

Digitalization of Speech Therapist’s Work in Educational Organizations with Children Who have Serious Speech Disorders

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ABSTRACT

Today, digital technologies are an essential and integral part of the educational space.

The article considers the digitalization of various types of speech therapy work: organizational and methodological, diagnostic, correctional and educational, preventive, educational, in educational organizations. The authors have studied and analyzed digital technologies implemented in educational organizations that have a wide range of technical design: office, hardware and software, multimedia, interactive, gaming, etc.

The widespread availability of so-called “open” resources, which include “cloud” technologies, provides storage and transmission of a huge amount of information. Most of these electronic resources are effectively used in organizational and methodological, correctional and educational activities of speech therapists in the format of information computer programs. Testing or diagnostic computer systems located in a “closed” database are intended for use by speech therapists (they require special training) and are copyrighted and certified.

The use of ready - made versions of the speech therapy conclusion excludes the need for a specialist to analyze the results obtained during diagnostics, which, according to the authors, leads to insufficient use of professional experience.

In general, the work of a speech therapist is supported by a large number of digital technologies that have proven their uniqueness, feasibility and effectiveness, and do not have a scientific basis. The analysis of digital technologies has shown that they are only auxiliary tools in the work of a speech therapist.

Keywords: *the digitalization of the speech therapist’s work, the digitalization of educational institutions,*

serious speech disorders, computer technologies in speech therapy

1. INTRODUCTION

The main vector of the country's development is digitalization of all spheres of human activity. Digitalization of education in general should be considered one of the priorities.

New digital technologies, which are universal means of teaching and allow not only to form students' knowledge, skills and abilities, but also to develop the child's personality and satisfy his / her cognitive interests, are actively implemented into the activities of the speech therapist of the educational organization. In psychological research, it is noted that digital educational resources influence the formation of abstract, creative and reflexive thinking of students. The imagery of displaying certain phenomena and processes in the memory of the student enriches the perception of the educational material, contributes to its scientific understanding.

The use of computer technologies in the correctional and educational process is an affordable and convenient way to quick selection of the necessary speech and literary material and its design using various information and electronic resources.

The use of special computer speech therapy programs by a speech therapist in correctional work allows to increase the effectiveness of correctional training, speed up the process of preparing preschoolers for literacy, and prevent the appearance of secondary writing disorders in them. Computer-based learning tools can significantly increase the motivational readiness of children to conduct remedial classes by modeling the correctional and developmental computer environment [8, 10].

The basis for their use in state educational organizations is the normative legal documents of the Russian Federation.

The experience of working with students of a pedagogical University shows that the successful professional training

of a speech therapist depends mainly on the ability to use the voice.

The perfection of speech ensures the perception and understanding of its students. Children are especially sensitive to the sound of the teacher's voice. Unjustified intonation, monotonous speech, incorrect pronunciation of any sounds causes them to laugh or distrust. Future teachers carry an increased voice load, which they carry out in their activities. If their spoken voice is not set, speech is not organized, it can lead to various diseases and requires medical care (phoniatra and phonopeda)

2. RESEARCH METHODOLOGY

The purpose of the research is to study and analyze the implementation of digital technologies in the speech therapy work of educational organizations. We considered the most common information resources.

Today, digital technologies used in education are classified as informational, testing, teaching, training, pedagogical modeling, and gaming. They allow us to bring the quality of teaching activities to a new level, increase efficiency and ensure individualization of training [2,3,4,5,6,8,9].

At the moment, distance learning is an actual form of education, which is realized by means of Internet technologies. This technology is interactive, as it involves the interaction of a speech therapist and students. E-mail, teleconferences, real-time dialogues, messengers and social networks are the means of implementing distance learning and are implemented online or offline. Educational and methodical interactive complex for distance learning reflects all components of the educational process: goals, content, methods, organizational forms of learning tools, which are implemented in four blocks:

- 1) Organizational and methodological block, where goals, tasks, methodological literature and forms of control are presented, as well as opportunities for virtual communication with a speech therapist.
- 2) The information and training block includes computer training systems, virtual simulators, and didactic game exercises.
- 3) The control block contains test tasks for monitoring and self-monitoring.
- 4) The virtual communication block is a system of virtual communication, interactive communication between a speech therapist and a student.

Speech therapy work in educational organizations involves the following types of activities: organizational and methodological, diagnostic, correctional and educational, preventive, and educational.

3. RESEARCH RESULT

Organizational and methodological activities of the speech therapist are provided with information digital technologies. Legal and regulatory information on the activities of a speech therapist presented at the Federal website of the Ministry of education of the Russian Federation, scientific - methodological information on the websites of the journals "Geography" (<http://schoolpress.ru/products>), "Special education" (<http://journals.uspu.ru/spetsialnoe-obrazovanie>), "speech Therapist" (<http://logoped-sfera.ru>), teaching library with a themed selection of books on speech therapy and special pedagogy (www.pedlib.ru), Institute of regional education development of Yekaterinburg (<https://www.irro.ru>) and etc.

