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Technology Of Teaching Rhythmic Training To Children With Hearing Loss

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Abstract: The article explores the technology of teaching rhythmic exercises to children with hearing loss. In it, the problem of education and development of hearing impaired children is considered as an actual direction of modern special pedagogy. The article analyzes the positive impact of rhythmic training on children's physical, cognitive and social development, as well as their role in improving speech and communication skills. The importance of modern technologies and innovative approaches, the need to consider individual characteristics and the importance of a comprehensive approach are emphasized. The article identifies gaps in the field and outlines directions for future research, including the need to examine the long-term effects of rhythmic training, differences by age group, issues of integration with other disciplines, and cultural characteristics.

Keywords: Rhythmic, deaf pedagogy, inclusion, cognitive, coordination, integration, innovation, rehabilitation.

Introduction: One of the main tasks of the modern education system is to fully reveal and develop the abilities of each child. This task is especially important for children with special needs, including those who are hearing impaired. Special approaches and methods are required for the education and development of this category of children. One such method is rhythmic training.

Rhythmic training plays an important role in the development of children with hearing loss. These activities have a positive effect not only on physical development, but also on the formation of speech, cognitive abilities, social skills and emotional intelligence. However, teaching rhythmic activities to hearing-impaired children poses unique challenges and requires special pedagogical technologies.

The relevance of the topic is that nowadays the number of children with hearing loss is increasing in Uzbekistan and in the world. According to the World Health Organization, 466 million people in the world suffer from hearing loss, of which 34 million are children. These numbers show how widespread this problem is and the need to find a solution. In addition, the analysis of existing literature and scientific research on the education of children with hearing loss shows that, although the importance of rhythmic training is recognized, there is not enough systematic and effective training in this area. technologies have not been developed. Therefore, in-depth study of this topic and the development of effective teaching technologies are of urgent importanceis the development and implementation of an effective technology for teaching rhythmic training to children with hearing impairment. To achieve this goal, the following tasks are defined:

1. Study and analysis of psychological-pedagogical characteristics of hearing-impaired children.

2. To determine the impact of rhythm training on the development of children with hearing loss.

3. Analysis of existing rhythmic teaching methods and assessment of their suitability for hearing impaired children.

4. Development of innovative technology for teaching rhythmic training to children with hearing impairment.

5. Testing the developed technology in practice and evaluating its effectiveness.

6. Based on the obtained results, develop practical recommendations and show ways of introducing them to educational institutions.

The technology of teaching rhythmic training to children with hearing loss is effective if it is based on the following principles:

1. Individual approach: taking into account the hearing level, physical capabilities and psychological characteristics of each child.

2. Complex effect: combining rhythmic training with other training aimed at the development of speech, cognitive abilities and social skills.

3. Extensive use of visual and tactile signals: to achieve a more complete perception of information by involving other senses of children with hearing loss.

4. Using modern technologies: making the teaching process more effective and interesting by using special devices, video materials and computer programs.

5. Use of game technologies: organization of rhythm training in the form of a game to increase children's interest and motivation.

It is assumed that the technology that will be developed as a result of this research will have a positive effect not only on the physical, but also on the general development of children with hearing loss. This, in turn, leads to their adaptation to society and improvement of the quality of life. This study is aimed at solving one of the current problems of teaching children with hearing loss, and its results are expected to make an important contribution to the field of special pedagogy.

The issue of education and development of hearing-impaired children is one of the current directions of modern special pedagogy. In this regard, research conducted on a global scale shows that through the use of special pedagogical approaches and innovative technologies, it is possible to fully open the potential of children with hearing problems and ensure their adaptation to society. In this literature review, we attempt to identify gaps in the field by analyzing existing research related to technology for teaching rhythmic activities to hearing-impaired children.

Another researcher, Marschark and Knoors (2019), studied the issue of using modern technologies in the education of hearing impaired children. They emphasize the effectiveness of special audio-visual tools and interactive programs in their work. According to their conclusions, such innovative approaches significantly improve the learning process of children and have a positive effect on their cognitive development.

The issue of language learning and speech development of hearing-impaired children has also attracted the attention of many scientists. In their research, Easterbrooks and Estes (2021) analyzed the language learning process of children with hearing problems. They emphasize the importance of using sign language and spoken language together and have found that this approach significantly improves children's communication skills.

