



## Research Article

# USE OF COMPUTER TECHNOLOGIES IN WORK WITH CHILDREN WITH SPEECH DISORDERS

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## ABSTRACT

The article reveals the options for using computer technology in speech therapy practice. Playing techniques and methods of working with children with speech disorders are analysed. Interactive corrective games used in working with children with speech disorders are reviewed.

## KEYWORDS

children with speech disorders, computer technology, sound pronunciation, speech breathing, voice.

## INTRODUCTION

Perspective computer technologies used in work with children with speech disorders are gaming computer technologies. There are several key areas of work with progressive speech therapy technologies:

- correction of sound pronunciation, speech breathing and voice (working out diaphragmatic breathing, working out nasal inhalation and oral exhalation, working out a smooth long oral exhalation, correction of nasal, as well as pharyngeal, clicking, "croaking",



wheezing and other overtones, the formation of the ability to change the strength of the voice, work on verbal and logical stress, correction of defective pronunciation of sounds);

- the formation of phonemic perception (organization of work on the differentiation of consonants in place and method of pronunciation, in terms of hardness-softness);

- teaching literacy (development of skills in sound-letter and syllabic analysis and synthesis; exercises to form the optical contour of a letter and create a stable image of a letter and syllable; correction of reading disorders, especially in those cases when a child has difficulty forming the process of reading syllabic stereotypes);

- the formation of the lexical and grammatical side of speech (the formation of a generalized lexical, grammatical and morphological meaning of a word, the classification of words according to lexical and grammatical groups, the formation of the grammatical structure of speech, the accumulation of lexical stock);

- the formation of a coherent statement (the formation of the skill of adequate perception of the text, the formation of the skill of constructing a coherent statement, etc.);

- formation and correction of reading skills (formation of a verbal guess, formation of sound-letter grammatical generalizations) [2; 3; four].

### THE MAIN RESULTS AND FINDINGS

The specialized computer speech therapy program "Games for Tigers" is designed to correct speech disorders in the erased form of dysarthria. The program allows you to work effectively with children

with other primary speech disorders within the framework of dyslalia, alalia, rhinolalia, stuttering, as well as with children with secondary speech disorders. Excellent drawings, three-dimensional image, sound accompaniment of actions, cognition of exercises and a cheerful presenter Tiger cub - all this makes the program attractive for children with speech disorders. The use of the "Games for the Tiger" program makes the process of corrective and developmental work of speech more effective and dynamic, compared to traditional methods, since the tasks in it are presented in a playful, interactive form [2, 33c].

Speech therapy simulator "Delfa" ("Delfa-142.1") is a new program for the development of speech breathing, correction of voice power, correction and automation of pronunciation of vowels and consonants, correction of pronunciation, elimination of nasal tone of voice. It includes improved variants of exercises of the Delfa-130 Deaf and Speech Simulator and new modules that expand the functionality of the product. This is a program for the correction of oral and written speech, which allows you to work with any speech units from sound to sentences and solve various tasks for the development of speech. The methodology is based on an individual approach, playing techniques, the possibility of repetition, the use of various stimulus material (pictures, sounding and written speech). This simulator provides a comprehensive program of work on oral and written speech, including work with connected text. Texts for retelling are organized by difficulty levels, questions and key words are selected [3].

The software and hardware complex "Visible Speech" is a program for visual control of speech for speech therapy practice. This program is designed not only for people with speech disorders, but also allows you to effectively train in owning your own voice, in



expressive reading, making speeches, singing; helps to get rid of the dialect, to acquire the ability to speak in a special manner. The key value of the software package is to work on the following aspects of speech: the presence or absence of voice; sound intensity, syllable stress; voice pitch and voice modulations; correct pronunciation of vowel sounds; duration and continuity of the pronunciation of a sound, syllable, word, short phrase; the rate of pronunciation of speech material. The Visible Speech program includes 13 modules that allow you to control not only the pronunciation of all sounds in isolation, but also to train in the pronunciation of their combinations, due to the fact that work is supported on syllables, syllables and short words. All types of exercises are supplemented with game plots and original graphics, so each exercise appears on the screen as a short cartoon. The main difference between this software and others is the ability to qualitatively analyze your own "sound". The finale of the successful completion of the exercise looks different: the funny characters laugh pretty, hide in houses, apples fall into the car, joyful beeps, locomotive whistles are heard, musical phrases sound, etc. [3]

The software and didactic complex "Logomer" presents 90 interactive games for children with speech disorders. Interactive games designed for children aged 2-10 through fairy tales and bright characters motivate children to study. The Logomer complex contains games and exercises in the main areas of speech therapy and correctional classes with children of preschool and primary school age: sound pronunciation, phonemic perception, lexical and grammatical categories and general development. This software and didactic complex includes a program for creating manuals "Picture Constructor" [7].

The speech therapy complex "Speech Kaleidoscope" is designed for setting and automating sounds, working on breathing, voice formation. This complex can be used in working with children with various speech disorders of preschool and primary school age. In the "Speech Kaleidoscope" there are ample opportunities for using the complex in working on pronunciation: on breathing, voice, intonation, tempo, verbal and logical stress, and speech sounds such as vowels, diphthongs and consonants, except for plosives and affricates. There are 4 groups of modules in the program of the computer complex: Group I is designed to work on breathing and voice; Group II - to work on the sounds of speech; Group III - to work on pronunciation in general; Group IV - for the development of auditory perception and auditory control over one's own speech. This complex can be used at different stages of the formation of the pronunciation side of speech. The Speech Kaleidoscope speech therapy complex is available in a mobile version, equipped with an external HDD-case, with installed software and there are connectors for connecting peripheral devices (monitor, keyboard, microphone, audio speakers). As a monitor, you can use either a regular monitor or a TV with a VGA input [5].

The program "Development of speech. Learning to Speak Correctly" is designed to work with children of senior preschool (from 5 years old) and primary school age as a guide for speech development and teaching reading, as well as for correctional and developmental work with children with speech disorders. The program includes four sections: 1-non-speech sounds (acquaintance with the sounds of the objective world: musical instruments, transport, household appliances, etc., acquaintance with the sounds of the natural world: sounds in the forest at different times of the year, etc.); 2-onomatopoeia (acquaintance with the sounds of the animal world, a variety of human voices);



3- speech sounds (development of skills of recognition and correct pronunciation of the sounds of the Russian language); 4- development of coherent speech (learning how to build coherent speech from a phrase to a text). The program is aimed at the development and correction of speech, the formation of literate pronunciation skills, the development of all aspects of speech: recognition of the sounds of the surrounding world, teaching the correct pronunciation of the sounds of the Russian language, development of coherent speech. This software presents several levels of difficulty in each task [2].

A cycle of speech therapy classes "Speech therapy lessons" on the development of speech in non-speaking children and in children with impaired sound pronunciation aged 2 to 4 years from the psychological center "Adalin". In this cycle of classes, the most effective speech therapy methods for the development of speech are selected and systematized, taking into account the specifics of working with children of early and younger preschool age with dyslalia, alalia, speech development delay (SRR), general speech underdevelopment (ONR). This cycle includes the basic types of speech therapy games (articulatory gymnastics, finger games, games for the development of physical and phonetic hearing, exercises for onomatopoeia, rhyming riddles, poems with movements and tongue twisters) [2; 3].

### CONCLUSION

Thus, the listed advantages and developing capabilities of computer technologies clearly demonstrate the resource potential aimed at equalizing the speech and psychophysical development of children of preschool and primary school age with speech disorders. Gaming computer technologies are an additional resource for

logo-correctional work that solves the problems of speech and cognitive development.

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