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**CORRECTION OF THE SOUND-SYLLABIC WORD'S
STRUCTURE IN PRESCHOOLERS WITH GENERAL SPEECH
UNDERDEVELOPMENT**

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Abstract

The article deals with the description of methods in the diagnostic examination of the sound-syllable structure of words and the correction of its disorders in preschool children with general speech underdevelopment (GSU) of level III of speech development. The relevance of this research, on the one hand, lies in the importance of the correct acquisition of the sound-syllable word structure in preschool children as a component of children's preparation for mastering the native language, on the other hand, in the insufficient study of the mechanisms of violations in the sound-syllable word structure by children with general speech underdevelopment, and on the third. So, there is the need to study the most effective methods of correcting such disorders in children with general speech underdevelopment and to find effective ways of forming the sound-syllable structure of words in children with GSU. Children with serious speech impairments have a variety of distortions of the word syllabic structure. This negatively affects not only the formation of vocabulary, grammar, phonemic perception and the future acquisition of written language, but also the development and formation of personality. The study of children with general speech underdevelopment shows that disorders of the sound-syllable structure of words may be absent, but in some cases are retained in speech longer than defects in pronunciation. The analysis of the conducted work shows that the process of correcting violations of the sound-syllable structure of words is part of the general speech therapy work with children to overcome general speech underdevelopment.

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Keywords: Sound-syllabic structure, correcting disorders, preschoolers, speech underdevelopment



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1. Introduction

The USA National Institute for Literacy report identifies phonetic, lexical, syntactic and symbolic indicators of speech development (National Early Literacy Panel, 2008). The phonetic indicator includes "the perception of spoken language and individual sounds, as well as the child's own pronunciation of sounds and words through the development of articulation skills (tongue, lip and laryngeal movements)" (Verax et al., 2019). Therefore, mastering the sound and syllabic structure of words and using a variety of syllabic structures in speech is an important task in the speech development of preschoolers. Already by upper preschool age, most neurotypical children can learn the complex sound and syllable structure of a significant number of words and pronounce different words of any complexity. However, children with general speech underdevelopment (GSU) have difficulties in this respect. The relevance of addressing this problem is due to the need for correct mastering of the sound-syllable word structure by preschoolers with GSU, insufficient attention to this in practice. It is also necessary because "with the acceleration of changes in society there are significant changes in the psychophysiological and personal formation of children" (Ivanova et al., 2016, p. 91).

2. Problem Statement

There is a strong need to examine and correct the sound-syllable structure of words in preschool children with a speech impairment. Researchers (Agranovich, 2001; Tkachenko, 2004) point out that children with GSU have problems in mastering the sound-syllable structure of words in the form of replacements, omissions, interchanges, repetitions of sounds and syllables, simplification of consonant groups. A disorder in the production of syllables and word sounds has a number of consequences, including the distortion of sounds, beyond the isolated pronunciation of words with an accessible syllabic structure, which interferes with the use of existing sounds and the acquisition of new sounds. Delayed acquisition of the sound-syllable word structure negatively affects the development of the grammatical structure of speech expressed as the distortion of grammatical relations in a phrase, shortening of its individual elements, inability to form sentences and to connect words grammatically correctly in them. There is also a limited vocabulary, the misuse of words in speech due to a lack of understanding of their meanings, the peculiar use of words which leads to a distortion of meaning. Sound-syllable structure disorders also have a negative impact on the development of sound analysis, which manifests itself in reading and writing disorders at the start of schooling. All of this creates additional psychological problems for the child as a whole: "speech impairment causes specific developmental problems for children who feel themselves in conditions of social deprivation, which makes it difficult to assimilate social experience" (Artishcheva, 2019, p. 10).

3. Research Questions

The article focuses on the examination and correction of the sound-syllable structure of words in preschoolers with GSU.

The object of the study is the sound-syllable word structure in preschool children with general speech underdevelopment; the subject is the process of examining and correcting the sound-syllable word structure in preschool children with GSU.

We hypothesize that preschool children with GSU of level III of speech development have differences in mastering the sound-syllable word structure. Their overcoming is possible through a special system of tasks and the correct selection of verbal-speech material.

