APPLICATION OF DIGITAL TECHNOLOGIES TO IMPROVE SPEECH TECHNOLOGIES

Sh.A.Abduraxmanova *- Tashkent State Pedagogical Nizami University, Associate Professor, PhD, Head of the Department of Information Technologies*

email : ashahnoza_78@mail.ru

S.A.Saydivosilov *- Student of the direction "Digital Economy" of the Tashkent University of Information Technologies named after Muhammad al-Khwarizmi, Tashkent.*

Modern society poses an important task to the education system - to prepare students with hearing loss for certain life skills in the digital age. In this regard, special attention is paid to school age, which is an important stage of the lifelong education system in Uzbekistan. The article discusses the problem of using digital technologies in the development of speech technologies for people with hearing impairment or deaf people [1].

Summarizing and systematizing the state and trends in the development of digital and service systems and taking into account the important tasks in the modern information society of overcoming unequal access to information for various segments of the population, a concept is proposed for attracting modern speech, digital and telecommunication technologies to create new interfaces for accessing data and services, in including remote ones. The implementation of this concept will lead to the introduction into practice of speech portals and self-service telephone services based on speaker-independent recognizers and computer telephony tools [2,3].

Companies that work with a large number of clients and want to implement new interface technologies are primarily interested in using computer speech recognition. Among these companies:

- Service Centre;
- telecommunications operators, cellular operators, Internet providers;
- information services at train stations and airports, ticket booking and taxi services;
- government agencies, e-government services;
- banks, large financial institutions, insurance companies;
- various reference and consulting services;
- travel companies;
- large retail enterprises, shops, order delivery services [2].

Here, economy and customer convenience come to the fore everywhere. A separate area of application of speech technologies is the needs of people with disabilities. For such people, speech technologies make it possible to create services that will help them receive information, education, professional knowledge and successfully integrate into social and work life [4].

In the West, self-service telephone services have become quite widespread, and this market is developing successfully. Thus, according to BCC Research, a company specializing in market research and forecasting the success of the implementation of new technologies, the speech recognition technology market will grow by 12.1% annually between 2010 and 2015. The market size in 2023 is estimated at 184.9 million US dollars. The projected annual growth in sales of software, both basic and applied, is estimated at 8.6 %, the same figure for hardware - at 10.8% [5,6].

The most effective way to teach correct speech to people with hearing impairments is classes with experienced teachers of the deaf. Advances in the development of computer technology have led to the emergence of computer simulators to help people with articulation and hearing impairments. This is facilitated by the presence of a visual feedback function in such simulators, which is especially important for hard of hearing and deaf people [7,8,13].

The principle of operation of the simulators is the spectral transformation of the input audio signal, identifying its characteristics, comparing with the standard

and returning and presenting the result. A number of simulators use automatic speech recognition systems to analyze the source signal. But all of these products were stand-alone software that must be purchased and installed on the user's computer [6,8,14].

Placing such programs on the Internet and providing online access to them would significantly increase the number of people who have the opportunity to independently train the correct pronunciation of sounds, syllables, words and phrases from home computers. For these purposes, work has begun on creating platforms “Uzbekistan sign language (USL)” for the project “Development of a linguistic dictionary of the Uzbek sign language based on the grammar of the Uzbek language and the dactylic alphabet based on the Latin alphabet” [11,12]

Speech technologies have not yet become widespread in Uzbekistan. The following reasons are the most significant to explain this lag:

- the absence on the market until recently of reliable recognizers for the Uzbek sign language based on the Latin alphabet, aimed at use in public service centers;
- lack of tradition among the population of communicating with automated systems;
- distrust of information and service providers in the reliability of new technology;
- low cost of operator labor.

Thus, the creation of the platform “Uzbekistan sign language (USL)” will provide new opportunities for students with hearing disabilities to learn Uzbek sign language based on the Latin alphabet.

Bibliography

1. Saydivosilov, S. (2023). Training of qualified specialists in the conditions of digitalization of education. Modern trends in innovative development of science and education in a global world, 1(4). https://doi.org/10.47689/STARS.university-pp66-69

2. Mamarajabov Odil Elmurzaevich, Akhmatov Eldor Umar ugli, Creating an electronic textbook on computer science in the autoplay program , E Conference World: No. 2 (2023): Switzerland

3. Elmurzayevich, Mamarajabov O. "Cloud Technology to Ensure the Protection of Fundamental Methods and Use of Information." International Journal on Integrated Education, vol. 3, no. 10, 2020, pp. 313-315, doi:10.31149/ijie.v3i10.780.

4. Ilyich, M. E. (2023, November). Aspects of improving the education system in technological universities. In E Conference World (No. 2, pp. 128-137).

5. Ilyich, M. E. (2023). Big data analysis in education. World Bulletin of Management and Law, 23, 74-76.

6. Bagbekova, L. (2019). Opportunities of massive open online courses. European Journal of Research and Reflection in Educational Sciences Vol, 7(12).

7. Kadirbergenovna, B. L. (2019). The importance of independent education in education system. Педагогика ва психологияда инновациялар, (5).

8. Urokova Sharofat. (2023). Digitalization of education at the present stage of development. World Bulletin of Management and Law, 23, 60-63. Retrieved from https://scholarexpress.net/index.php/wbml/article/view/2873

9. Sharofat, O. R. (2023, May). Electronic learning resources and requirements for their creation. In International Scientific and Practical Conference on Algorithms and Current Problems of Programming.

10. Bakiyeva, Z. (2022). Teaching the steps of creating animation to students in higher education institutions. Академические исследования в современной науке, 1(17), 226-227.

11. Bakiyeva, Z. R. (2022). Teaching computer animation to students through an electronic learning platform. Journal of Integrated Education and Research, 1(6), 26-28.

12. Abduraxmanova Shaxnoza Abduxakimovna, & Saydivosilov Saidiabzal Anvar ugli. (2023). The need to develop the digital technology skills of future computer science teachers in Uzbekistan. *World Bulletin of Management and*

Law, *23*, 64-67. Retrieved from https://scholarexpress.net/index.php/wbml/article/view/2874

13. Saidiabzal, S. (2023). Comparative analysis of programming languages used in education. *образование наука и инновационные идеи в мире*, *22*(1), 151-153.

14. Saydivosilov, S. (2022). Training of qualified specialists in the conditions of digitalization of education. *Современные тенденции инновационного развития науки и образования в глобальном мире*, *1*(4).

ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ ИСПОЛЬЗОВАНИЯ РЕЧЕВЫХ ТЕХНОЛОГИЙ НА ОСНОВЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ

Ш.А.Абдурахманова *- Ташкентский государственный педагогический университет имени Низами, доцент, PhD, заведующая кафедрой Информационные технологии*
email: ashahnoza_78@mail.ru

Аннотация: *В данной статье рассматриваются способы повышения эффективности использования речевых технологий на основе цифровых технологий. Это обеспечит новый уровень предоставления цифровых услуг населению и организациям в режиме самообслуживания, а также повысит эффективность использования речевых технологий для людей с нарушениями слуха.*

Ключевые слова: *речевые технологии, цифровые технологии, речевые порталы, человеко-машинные системы.*

Быстро развивающиеся информационные и телекоммуникационные технологии проникают во все сектора экономики: в производство, в сферу услуг, в образование, в государственное управление, банковскую сферу, в частный бизнес и др. Наблюдается тенденция к социализации информации - нарастанию количества информации, которая необходима людям в их