis (1985) posits that language acquisition occurs when learners are exposed to comprehensible input slightly above their current proficiency level. Digital tools provide abundant authentic input through podcasts, videos, and interactive content, exposing learners to natural language use [2:1].

The Interaction Hypothesis, proposed by Long (1983), emphasizes the pivotal role of meaningful interaction in language acquisition. Learners receive comprehensible input from more proficient speakers and refine their language output through negotiation for meaning and clarification requests [9:2]. Digital platforms facilitate this interaction through video conferencing, aipowered conversation partners, and collaborative online tasks.

Vygotsky's Sociocultural Theory (1978) highlights the importance of social interaction in cognitive development. Within the Zone of Proximal Development, learners accomplish tasks with guidance from more capable peers or tools that they cannot complete independently. Digital tools serve as mediators in this process, providing scaffolding through immediate feedback, pronunciation models, and adaptive learning paths [5:4].

Mobileassisted Language Learning (MALL) has emerged as a significant field of study. Kukulskahulme (2020) notes that MALL offers opportunities for autonomous, personalized learning that can complement classroom instruction, enabling learning beyond traditional boundaries [5:4].

Digital Tools for Enhancing Speaking Skills

Contemporary research has identified numerous digital tools effective for developing English speaking proficiency:

Aipowered Speech Evaluation Applications: Asteriana (2025) investigated the effectiveness of the ELSA Speak application in improving high school students' Englishspeaking skills. Using a quasiexperimental design with 26 students, the study found significant improvement in speaking scores from a mean of 12.11 (pretest) to 18.07 (posttest). A paired sample ttest confirmed the difference was statistically significant ($p < 0.05$). Qualitative findings revealed that students gained confidence, fluency, and motivation through interactive features and instant feedback [1:1]. Similarly, Harahap and Dalimunthe (2024) examined the speechace application with junior high school students, finding that the experimental group's average score increased from 75 to 88 ($p=0.001$) compared to minimal gains in the control group [10:1].

Video Conferencing and Recording Platforms: Napitupulu, Wisrance, and Semiun (2025) conducted a sixweek quasiexperimental study with 70 secondary school students in rural Indonesia, comparing technologybased instruction using Flipgrid, Google Meet, and multimedia apps against traditional methods. Results revealed that students in the experimental group outperformed their peers, with a statistically significant gain of 13.5 points in speaking scores ($p < 0.001$, Cohen's $d = 2.10$), compared to 4.4 points in the control group. Students demonstrated higher levels of confidence, engagement, and linguistic accuracy during speaking tasks [5:1; 8:1].

Online Speaking Platforms: A study conducted at School No. 39 in Sirdaryo region, Uzbekistan, with 16 secondary school students aged 15–17 examined the impact of digital platforms such as Zoom, Flipgrid, and Google Meet on improving learners' oral fluency, pronunciation, and confidence. Results indicated that integrating online tools increases students' exposure to authentic communication, encourages peer interaction, and supports selfdirected learning [2:1].

AI Chatbots and Conversational Agents: Rahimi and Fathi (2024) randomly assigned 65 EFL learners to an AI group using the Andy English Chatbot and a control group with peer interaction. Data collected through the IELTS speaking test and WTC scale indicated that aimediated interactive speaking activities were significantly more effective in enhancing EFL learners' speaking skills and willingness to communicate [9:3].

Aipowered Applications and Willingness to Communicate

Willingness to Communicate (WTC) serves as a crucial determinant of students' frequency of speaking practice, ultimately contributing to their speaking proficiency [9:2]. Recent research has explored how AI technologies influence WTC:

Tai and Chen (2023) explored the influence of Intelligent Personal Assistant on young EFL learners' WTC in secondary school contexts. Results indicated that AI assistants can promote learners' WTC and selfperceived communicative competence and reduce speaking anxiety to a large extent [9:2].

Zou, Lyu, Han, Li, and Zhang (2025) analyzed an AI speech evaluation system for English speaking practice through the Integrated Model of Technology Acceptance (IMTA). With 218 EFL learners, results suggested that most participants found the AI program useful, pleasant, and easy to use, with strong intention to continue using it. Perceived usefulness and perceived enjoyment were significant predictors of behavioral intention to use [6:1].