Stages of the research include: 1) ascertaining stage – the study of the problem, preparation and organization of psychological and pedagogical experiment, diagnosis of violations of sound-syllable word structure in children with GSU, analysis of results (September-October 2019); 2) forming stage – determination of stages, content and correction methods of the identified violations of sound-syllable word structure in children with GSU (November 2019 – the end of July 2020); 3) control stage – conducting a repeated diagnostic study of sound-syllable word structure in the experimental group of children, a comparative analysis of the data obtained at the ascertaining and controlling stages of the study, determining the effectiveness of the work (August – September 2020).

The study base was MBPEI Kindergarten No. 52 in Taganrog, Rostov region. The Experimental group included 8 children aged 6–7 with a GSU of level III of speech development, who attend the compensatory focus group "Raduga" for children with serious speech impediments.

4. Purpose of the Study

The purpose of the study is to describe the methods of diagnostic examination of sound-syllable word structure and correction of its disorders in preschool children with GSU of the third level of speech development.

5. Research Methods

Research methods include psycho-pedagogical experiment; speech therapy examination, quantitative and qualitative analysis of the data obtained, their interpretation, analysis of the products of children's speech activity; use of speech and picture material, comparative analysis of data.

The speech examination of mastering the sound-syllabic structure of words used the method of Markova (1961) according to her typology of words. The children were asked to pronounce 14 types of words with different syllabic structures. Types of tasks consisted of 1) answering questions in whole sentences, 2) repeating phrases with polysyllabic words, 3) naming object pictures, 4) repeating words after the speech therapist.

We diagnosed the sound-syllable structure of words in children with GSU individually twice: during the ascertaining and controlling stages of the experiment. The results of the examination were assessed in points and recorded in the protocol.

We have developed the following criteria for evaluation of results: *high level* – 3 points: the syllable structure of all words of 10–14 grades is reproduced correctly; there is sufficient formation in reproducing words of increased syllable complexity; minor mistakes are allowed when answering sentences with words of complex syllable structure; *medium level* – 2 points: almost error-free

reproduction of words of grades 1–9 is available, some mistakes in the reproduction of words of grades 10–14 are allowed, slow, chanted, and syllabic reproduction of words of complex syllable structure is possible; *low level* – 1 point: error-free reproduction of words of grades 1–5 is available; disorders of syllable structure of words from grade 9, their sound-filling; mistakes mainly in naming pictures; more than half of all words are broken when producing words with a complex syllabic structure; sometimes there is a refusal to perform tasks.

6. Findings

At the beginning of the ascertaining stage, we selected an experimental group of children with normal hearing and intact intelligence, studied medical and pedagogical records, because consideration of the individual manifestations of the nervous system and perception when teaching and educating a child makes it possible to create comfortable conditions for his or her development and to differentiate methods and ways of interaction with the child, which will ultimately contribute to their more successful adaptation and integration into society (Zagrevsckaya et al., 2018).

Characteristics of the group are as follows: out of the total number of children, seven have intact intellect, normal hearing, one child has secondary mental retardation and has difficulties in developing attention, memory and thinking. Three children showed increased anxiety, two of them had pronounced fears (of the dark, heights, harsh sounds). Three of the group show traits of general emotional-volitional immaturity: unbalanced, excitability, hyperactivity, weakness of voluntary self-regulation.

The diagnostic examination of the experimental group revealed the psychological typology of the children: 4 children were contactable, active, motivated to do the tasks, showed sustained interest and curiosity; 3 children were not contactable enough, were less active, interest was unstable, lack of concentration on words and pictures; 1 child showed reduced cognitive and mental activity, increased distractibility, weak interest, exhaustion by the end of the examination, cases of negative attitude and refusal to do tasks.

The experimental group had the following distribution: 37.5% of the total number of children showed a low level of formation of the word's sound-syllable structure, and 62.5% of the total group showed an average level (figure 01).