Diagnostic activities of speech therapists are represented by computer complexes and target programs. In the professional environment they are actively promoted and are popular in educational organizations:

"Ciceron LOGO diakor" (2007), "Diagnostics of speech development DIAG. LITE" by O. A. Melnikova, M. A. Kiryushkina (2014), "Diagnostics of speech of preschool and primary school children" by E. V. Nurminsky, O. A. Bezrukova and others (2015); "Speech Therapy examination of children" by V. M. Akimenko (2016); software and didactic complex "Logomer" (2018). Diagnostic computer programs are designed for preschool and primary school age (from 4 to 10 years), allow to conduct multi - level diagnostics, fill out electronic diagnostic cards, get an individual development profile, make a route of support or develop an individual development program, track the dynamics of a child's development, form reporting documentation in the form of summary tables, diagrams, protocols, maintain a database. In some cases, the diagnostic complex involves an automated speech therapy conclusion, where 2 testing variants are used: 1) in-depth diagnostics lasting 40-50 minutes, which can be interrupted as necessary and continued at a convenient time; 2) screening diagnostics lasting 15 minutes to use it at advisory points.

Correctional and educational activities of speech therapists are traditionally accompanied by computer software complexes "Visible speech" (1989), "Speech kaleidoscope" - NPO "KASKOD" - ST. Petersburg (1992). These complexes visualized the basic components of sounding speech: speech breathing, voice formation, voice science, phonetics, syllabic structure of words and prosodics; they were equipped with external HDD-cases with installed software, a monitor, keyboard, microphone, audio columns, and methodological recommendations.

Speech therapy simulators "Delpha - 141", "Delpha - 142" by O. E. Gribova (1996), "World outside your window" by O. I. Kukushkina (2003), "Games for Tigers" by L. R. Lizunova (2004), logotherapy complexes of BOS (biofeedback) by A. A. Smetankin, 1998, and others expanded the possibilities of speech therapy correction. The program modules contain training exercises for the formation of various components of oral and written

speech (speech breathing, prosodics, sound pronunciation, vocabulary, grammar, coherent speech, literacy training). Simulators allow children and adults with a wider range of speech disorders to practice with the participation of a speech therapist and independently if they have a PC or a special smart app.

The release of multimedia programs on CD - ROM storage platforms and USB - flash has given a rise to a surge in the development of programs that allow not only to correct, but also to prevent disorders with children of preschool and primary school age. Such programs include the multimedia project CD - ROM "Speech development. Learning to speak correctly", L. E. Shevchenko and the New disk company (2007), computer games "Difficult sound" by I. P. Skvortsova, OLMA Media Group (2007); game software and hardware complex "Sunny castle", O. A. Khodchenkova, M. N. Rusetskaya (2011), multimedia program "Play and learn", E. A. Kotova (2012) (logopedgeim.ru), multimedia program "Home speech therapist", "Speech therapy. Sounds Y, K, G, X (W, W, Sh, H; S, Z, C; L, L; R, R)" by T. S. Reznichenko, O. D. Larina, etc. These programs are used for individual and subgroup classes, have several levels of complexity, and provide individual configuration of training modules, taking into account the zone of current and immediate development. Educational and entertaining tasks are grouped into sections on the development of auditory perception and memory, the development of a sense of rhythm, correction of sound pronunciation, vocabulary and coherent speech. They are made for correction of the phonetic and phonemic side of speech, general insufficient development of speech, and mental functions.

Multimedia programs such as "Learning to read. Country Bukvaria (Jewel)", LLC "New disk" (2010); "Sea of literature", "Read-write without errors", "Entertaining phonetics" (Mederia.ru) are aimed at preventing and correcting disorders of written speech.

There are programs aimed at the age group of children "1+" ("Razvivalochki" by E. Zheleznova, 2009; "Zayka Sam" by S. N. Savushkina, 2017). The programs contain speech and visual material for emotional communication of the teacher or parents with the child in order to evoke an emotional lift and interest, which is an additional stimulus to "talk" through gestures, words, simple phrases. Program-constructors that allow speech therapists to independently model the program within the framework of actual activities are being actively developed: "Picture constructor" - for creating didactic manuals, "Speech therapy task generator" - individual homework for 1 minute, "Lexical stocks" - interactive games for working out lexical topics, "Zvukareku" - setting and automating difficult sounds, "Logo Assorted" - universal material for speech examination and speech therapy classes, "Grow baby" - to activate the speech of preschool children, "Constructor of work program" - for specialists of correctional profile (Mederia.ru).