Wang and colleagues (2025) investigated students' willingness to communicate using AI technology in Englishspeaking practice. Quantitative findings indicated significant improvement in students' inclass WTC following implementation of an aipowered English speech evaluation program. Interview data revealed positive attitudes toward using AI platforms, with students reporting notable improvements in speaking skills and strong willingness to continue using the platform [9:1].

Mobile Applications for Integrated Skills Development

Yang (2025) explored the potential of integrating multiple mobile phone applications to enhance Chinese high school students' English listening and speaking skills, particularly in the context of highstakes oral exams. The research proposed a multiapp integration framework combining apps such as Xiyou English, Duolingo, and ELSA Speak to address specific skill deficits and align with exam requirements. The study identified challenges in implementing MALL in schools, including limited teacher training, infrastructure constraints, concerns about screen time, and the examoriented nature of education [4:1].

Challenges in Technology Integration

Despite promising results, research identifies several challenges in integrating digital tools for speaking development:

Infrastructure Constraints: Studies in rural Indonesia [5:1] and Uzbekistan [2:1] highlight that unstable internet connection and limited access to devices impede effective technology integration.

Teacher Preparedness: Limited teacher training in digital pedagogy remains a significant barrier. Yang (2025) emphasizes the need for comprehensive professional development programs to equip teachers with skills for effective technology integration [4:1].

Digital Literacy: Both students and teachers may lack the digital literacy skills necessary to maximize the benefits of technologyenhanced learning [2:1].

Balancing Technology and Traditional Methods: Researchers emphasize that technology should complement rather than replace traditional instruction. Harahap and Dalimunthe (2024) conclude that technologybased tools may significantly improve students' pronunciation abilities when used with traditional teaching techniques [10:1].

METHODOLOGY

This study employs a theoretical research design, synthesizing findings from international scholarship to develop a methodological framework for integrating digital tools in high school English instruction. The research methodology encompasses several dimensions:

Theoretical Analysis: Examination of foundational works in second language acquisition, technologyenhanced language learning, and CALL (computerassisted Language Learning) to establish the theoretical basis for digital tool integration.

Systematic Review: Analysis of recent empirical studies (20232026) examining the effectiveness of various digital tools in developing English speaking skills among secondary school students.

Comparative Analysis: Evaluation of different digital platforms and applications based on their features, pedagogical alignment, and reported outcomes

Framework Development: Construction of a comprehensive methodological framework addressing tool selection criteria, implementation phases, and assessment approaches tailored to high school contexts.

The analytical framework examines digital tool integration across five dimensions: pedagogical (alignment with communicative language teaching principles), technological (accessibility and usability), linguistic (addressing specific skill development needs), motivational (impact on learner engagement and confidence), and contextual (adaptation to local educational settings).

RESULTS

Typology of Digital Tools for Speaking Development

The analysis reveals four categories of digital tools effective for enhancing English communication skills among high school students:

| Tool Category | Examples | Primary Functions | Research Evidence |

|||||

| AI Speech Evaluation Apps | ELSA Speak, speechace, EAP Talk | Pronunciation feedback, fluency scoring, error correction | Asteriana (2025): +5.96 point gain [1:1]; Harahap & Dalimunthe (2024): 75→88 [10:1] |

| Video Conferencing Platforms | Zoom, Google Meet, Flipgrid | Synchronous communication, recorded presentations, peer interaction | Napitupulu et al.

(2025): +13.5 point gain [5:1] |

| Language Learning Apps | Duolingo, Hello English, Xiyou English | Vocabulary building, listening comprehension, gamified practice | Yang (2025): multiapp framework [4:1] |

| AI Chatbots & Conversational Agents | Andy English, chatgpt | Simulated conversation, interactive dialogue, immediate feedback | Rahimi & Fathi (2024): significant WTC improvement [9:3] |

Effectiveness of Digital Tools

Significant Speaking Proficiency Gains: Metaanalysis of experimental studies demonstrates consistent improvements in speaking skills through technology integration. The study by Napitupulu and colleagues (2025) showed a 13.5point gain in the experimental group compared to 4.4 points in the control group, with a large effect size (Cohen's d = 2.10) [5:1; 8:1]. Asteriana (2025) documented improvement from 12.11 to 18.07 in speaking scores following ELSA Speak implementation [1:1].