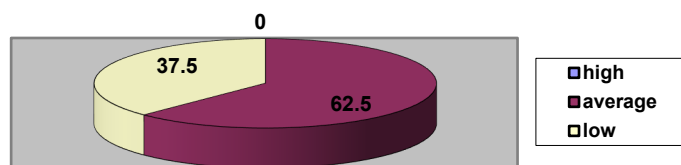


Figure 1. Distribution of the group according to the level of forming the sound-syllable structure of the word at the ascertaining stage

Analysis of word pronunciation by grade shows that children with GSU have an insufficient sound-syllable word structure, a third of all children show distortions and insufficient sound completion,

with the greatest difficulties falling on words with increased syllabic complexity. Children with an intermediate level of the sound-syllable structure have difficulty pronouncing words with a more complex syllabic structure (there were mistakes in word pronunciation from grade 9–10). They pronounce four-syllable and five-syllable words with a consonant blend slowly, syllable by syllable, and distort the sound-fullness of the words. There is distortion in the playback of sentences with words with a complex syllabic structure (2–3 sentences). The distortion of the syllabic structure is more frequent in the answers to the questions (in 4–5 answers). Children with a low level of sound-syllable word structure have an impairment in the reproduction of both complex syllable structures and simpler ones such as in words with a consonant blend. Children also misrepresent words with a complex syllabic structure in a sentence. When answering questions, they constantly allow distortions of the syllabic structure of the word ("*Iskavot pakhit isyuyu*"). There were refusals to complete difficult tasks. In general, children with both intermediate and low levels had the most successful results in diagnostic tasks involving the reproduction of words from grades 1–6. They were also more successful in repeating words after the speech therapist than in naming them independently from a picture.

Quantitative and qualitative analysis of errors showed that children with GSU have the following violations of the sound-syllabic structure of words: 1) syllable shortening (elision): *lisya* (lisyata), *pipit* (velosiped), *pinino* (pianino), *gusetza* (gusenitsa); 2) shortening of consonants in the consonant blend: *pamyatik* (pamyatnik), *eskusovok*, *iskavot* (ekskursovod); 3) increase in syllables (iterations): *guseyeniitsa* (gusenitsa); 4) transpositions of syllables: *motovok* (molotok), *kosnomavty* (kosmonavty), *kurukuza* (kukuruza); 5) transpositions of consonants: *ulikta* (ulitka), *kovnert* (konvert); 6) substitutions of consonantal sounds by type of assimilation: *kovta* (kofta), *korobok* (kolobok); 7) substitutions of vowel sounds by type of assimilation: *optika* (apteka), *chiripakha* (cherepakha); 8) additions of sounds by type of assimilation: *polotentsev* (polotentse); 9) perseverations: *velosisiped* (velosiped) (Semenova & Korotoyakskaya, 2020).

An overall analysis of the errors showed that the majority of children show a distortion of syllable structure (it is 80 % of all children's errors). This disorder occurs in words with consonant blend, in multi-syllable words. The syllable sequence in a word was disturbed in 60 % of the cases. A possible cause is difficulties in the speech-motor mechanism, which explains the difficulty in moving from one elementary sound to another. This is especially true for children with dysarthria (dyspraxia). 30% of cases showed iterations and 20 % showed elisions. Perseverations in the total number of errors were insignificant as well (about 25 % of cases) and anticipations were also insignificant: only 20% of the cases showed it in speech. There were no contaminations (figure 02).

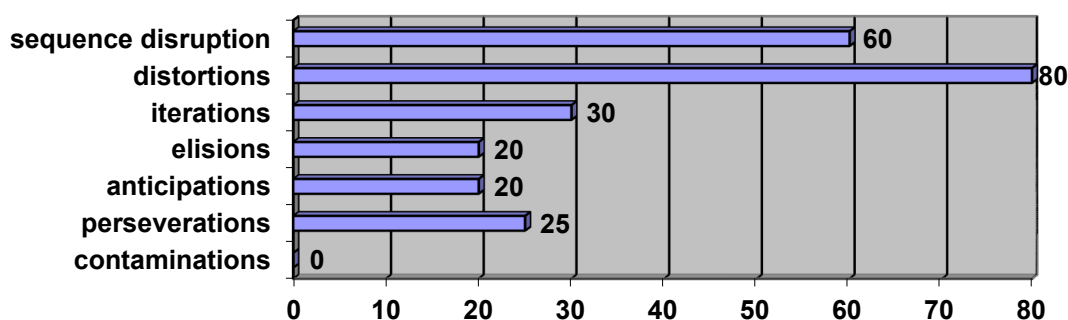


Figure 2. Correlation of the number of errors by different types of violations of the sound-syllable structure of words at the ascertaining stage

