

HOW AI PRACTICE IMPROVES SPEECH

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Abstract. This article examines the topic “How AI Practice Improves Speech” and scientifically analyzes the impact of artificial intelligence on speech development, pronunciation correction, communication skills development, and language learning. Today, AI technologies - virtual interlocutors, chatbots, voice analysis platforms, automatic pronunciation checkers, and real-time echo systems - serve as effective tools for speech development. AI systems automatically detect grammatical errors, pronunciation errors, intonation, and rhythm problems in a student’s speech, immediately offer the correct option, and create individual exercises. This process allows students to practice more, learn independently, and consistently improve their speech. At the same time, AI-based speech simulators create a communication environment close to real life for those learning a foreign language. The article extensively discusses the impact of AI on speech development, its advantages, practical examples, efficiency factors and limitations. The results of the study show that AI technologies can significantly improve speech skills in a short time.

Keywords: speech technologies, artificial intelligence, pronunciation, audio analysis, communication skills, language learning, AI chatbots, voice interfaces, linguistic analysis, speech development.

Speech is the main tool of human communication, playing a key role in the exchange of knowledge, expression of opinions, interaction and social integration. In today's global world, speech culture, fluency, correct pronunciation and effective communication skills are the key to success in every field. Especially for foreign language learners, the importance of forming correct pronunciation, grammatical accuracy and speech speed is increasing.

Traditional methods – practice with a teacher, listening and repetition, dictation, dialogues – although effective, are time-consuming and remain the same for everyone. However, in recent years, the development of artificial intelligence (AI) technologies has radically changed the process of teaching speech. AI-based audio analysis platforms, chatbots, virtual interlocutors and real-time echo systems have made speech development much easier through an individual approach, instant analysis and unlimited training opportunities.[2]

This article scientifically examines how AI practice develops speech, its functions, advantages, areas of application, limitations and strategic importance in the language learning process.

Artificial intelligence analyzes sound signals down to the level of phonemes. It detects errors in pronunciation:

sound length,

stress,

rhythm,

intonation,

phonetic defects,

regional accents in pronunciation.[5]

For example, in English, the words “ship” and “sheep” are pronounced similarly, but the AI system detects their phonetic difference and immediately warns the user. This feature increases the phonetic sensitivity of the reader.

AI measures the speed of a person’s reading, pauses, and the changing rhythm of speech. Speech that is too fast or too slow can distract the listener. AI provides instructions on how to adjust the rhythm to the optimal state.

AI tools such as ChatGPT, Grammarly, QuillBot check the text for grammar. However, there are also systems that analyze speech in real time. They detect grammatical errors:

verb tense errors,
word order errors,
concordance errors
and suggest corrections.[3]

AI chatbots invite the reader to a conversation that resembles a real conversation. They:

ask questions,
evaluate the answer,
change the context,
expand the topic of the conversation.

This process allows the student to prepare for real-life situations.

During the conversation, AI immediately gives feedback on:

grammatical accuracy,
pronunciation,

logical sequence,

speech fluency.

Many students are shy about speaking a foreign language. AI interlocutors create a “psychologically safe” environment. The student practices without fear of making mistakes.

Programs such as Speechify, Elsa Speak, and Google Speech Recognition deeply analyze speech.

AI identifies phonetic defects in terms of:

frequency,

amplitude,

pitch,

vibration

of the sound and provides individual exercises.[4]

Sounds such as “th”, “r”, and “l” in English are difficult for many students. AI: shows exercises on the movements in the oral cavity of the pronunciation sample.

AI-based exercises eliminate students' psychological barriers.

AI assesses each student's speech level individually and adjusts the curriculum.

AI works 24/7. The student can practice at any time.

A traditional teacher cannot give such a quick assessment.

The most important factor in developing speech is a lot of practice. AI fully provides this opportunity.

AI assesses without emotional influence, based only on analysis.

AI cannot yet fully understand emotions like a human.

Some platforms requires stable internet.

Over-reliance on AI can reduce human-to-human communication.

Some subtle phonetic differences can be misjudged by AI.

AI will in the future:

detect the mood,

mental state,

level of confidence in the voice and adjust the training.

Personal AI teacher. AI will become an individual voice trainer for each student.

VR and AR speech labs. Virtual reality fully simulates the speech environment.[5]

In short, Artificial Intelligence practice is highly effective in developing speech skills. It improves students' pronunciation, grammar, rhythm, intonation and fluency in a short time through individual, interactive, impartial and unlimited practice opportunities. AI technologies are a powerful assistant not only for language teachers, but also for speech therapists in eliminating speech defects. In the future, AI will be further improved and will play an important role in the global education system.

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