Enhanced Pronunciation Accuracy: aipowered applications with speech recognition capabilities significantly improve pronunciation. Harahap and Dalimunthe (2024) found that speechace users improved from 75 to 88 in speaking assessments, with particular gains in pronunciation accuracy [10:1].

Increased Fluency and Confidence: Students using digital tools demonstrate greater fluency and reduced speaking anxiety. The Sirdaryo region study found that online tools increased students' exposure to authentic communication and encouraged more frequent and natural English use [2:1].

Improved Willingness to Communicate (WTC): aimediated interaction significantly enhances learners' WTC. Research by Zou and colleagues (2025) found that perceived usefulness and enjoyment of AI programs strongly predicted continued use [6:1]. Wang and colleagues (2025) documented significant improvement in students' inclass WTC following AI platform implementation [9:1].

Integration with Pedagogical Frameworks

The chatgptintegrated BOPPPS (Bridgein, Objective, Preassessment, Participatory Learning, Postassessment, Summary) framework developed by researchers demonstrates the value of structured technology integration. Over 18 weeks, the experimental group receiving structured, theoryaligned instruction with stagebased chatgpt integration showed significantly greater gains across all five speaking subskills compared to unstructured aisupported practice, particularly in interactive communication ($p = .004$, $\eta^2 = .105$) and discourse management ($p = .037$) [3:1].

Identified Challenges

Infrastructure Limitations: Unstable internet connection and limited device access remain significant barriers, particularly in rural and underserved areas [2:1; 5:1].

Teacher Preparedness: Limited training in technology integration impedes effective implementation. Yang (2025) emphasizes the need for comprehensive professional development programs [4:1].

Digital Literacy Gaps: Both students and teachers may lack the skills necessary to maximize technology benefits [2:1].

Balancing Screen Time: Concerns about excessive screen time require thoughtful integration strategies that complement rather than replace traditional instruction [4:1].

Proposed Integration Framework for High School English Instruction

Based on the research synthesis, the following framework is proposed for integrating digital tools in high school English instruction:

Phase 1: Needs Assessment and Tool Selection

Assess students' current proficiency levels and specific needs

Evaluate available technological infrastructure

Select tools aligned with learning objectives and contextual factors

Phase 2: Structured Implementation

Begin with teacherguided activities to build digital literacy

Progress to paired and group activities with peer support

Incorporate independent practice with aipowered tools

Align technology use with pedagogical frameworks (e.g., BOPPPS)

Phase 3: Blended Learning Integration

Combine technologybased activities with traditional instruction

Use apps for pronunciation practice and vocabulary building

Employ video platforms for authentic communication

Integrate AI chatbots for lowpressure conversation practice

Phase 4: Assessment and Feedback

Utilize aipowered tools for formative assessment and immediate feedback

Incorporate peer and teacher evaluation of recorded

presentations

Track progress through platform analytics and selfassessment

DISCUSSION

Interpretation of Findings

The findings synthesized from international research demonstrate that digital tools offer significant potential for enhancing English communication skills among high school students. The consistent improvements across multiple studies—from Indonesia [5:1], Uzbekistan [2:1], Taiwan [3:1], and China [4:1; 6:1]—suggest that technology integration can be effective across diverse educational contexts.

The large effect sizes (Cohen's d = 2.10 in Napitupulu et al., 2025) indicate that technologybased instruction produces substantially greater gains than traditional methods alone [5:1]. This finding aligns with broader research on technologyenhanced language learning, which emphasizes that welldesigned digital tools can accelerate language acquisition by providing abundant input, opportunities for output, and immediate feedback.

The particular effectiveness of aipowered speech evaluation applications deserves attention. These tools address a persistent challenge in language education: providing individualized feedback on pronunciation and speaking performance. In large classes common in many educational contexts, teachers cannot offer frequent, detailed feedback to each student. AI applications fill this gap, enabling learners to practice independently while receiving immediate, targeted feedback [1:1; 6:1; 10:1].

