

SURDOWAY.UZ EDUCATIONAL PLATFORM AS A DIGITAL TOOL FOR TEACHING LATIN-BASED FINGERPRINT AND SIGN LANGUAGE

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Abstract

This article analyzes the Surdoway.uz educational platform, designed to teach people with hearing impairments the Latin-based fingerspelling alphabet and elements of sign language. The paper examines the platform's key features, including interactive learning modules, video materials, and a visually oriented interface that ensures accessibility for hard-of-hearing and deaf users. The study's findings demonstrate that Surdoway.uz promotes the development of communication skills, increases the accessibility of inclusive education, and integrates modern approaches to sign language teaching in a digital environment.

Keywords: Surdoway.uz, educational platform, fingerspelling alphabet, sign language, inclusive education, digital learning.

Introduction

Modern society faces the need to integrate people with disabilities into educational and professional settings. Among various forms of disability, hearing impairments receive particular attention, as they significantly impact communication, information acquisition, and cognitive development. According to the World Health Organization, more than 430 million people worldwide have varying degrees of hearing impairment, and this figure continues to grow given demographic changes and environmental factors [10]. In such circumstances, effective instruction in sign language and fingerspelling is becoming not only a social but also an educational priority.

The development of digital technologies opens up new opportunities for addressing inclusive education. Online platforms, interactive applications, and multimedia resources make it possible to create adapted educational environments that take into account the individual needs of deaf and hard of hearing users. These technologies facilitate the development of skills necessary for independent living, professional activity, and social integration [8]. An important aspect is the ability to combine theoretical learning with practical assignments, which ensures deeper assimilation of the material and active involvement of students in the process. Digital technologies create new opportunities for increasing accessibility of education for people with



hearing disabilities [2]. Despite the development of deaf education, many educational resources remain difficult for independent mastery, especially in the area of sign language and fingerspelling. Decree No. PD-407 of the President of the Republic of Uzbekistan dated October 21, 2022, provides for the development of the scientific basis for Uzbek sign language and the Latin-based dactylic alphabet, as well as the widespread use of modern information technologies and innovative methods in the educational process.

The Surdoway.uz platform is an innovative project aimed at teaching people with hearing impairments the Latin-based fingerspelling alphabet and sign language. The platform's primary goal is to create a visually interactive environment where users can systematically learn the alphabet and sign language, complete practical exercises, and track their progress. The accessible interface, multimodality, and integration of various learning formats make Surdoway.uz a valuable tool in the context of inclusive education and digital pedagogy [6].

Methods

Modern research demonstrates that the use of digital technologies in teaching individuals with hearing impairments improves learning and promotes the development of cognitive and communicative skills. For example, studies by Marschark and Spencer [4] and Woll and Sutton-Spence [9] demonstrate that the integration of visual learning tools and interactive modules significantly improves the acquisition of sign language and fingerspelling. An analysis of modern sign language learning platforms shows that successful solutions are characterized by a consistent content structure, adaptability to the user's level, and the ability to provide feedback, creating a holistic educational environment and ensuring a high level of motivation.

