

The influence of tempo rhythmic organization of speech during gaming and theatrical activities on correction of stammering in children

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Abstract:

Stammering is a severe psychophysical speech disorder, which usually occurs in children during an intensive development of speech function (aged between 2 and 6) and can last for many years as a result of chronification and without the necessary assistance. The required psychological and pedagogical conditions for achieving positive results of stammering correction were outlined. The trends and stages of methodology of stammering correction in senior preschoolers by means of tempo rhythmic organization of speech during gaming exercises and theatrical activities were determined. The obtained results of experimental work were generalized. The effectiveness of the proposed methodology was statistically confirmed. The **aim** of the study is to determine psychological and pedagogical conditions and to develop a scientifically justified methodology of stammering correction in senior preschoolers (aged between 5 and 7) by means of tempo rhythmic organization of speech during gaming exercises and theatrical activities. The experiment involved **135 senior preschoolers**: 65 children suffer from neurotic stammering, 45 children suffer from neurosis-like stammering and eventually 25 children do not have speech disorders. The experimental group included 78 children and the control group – 29 children. The **methodologies** of gaming activities, role-playing games, gaming therapy and fairytale therapy were employed to correct stammering. **Results.** 71.1% of children with neurotic stammering and 57.6% of children with neurosis-like stammering in the EG reached sufficient level; only 35.3% of children with neurotic stammering and 16.7% of children with neurosis-like stammering – in the CG. Consequently, 26.7% of children with neurotic stammering and 26.3% of children with neurosis-like stammering reached the average level in the EG, 52.9% and 58.3% respectively – in the CG. Yet, 2.2% of children with neurotic stammering and 6.1% of children with neurosis-like stammering are still at the low level in the EG, 11.8% and 25% respectively – in the CG. **Conclusions:** The expediency and effectiveness of using tempo rhythmic organization of speech during gaming exercises and theatrical activities as a means of stammering correction in senior preschoolers were verified. **Keywords:** senior preschool age, children aged between 5 and 7, speech disorders, neurotic stammering, neurosis-like stammering, spatial and temporal organization of motor activities.

Introduction

The **aim** of the study is to determine psychological and pedagogical conditions and to develop a scientifically justified methodology of stammering correction in senior preschoolers (aged between 5 and 7) by means of tempo rhythmic organization of speech during gaming exercises and theatrical activities.

Stammering is a severe psychophysical speech disorder, which usually occurs in children during an intensive development of speech function (aged between 2 and 6) and can last for many years as a result of chronification and without the necessary assistance. According to the British Stammering Association, approximately 1–3% of Europeans suffer from various forms of neurotic speech disorders. A similar situation develops in Ukraine as well. However, etiology and pathogenesis of stammering have not been sufficiently studied yet. This also applies to the mechanisms of its pathogenetic and pedagogical correction. Speech disorders associated with stammering include fluency disorder, specific changes in speech rhythm, pace and melody. As is known (Ivanova-Lukyanova, 2000; Leontev, 1974), rhythm being closely interrelated with pace regulates intonational structures in oral speech. Speech rhythm is based on physiological principles and correlates with the meaning, performing a communicative function.

In modern methodology, a comprehensive medical and psychopedagogical approach to the problem of stammering forms the system of clearly defined and coordinated means of interaction between various specialists: a doctor, a speech therapist, a psychologist, a physiotherapist, a social worker. A variety of

stammering correction methodologies is caused by complexity of its structural manifestations and an insufficient level of knowledge of its nature (Asatiani, 1984; Belyakova, 1998; Cheveleva, 1978; Kondratenko, 2006; Konopliasta, 2005; Kravchenko, 2003; Leniv, 2010; Mironova, 2010; Vlasova, 1983; Yurova, 2012; Zhuravlova, 2009).

Taking into account its multiaspectness and significance of the consequences, stammering correction is of great importance. Nowadays, there appear new educational technologies for teaching preschoolers who stammer.