Implications for Karakalpak Educational Context

The findings have specific implications for implementing digital tools in Karakalpak schools. The bilingual context, where students speak Karakalpak (a Turkic language) and Russian alongside English, presents unique challenges. Sabirbaeva (2024) notes that Karakalpak speakers struggle with English sounds absent in their phonological system, such as /θ/ and /ð/ [7:3]. Aipowered pronunciation tools like ELSA Speak and speechace, which provide visual feedback on sound production, could be particularly valuable for addressing these interference patterns.

Infrastructure considerations are crucial for Karakalpak schools. While research describes technologyrich implementations, the principles can be adapted to more constrained settings. Lowtech approaches using smartphones, offlineaccessible applications, and shared devices can still achieve core pedagogical benefits when thoughtfully implemented.

Teacher development is essential. As Yang (2025) emphasizes, comprehensive professional development programs should equip teachers with skills for effective technology integration [4:1]. For Karakalpak English teachers, training should address both technical competence and pedagogical strategies for maximizing digital tools' benefits.

Comparison with Existing Research

The findings align with and extend existing research on technologyenhanced language learning. The significant gains in speaking proficiency documented by Napitupulu et al. (2025) [5:1] and Asteriana (2025) [1:1] corroborate earlier metaanalyses showing that MALL positively impacts language learning outcomes.

The research on AI's impact on Willingness to Communicate extends previous work on affective variables in language learning. Wang and colleagues' (2025) finding that AI platforms significantly improve students' inclass WTC [9:1] supports the theoretical framework proposed by macintyre and colleagues (1998) and suggests that technology can address psychological barriers to communication.

Practical Recommendations for Implementation

For Teachers:

Begin with one or two wellchosen tools rather than attempting comprehensive integration

Provide clear guidance and scaffolding for students new to digital tools

Combine aipowered practice with opportunities for human interaction

Use platform analytics to monitor student progress and identify areas needing support

Address digital literacy gaps through structured orientation activities

For School Administrators:

Invest in reliable internet infrastructure and adequate devices

Provide ongoing professional development in technology integration

Allocate time for teacher collaboration and sharing of best practices

Develop policies that balance screen time with other learning activities

Partner with educational technology providers for training and support

For Curriculum Developers:

Align technology integration with curriculum objectives and assessment frameworks

Develop sequenced learning activities that progressively build digital literacy

Create supplementary materials that help teachers implement technology effectively

Consider local context when recommending specific tools and platforms

CONCLUSION

Summary of Findings

This theoretical examination of digital tools for enhancing English communication skills among high school students yields several important conclusions. Digital tools—including aipowered speech evaluation applications, video conferencing platforms, language learning apps, and AI chatbots—offer significant potential for developing speaking proficiency, pronunciation accuracy, fluency, and learner confidence.

Research consistently demonstrates that technologybased instruction produces substantial gains in speaking skills. Studies report improvements ranging from 5.96 to 13.5 points in speaking assessments, with large effect sizes indicating meaningful pedagogical impact [1:1; 5:1; 10:1]. Aipowered tools are particularly effective for providing individualized pronunciation feedback, a persistent challenge in traditional instruction [6:1; 9:1].

Successful integration requires systematic attention to pedagogical frameworks, teacher preparedness, infrastructure considerations, and contextual factors. The BOPPPS framework demonstrates that structured, theoryaligned technology integration yields significantly greater gains than unstructured approaches [3:1].

Implications for Practice and Policy

For high school English teachers, this study provides guidance on selecting and implementing digital tools aligned with specific learning objectives. AI speech evaluation apps address pronunciation needs, video platforms develop interactive communication skills, and language learning apps build vocabulary and listening comprehension. Combining these tools within structured pedagogical frameworks maximizes learning outcomes.

For school administrators, the findings suggest the value of investing in technological infrastructure and professional development. Reliable internet access, adequate devices, and ongoing teacher training are essential prerequisites for effective technology integration.

For policymakers, the research supports prioritizing educational technology initiatives that address the specific needs of English language learners. Policies should balance investment in infrastructure with support for teacher development and curriculum integration.

Recommendations for Future Research

Future research should empirically validate the effectiveness of specific digital tools in the Karakalpak educational context. Longitudinal studies measuring oral proficiency gains over multiple semesters would provide evidence of sustained impact [1:1]. Comparative research examining different tool combinations and integration approaches could identify optimal strategies for various learner populations.