So, children with an average level of sound-syllable structure predominate in the experimental group, children with a low level of formation account for a third of the total number, and there are no children with a high level. This indicates the polymorphism of the children with GSU and the lack of correcting sound-syllable structure disorders as part of the general speech therapy process for the elimination of GSU. The nature and number of errors in different children, especially those with low levels, indicate that the cause of sound-syllable structure disorders is due to clinical diagnoses; children with dysarthria, dyspraxia and alalia have the greatest difficulties. The results indicate that children with GSU need systematic corrective work to overcome their sound-syllable structure disorders, especially those with a low level.

Current experience with correctional methods (Anisimova, 2014, etc.) made it possible to plan three stages of work in the formative stage of the experiment.

The preparatory stage formed the phonetic-phonemic basis for learning the sound-syllabic structure of the word on the relevant material. Auditory concentration was developed through games and exercises.

At the second stage, the main stage, we used exercises on the correct reproduction of the stressed syllable and intonation-rhythmic pattern to master the syllabic structure of words. To form a sound-syllable structure and to correct disorders in the perception and reproduction of the sound-syllable structure of words, we worked individually, using a differentiated approach (considering the speech difficulties and psychological traits of the child). There was gradual learning of the sound-syllable structure of words, introducing two-syllable words with open syllables first, then closed syllables, with the consonant blend. We gave the syllables in two versions: in the reflected pronunciation and in the independent naming of objects and pictures. Words of each syllabic difficulty were introduced only after mastering the words of the previous class. The work on syllabic structure progressed in parallel with the work on pronunciation. For defective sounds, the child received speech material without difficult sounds in the words.

The third and final stage involved the consolidation of sound-syllable word structures, syllabic analysis and synthesis. We introduced the mastered words, including four-syllable and five-syllable words, into spoken situations, and children used them in various activities, especially productive ones (drawing, modelling and collage). The ability to accurately reproduce the sound-syllable structure of a

word in the independent speech was reinforced through more complex activities. A holistic approach to the elimination of sound-syllable word structure disorders necessarily involves the active participation of the parents. For this purpose, the counselling sessions informed them of the speech skills and abilities that the children had learned in the lessons and needed to be reinforced in everyday life at home.

At the control stage of the experiment, we repeated the diagnostic study of the sound-syllable word structure in children with GSU to draw certain conclusions through comparative analysis of the data obtained with the data from the ascertaining stage of the study.

The quantitative and qualitative analysis of the data revealed: the group showed children with a high level of formation of the sound-syllable structure (2 people) – 25 %, and the number of children with a low level decreased, but slightly (2 people) – 25 %, due to this there was a slight decrease in the number of children with an average level (4 people) – 50 % (figure 03).

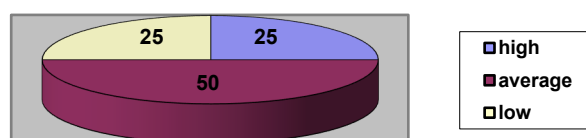


Figure 3. Distribution of the group according to the level of the sound-syllable word structure at the control stage

The following figure presents the results of comparing the group by the level at different stages of the study (figure 04).

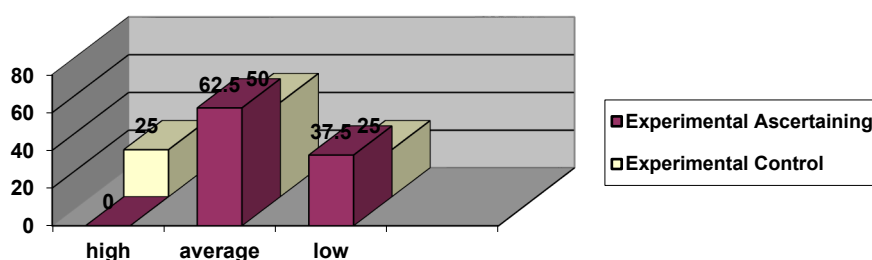


Figure 4. Dynamics of word sound-syllable structure acquisition during the formative stage of the study

Comparative analysis of errors in the reproduction of the sound-syllable structure of a word at the ascertaining and control stages of the experiment.