The development of demonstrative material for use in speech therapy classes and at home is actively developed on the platforms Vkontakte (Konyakhina's classes), Speech Therapist Profi, and others.

Great help to the speech therapist in educational activities is provided by websites: "Boltunishka" (boltunspb.ru), "Zaikanie.ru" (zaikanie.ru), "Logoburg" (logoburg.com), "Logoped" (logopediya.com), "Logoped.ru" (logoped.ru), "Speech Logoped - master" (logopedmaster.ru), "Logoped plus" (logopedplus.ru), "Logopunkt.ru" (logopunkt.ru), "Our kids" (ourkids.ru), portal "Logopedy.ru" (logopedy.ru/portal), project "Stuttering.ru" (stuttering.ru), festival of pedagogical ideas "Open lesson" (festival.1september.ru) and others. These sites contain articles and publications on topical and problematic issues of speech therapy; discuss complex issues of diagnosis and correction, methodological developments and practical advice, a selection of speech games and exercises. Open webinars of leading specialists in the field of speech therapy and video materials of speech therapists-practitioners are located on the platforms "youtube", "m.vk.com", "nsportal", "multiurok", etc

4. DISCUSSION OF RESULTS

The analysis of the programs has allowed to identify the following characteristics that should be taken into account when applying them.

Today, digital technologies are an essential and integral part of the educational space. They can be divided into two large groups: "open", i.e. those that are freely available, and "closed", which require special permission to use.

"Open" resources have gained particular popularity, in particular, "cloud" technologies that allow you to store, transmit and have access to huge amounts of information. Most of the electronic resource is effectively used in organizational and methodological, correctional and educational activities of speech therapists in the format of information computer programs that have a wide range of technical design: office, hardware and software, multimedia, interactive, gaming, etc. This resource is very diverse and concerns many speech disorders (programs for correcting phonetic, tempo - rhythmic, lexical, grammatical, coherent oral and written speech), taking into account the age of students. They are available to a wide range of users, and do not require special advanced computer literacy skills.

At the same time, it should be noted that the widespread introduction of digital technologies in the educational and correctional process leads to the fact that the market of speech therapy services offers "training" and "developing" programs addressed to specialists and parents, which do not have a serious scientific basis, with no expert evaluation and with unconfirmed effectiveness. Such products are developed by spontaneous creative groups, primarily for commercial gain.

The "closed" ones are most often testing or diagnostic computer systems. They are located in a closed database of professional programs and are protected by copyright, certified (for example, by the "MAIN FUNCTION SYSTEM"), and have awards (for example, an

international diploma from the British Academy of Education). Their use is possible only after special training, both in the application and in the interpretation of the obtained results. It is also alarming that a good design (graphs, charts, comparative tables, etc.) creates the impression (illusion) of infallibility of the conclusion, which gradually eliminates the need for your own analysis of the obtained results, and the professional experience of many years of work ceases to be used.

However, speech disorders are so diverse, and methodological approaches are so diverse, that it is hardly possible to identify any universal methodology that could be used as the basis for an automated, computer - based

5. CONCLUSION

In conclusion, it should be noted that currently the market for speech therapy services represents a large number of developments in the virtual space that have proven their uniqueness, feasibility and effectiveness, as well as dubious, but well - advertised. Consequently, there is a need for the speech therapist to develop digital competencies not only for confident and effective use, but also for critical choice.

A prospective direction, in our opinion, is the development of programs - constructors associated with the database of tele - medicine, which will allow to fully take into account the psychophysiological features of the child, the specifics of speech disorders to solve specific correctional and educational tasks, to have a developing and correctional orientation of pedagogical influence, to ensure the productive activity of the child, to allow combining and alternating IT technologies and traditional

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approach to correcting speech disorders. That is why all developments can be considered as auxiliary means of speech therapy. They should be considered only as additional, undoubtedly important information about the speech function of a particular subject, but not as a final verdict.

Regular use of digital technologies allows speech therapists to accumulate a bank of electronic educational resources: computer speech therapy programs, computer training games, multimedia presentations, speech therapy training programs and audio materials in all areas of correctional and diagnostic speech therapy.

methods of training, to organize individual and group forms of work.

The specialist can use these technologies in the diagnostic process, in individual, subgroup and front-line classes. These technologies can be used in the course of diagnostics. Use them when working with parents to create recommendations for working at home, to create visual and textual material, to exchange experience with colleagues, to improve skills and professional skills.

The introduction of these technologies is possible in almost all areas of speech therapy: the development of phonemic hearing and phonemic perception, the sound - producing side of speech, as well as the formation of lexical and grammatical structure of speech and the development of coherent utterance.

Therefore, we can say that the inclusion of computer learning tools in the correctional process, in the structure of traditional speech therapy classes, contributes to the formation of a new educational environment for children with speech disorders.

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