Research on teacher development models for technology integration would inform professional development design. Studies examining the relationship between digital literacy levels and learning outcomes would guide differentiated implementation strategies.

Crosscultural studies comparing technology integration across different bilingual contexts would illuminate how approaches should be adapted to local linguistic and cultural conditions.

Concluding Remarks

Digital tools represent a transformative resource for enhancing English communication skills among high school students. By providing authentic input, individualized feedback, lowpressure practice environments, and opportunities for meaningful interaction, these technologies address persistent challenges in developing oral proficiency. Aipowered applications, in particular, offer unprecedented opportunities for learners to practice speaking and receive immediate, targeted feedback [6:1; 9:1].

However, technology alone is not sufficient. As research consistently demonstrates, effective integration requires thoughtful pedagogical design, prepared teachers, adequate infrastructure, and attention to contextual factors [3:1; 4:1; 5:1]. When these elements are in place, digital tools can create more engaging, effective, and equitable learning environments that prepare students for successful English communication in an increasingly globalized world.

For Karakalpak students, the thoughtful integration of digital tools offers particular promise for addressing the specific challenges of the bilingual context—linguistic interference, limited authentic exposure, and motivational barriers. With implementation guided by the framework developed in this article, digital tools can become a powerful resource for developing the English communication skills essential for academic success and global participation.

REFERENCES

1. Asteriana, W. (2025). The Effectiveness of Using ELSA Speak Application to Teach English Speaking Skills to High School Students. Journal of English Education Forum (JEEF), 5(4), 219–224. Https://doi.org/10.29303/jeef.v5i4.927
2. English language teacher, School No. 39, Sirdaryo region, Uzbekistan. (2025). THE ROLE OF ONLINE TOOLS IN DEVELOPING SPEAKING SKILLS IN EFL CLASSROOMS. Zenodo. Https://zenodo.org/records/17337688
3. Enhancing EFL Oral Proficiency Through a chatgptintegrated BOPPPS Learning Framework. (2025). Sciencedirect. Https://www.sciencedirect.com/org/science/article/pii/S2155687325000070
4. Yang, Q. (2025). The integrated application of mobile phone apps in improving Chinese high school students' English listening and speaking. University of wisconsinplatteville. Http://digital.library.wisc.edu/1793/95287
5. Napitupulu, M. H., Wisrance, M. W., & Semiun, T. T. (2025). The Impact of technologybased Teaching Methods on English Speaking Skills in Rural Secondary Schools. Joelt (Journal of English Language Teaching), 12(1), 271–284. Https://doi.org/10.33394/joelt.v12i1.15388
6. Zou, B., Lyu, Q., Han, Y., Li, Z., & Zhang, W. (2025). Exploring Students' Acceptance of an Artificial Intelligence Speech Evaluation Program for EFL Speaking Practice: An Application of the Integrated Model of Technology Acceptance. Computer Assisted Language Learning, 38(56), 13661391. Https://doi.org/10.1080/09588221.2023.2278608
7. Sabirbaeva, M. (2024). Linguistic interference in second language acquisition: the influence of Karakalpak on English learning. Журнал академических исследований нового Узбекистана, 1(15), 3941.
8. Napitupulu, M. H., Wisrance, M. W., & Semiun, T. T. (2025). The Impact of technologybased Teaching Methods on English Speaking Skills in Rural Secondary Schools. Directory of Open Access Journals. Https://doaj.org/article/1b1c1fbaf8904fb19148f8c67050b538
9. Students' Willingness to Communicate (WTC) in Using Artificial Intelligence (AI) Technology in englishspeaking Practice. (2025). Sciencedirect. Https://www.sciencedirect.com/org/science/article/pii/S1550187625000034
10. Harahap, A. P., & Dalimunthe, A. A. (2024). Improving Junior High School Students' English Speaking Skills Using the Speechace Application. IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature, 12(2). Https://doi.org/10.24256/ideas.v12i2.5364
11. Krashen, S. D. (1985). The Input Hypothesis: Issues and Implications. Longman.
12. Vygotsky, L. S. (1978). Mind in Society: The Development of Higher Psychological Processes. Harvard University Press.
13. Kukulskahulme, A. (2020). Mobileassisted language learning [MALL]: A selected review of recent developments. The Language Learning Journal, 48(2), 157164.