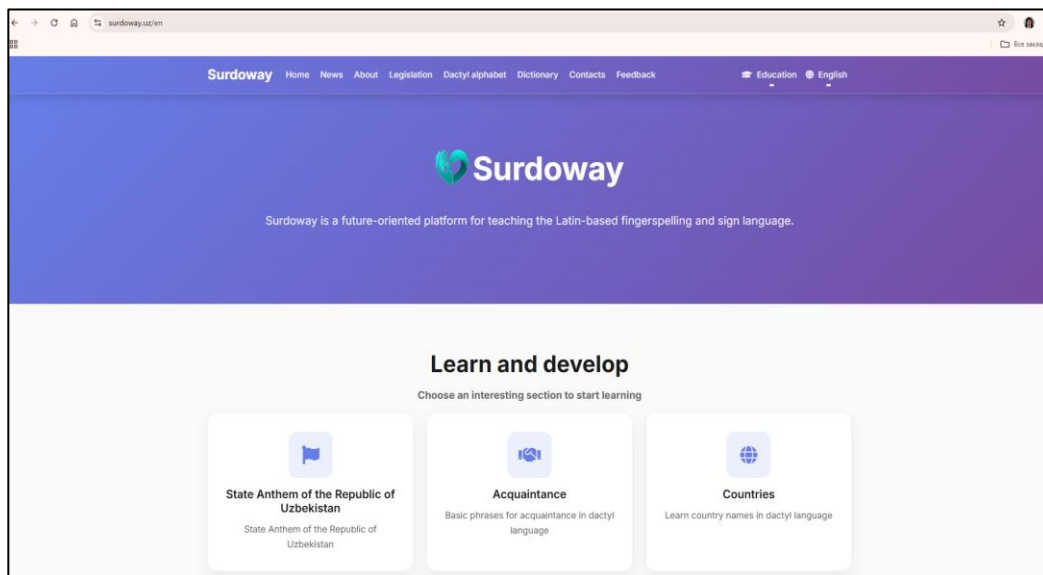


Figure 1. Surdoway.uz program interface

In the context of Uzbekistan, accessibility of educational resources for people with hearing impairments remains limited, creating a need for local digital platforms adapted to national standards and language. Surdoway.uz is an example of such an initiative, combining

methodological consistency, creative thinking, and digital learning tools into a unified educational ecosystem. The platform aims to develop sustainable sign language skills, supports independent learning, and promotes the social integration of hard-of-hearing and deaf users [3]. The study was based on the following methods:

Descriptive analysis allowed for a detailed examination of the platform's structure and functionality. This method included an analysis of:

the platform's navigation and interface, as well as its usability for hard of hearing and deaf users;

the substantive structure of the educational modules (videos, animations, text, and visual materials);

the accessibility and consistency of material delivery, and compliance with inclusive learning principles;

interactive elements such as quizzes, assignments, and exercises for skill reinforcement [7].

This method provided a systematic understanding of how the learning process was implemented and how it met the needs of the target audience.

A comparative analysis was used to compare Surdoway.uz with similar international platforms and software solutions for teaching sign language and fingerspelling.

Key aspects of the analysis:

- the presence of interactive learning modules;
- gesture visualization and animation methods;
- methods for assessing learning (tests, assignments, feedback);
- content structure and logical learning sequence;
- the ability to integrate creative and methodological approaches.

The comparison allowed us to identify the platform's strengths, its unique features, and areas for improvement [5].

Results

The analysis revealed the following key features of the platform:

- latin-based dactyl alphabet learning through interactive visual materials;
- the platform provides sequential interactive modules aimed at learning the latin-based dactyl alphabet;
- visual flashcards, animations, and videos are used to demonstrate the correct formation of gestures;
- users can replicate movements and receive feedback through interactive tasks;
- the modules are structured so that learners gradually progress from simple letters to more complex combinations, ensuring thorough learning.



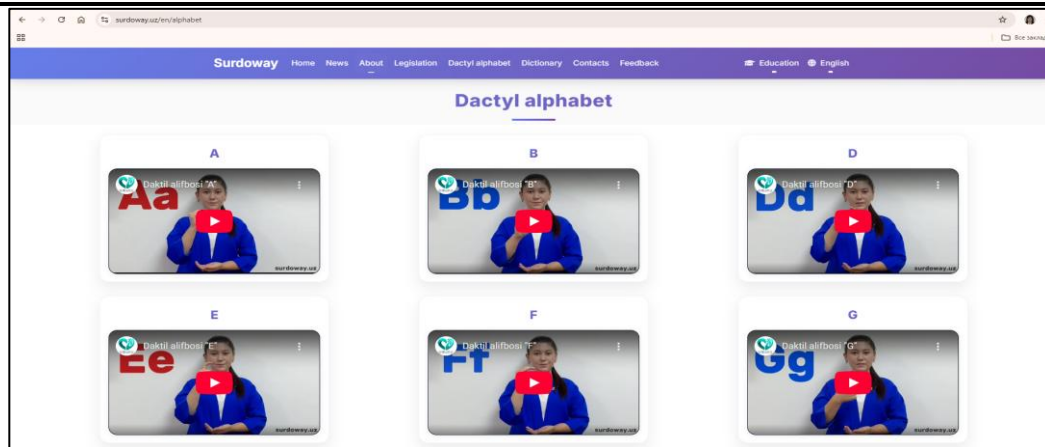


Figure 2. Representation of the dactylic alphabet on the Surdoway.uz platform

This feature is the platform's core educational component, developing basic reading and writing skills for hard-of-hearing and deaf users.