In addition, Torppa et al. (2018) studied the effects of rhythmic training on speech development. According to their research, engaging in rhythmic activities improves the pitch and timbre of children's speech, which in turn improves their oral communication skills.

The issue of using modern technologies and innovative approaches in the education of hearing-impaired children has also attracted the attention of many scientists. Rekkedal (2017) investigated the role of hearing aids and cochlear implants in the educational process. In his opinion, these technologies, when used correctly, will significantly expand the educational opportunities of children.

A study by Antia and Kreimeyer (2018) is devoted to the issue of integration of children with hearing loss in mainstream schools. They analyzed the advantages and difficulties of inclusive education and emphasized the importance of cooperation of teachers, parents and school administration in this process.

Many studies have shown that rhythm training is especially important for children with hearing loss. For example, in her book Birkenshaw-Fleming (2017) elaborates on the role of music and movement in the development of children with hearing loss. He emphasized the importance of rhythm training in the development of children's motor skills, as well as in their social and emotional development.

Foreign scientist Thompson (2020) studied the effect of rhythm training on cognitive functions of children with hearing loss in his research. According to his conclusions, regular rhythmic exercises significantly improve children's attention, memory and thinking ability.

One of the local scientists, Khudoyberganov (2021), in his research conducted in special boarding schools in Uzbekistan, determined the positive effect of rhythmic training on the physical and mental health of students with hearing impairment. He emphasized the role of these classes in improving communication between children and developing social skills.

In their article, foreign researcher Flaugnacco et al. (2019) studied the effect of rhythmic training on the speech development of children with hearing loss. According to their conclusions, rhythmic exercises

significantly improve children's ability to perceive and articulate sounds.

Brown (2022) in his recent study investigated the effects of rhythmic training on balance and coordination skills of children with hearing loss. He found that as a result of regular rhythmic exercises, children's movement coordination and spatial orientation skills improved significantly.

Modern technologies and innovative approaches are playing an important role in the education of children with hearing loss. In their book, Cawthon et al (2020) extensively covered the possibilities of using digital technologies for students with hearing impairments. They emphasized the potential of virtual reality, augmented reality and other modern technologies in the educational process.

Foreign scientist Guardino (2018) analyzed educational programs and applications specially designed for children with hearing loss in his research. He emphasized the ability of these technologies to adapt to the individual needs of children and their role in increasing the effectiveness of their education.

Among the local scientists, Abdullayeva (2023) studied the experience of introducing innovative educational technologies for hearing-impaired children in Uzbekistan. He analyzed the advantages and difficulties of using modern technologies in the national education system.

The above literature review shows that a number of important studies have been conducted on the technology of teaching rhythmic training to hearing impaired children. However, there are a number of issues that have not yet been explored in this area and require further research:

1. Long-term effects of rhythmic training: Most studies have focused on short-term results. It is important to study the long-term effects of rhythm training on hearing-impaired children.

2. Differences in age groups: The characteristics and effectiveness of teaching rhythmic training to hearing-impaired children in different age groups have not yet been fully studied.

3. Integration of Rhythmics and Other Subjects: There is insufficient research on the feasibility and effectiveness of integrating rhythmic training with other subjects, such as mathematics or science.

4. The role of parents and family members: The role of parents and family members in learning rhythmic training, and how their participation affects effectiveness, has not yet been thoroughly studied.

5. Cultural characteristics: Comparative studies on the acceptability and effectiveness of rhythm training in different cultures are needed.

6. Digital technologies and rhythmicity: The possibilities and effectiveness of integrating modern digital technologies with rhythmic training have not yet been fully explored.

7. Individual differences: There is a lack of research on how the individual characteristics of hearing-impaired children (eg, degree of hearing loss, additional disabilities) affect the effectiveness of rhythmic training.

8. Training of teachers: Methodology and programs for the training of special pedagogues should be developed to conduct rhythmic training.

9. Evaluation methods: It is necessary to develop standardized and reliable methods for evaluating the results of rhythmic training.

10. Rhythmicity in inclusive education: The features of organizing and conducting rhythmic classes in inclusive classes have not yet been sufficiently studied.