The comparison process revealed that the number of occurrences of all error groups decreased. The number of distortions (from 60 to 50 %) and syllable sequences (from 80 to 50 %) decreased slightly. There was a significant decrease in iterations (to 10 % of cases), perseverations (down to 5 %), a slightly smaller decrease in elisions (25 % of cases), and no anticipations, like previously, and no contaminations at all (figure 05).

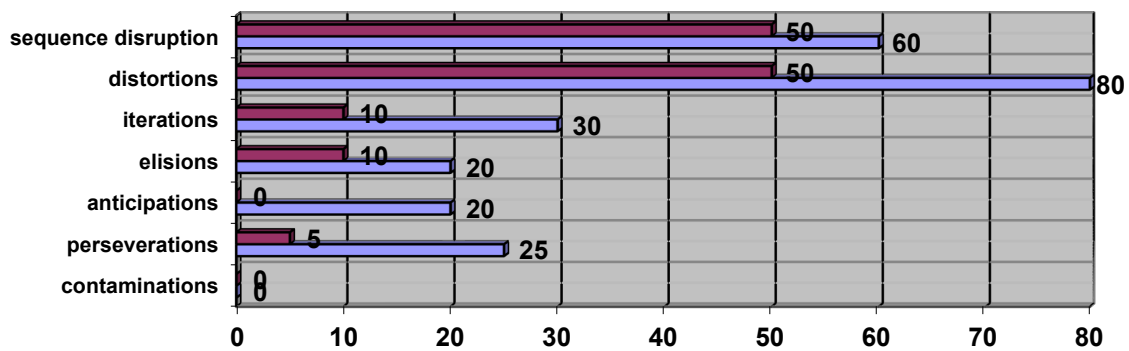


Figure 5. Correlation of the number of errors in reproducing the sound-syllable structure of a word, comparing data from the ascertaining and control stages of the experiment

There has been a decrease in the number of errors, especially for children at level II of speech development. The analysis of the available errors allowed us to conclude that the most persistent errors are consistency errors (GSU complicated by dysarthria, dyspraxia), distortion, iteration and elision (GSU complicated by alalia). We then examined and compared the data obtained by calculating the group average score in the different tasks, depending on the difficulty of the syllabic structure (figure 06).

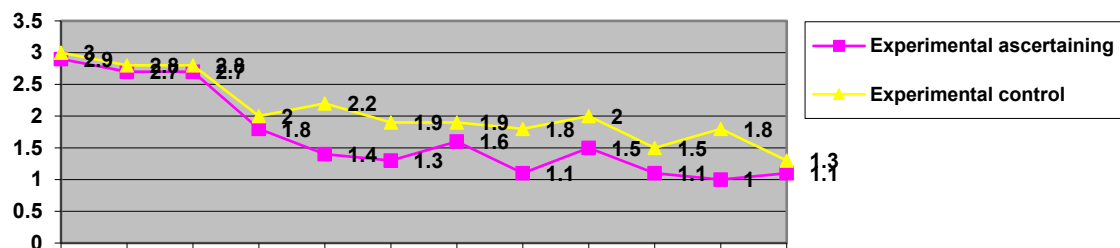


Figure 6. Comparative measures of children's learning of words of different sound-syllable complexity at the ascertaining and control stages

The graph shows that the smallest difference in average group scores is in the learning of words with two-syllable, three-syllable and one-syllable words with a simple syllabic structure, with no consonant blends (grades 1–6). The most significant difference in the group average scores is in the mastery of words with complex syllabic structure and sound-following (grades 10–14). Children find it particularly difficult to pronounce words with a complex sound-syllable structure in spontaneous speech (answering questions using four-syllable words with a consonant blend at the beginning, middle and end of the word).

7. Conclusion

A comparative analysis of the data obtained at the beginning and the end of the study shows pronounced changes. This indicates certain effectiveness of speech therapy work and positive dynamics in the acquisition of sound-syllable structure of words by children with GSU. However, this speech therapy is insufficient. This confirms the opinion of speech therapists that such disorders with a

complicated defect structure are persistent and require more time to overcome. This is especially true for children with alalia in the structure of the defect. Nevertheless, the results of this study allow for partial confirmation of the hypothesis.

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