Surdoway.uz contains videos and animations demonstrating the basic elements of sign language:

- gestures used in everyday communication, greetings, and emotional expressions;
- phrases and sentences that can be used in real-life communication;
- the opportunity to practice gestures in interactive exercises with step-by-step instructions.

This approach promotes the development of communicative competence, allowing users to apply their knowledge in practice and expand their ability to communicate independently.

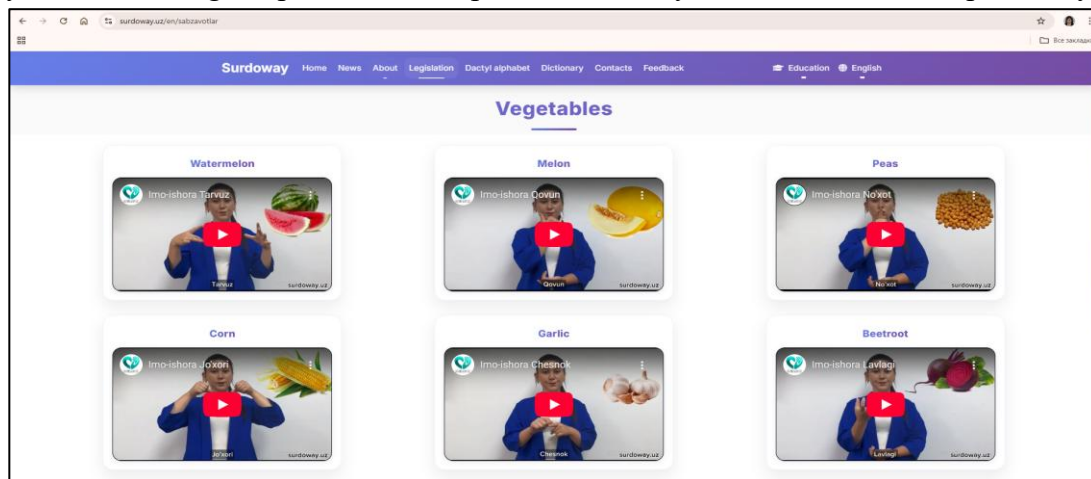


Figure 3. Representation of sign language on the Surdoway.uz platform

Surdoway.uz serves an important social function:

- it creates a space for the exchange of knowledge and experience among users;
- it promotes the development of communication skills and social integration;
- it expands access to education for hard-of-hearing and deaf users in Uzbekistan, where specialized resources are limited.

Using the platform promotes not only educational but also social adaptation, increasing the level of user independence.



Conclusion

The results of the Surdoway.uz platform study demonstrate its high potential as an inclusive education tool for people with hearing impairments. Interactive modules, visual animations, and structured finger-tapping instruction create conditions for consistent and systematic learning, confirming the platform's effectiveness as an educational resource.

Analysis shows that the integration of methodological approaches and creative activities is a key factor in successful learning. Users not only memorize symbols and gestures but also actively engage in the process, developing creative thinking, visual memory, and the ability to independently solve problems. This approach is consistent with modern research in the fields of deaf education and cognitive psychology, which emphasize the importance of combining theoretical and practical learning with elements of creativity [4].

A comparison with international sign language learning platforms revealed that Surdoway.uz offers a unique combination of features: consistent presentation of material, interactive exercises, and the integration of creative tasks. This makes the platform particularly useful for developing sustainable skills and independent learning.

In addition to its educational value, the platform has significant social significance. It promotes communication skills, facilitates the exchange of experiences between users, and facilitates the integration of people with hearing impairments into the educational and social sphere. Thus, Surdoway.uz serves not only an educational but also a social and pedagogical function, which is particularly important given the limited resources available for specialized education in Uzbekistan.

The study's findings confirm that digital platforms can significantly improve the quality of inclusive education and develop cognitive and communication skills in deaf and hard of hearing users.

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