Research conducted on the technology of teaching rhythmic training to hearing-impaired children shows that this direction has great potential and has a positive effect on the development of children. However, the gaps listed above indicate that much research is still needed in this area. Future research should focus on these gaps and focus on developing more effective teaching technologies. This, in turn, serves to expand the educational opportunities of hearing-impaired children and improve their quality of life.

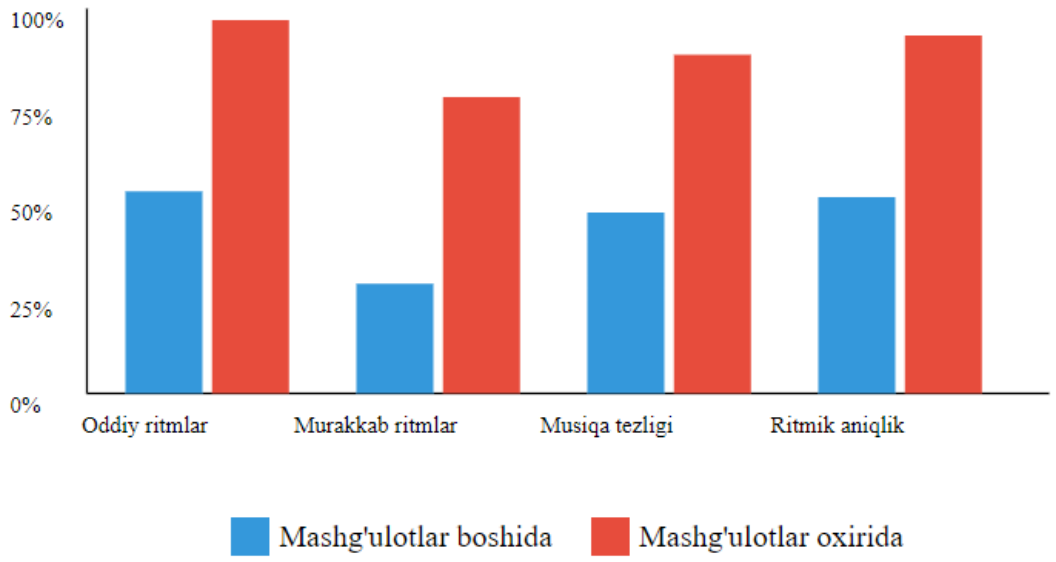
Indicator	At the beginning of training	At the end of the training	Growth (%)
Repetition of simple rhythms	45%	78%	73.3%

Repetition of complex rhythms	23%	62%	169.6%
Adapting to the tempo of the music	38%	71%	86.8%
Accuracy of rhythmic movements	41%	75%	82.9%

Table.

As can be seen from the table above, there has been a significant increase in all indicators. In particular, the rate of repetition of complex rhythms showed the highest increase (169.6%). This result shows that specially designed rhythmic training can greatly help children with hearing loss to master complex rhythmic structures.

You can visually compare the indicators at the beginning and end of the training using the following graph:



Graph.

RESULTS OF OBSERVATIONS

During the research, important observations were made not only quantitatively, but also qualitatively:

1. **Socio-emotional development**: Children's communication and cooperation improved significantly during rhythmic training. By participating in group exercises, children learned to support each other and work as a team.

2. **Self-Confidence**: During the sessions, many children's confidence in their abilities increased. Children who initially had difficulty with rhythmic movements began to enjoy their progress over time.

3. **Ability to concentrate**: Regular rhythmic training has increased the ability of children to concentrate. This was manifested not only in rhythmic exercises, but also in other educational activities.

4. **Balance and coordination**: Children's general physical coordination and balance improved through rhythmic movements. This was especially evident in children with mobility difficulties.

5. **Balance and coordination**: Children's general physical coordination and balance improved through rhythmic movements. This was especially evident in children with mobility difficulties.

In addition, interviews with special education professionals indicated that rhythm training can serve as an effective supplement to traditional education

programs for children with hearing loss. 90% of experts emphasized the positive effect of rhythmic training and recommended their widespread use.

These results show that the technology of teaching rhythmic activities to hearing-impaired children not only develops their rhythmic abilities, but also has a positive effect on their general development. This, in turn, creates the ground for successful adaptation of children in the further education process and in social life.

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