Among various methods of stammering correction related to the use of different types of art, theatrical activities play an important role, since they sensitively meet the requirements of the child regarding gaming activities, make the world more comprehensible for them and promote a broad collective interaction. Based on the content analysis of special literature, it is found that the preconditions for developing tempo rhythmic organization of speech are the processes of correct physiological and speech respiration, spatial and temporal organization of motor activity, developed emotional and volitional processes, gaming and communicative abilities, imagination. However, tempo rhythmic organization of speech during gaming exercises and theatrical activities as a means of speech correction and especially stammering correction has not been scientifically justified yet.

Material & methods

The methodology of diagnostics is based on scientific and methodological researches by Ukrainian and foreign scholars. It includes using gaming activities in stammering correction (Havrysh, 2006; Volkova, 2006), role-playing games (Gercina, 1972), therapeutic games (Zakharov, 2004), fairytale therapy (Bohush, 2006; Florina, 1999) and methodical recommendations on communication specificity in senior preschoolers who stammer, development of imagination and emotions (Yastrebova, 1979; Leontev, 1969; Porotska, 1989).

In order to realize the main aim of the research, the preconditions for tempo rhythmic speech organization in senior preschoolers who stammer and the level of their readiness for theatrical activities have been studied.

According to the objectives of the formative experiment, the methodology of diagnostics consists of four content blocks: block 1 involves collection of general information and anamnestic data, examination of the children in order to identify the type and the degree of severity of stammering, the degree of the children's fixation on the speech defect, their preferences and attitudes towards theatrical activities by means of questionnaires (for both children and parents); based on the objectives of diagnostics, blocks 2–4 are aimed at studying specificity of the preconditions of tempo rhythmic organization of speech, the degree of the children's readiness for theatrical activities. The content of the objectives in all blocks is designed taking into account age and psychological characteristics of senior preschoolers who stammer, the principle of differentiated approach depending on clinical forms of stammering. Due to these objectives, the degree of the children's readiness for theatrical activities has been determined. During the diagnostics, the following methods were used: observation, conversation, special exercises, games and staging.

During the formative stage of the experiment, it was imperative to: study and analyze the results from the medical psychopedagogical consultation, examine the children in order to identify the type and the degree of severity of stammering; determine children's preferences and attitudes towards theatrical activities by means of questionnaires (for both children and parents); clarify the specificity of role-playing games for children who stammer as the preconditions of theatrical activities; identify the specificity of tempo rhythmic organization of children's motor activity, their ability to express emotions and control their actions; specify children's ability to use non-verbal communication tools based on images and imagination, to independently develop short-term plans of simulation exercises.

The research was conducted in senior groups of preschools No 5 and 25 in Uman, No 481 and 753 in Kyiv, No 64, 118 and 9 in Kherson. The experiment involved 135 senior preschoolers: according to the data obtained from the medical psychopedagogical consultation and questionnaires, 65 children suffer from neurotic stammering (59.1% out of 110 children); among them: 49.2% of children have mild stammering, 40% – moderate stammering, 10.8% – severe stammering); 45 children suffer from neurosis-like stammering (40.1%, out of 110 children); among them: 24.4% of children have mild stammering, 46.7% – moderate stammering, 28.9% – severe stammering; 25 children do not have speech disorders; 100 parents. It normally took two hours to examine each child (four lessons, 30 min each).

Due to the anamnesis information and examination of the children, it is found that 18.5% of children with neurotic stammering and 20% of children with neurosis-like stammering have zero fixation on the speech defect; 58.5% of children with neurotic stammering and 53.3% of children with neurosis-like stammering – moderate fixation; 26.7% of children with neurotic stammering and 23% of children with neurosis-like stammering – pronounced fixation.

Using the experimental methodology of diagnostics (blocks 2–4), the evaluation criteria were developed: tempo rhythmic organization of motor activity; the ability to use communication means based on images and imagination; emotional and volitional readiness, game positions, as well as indicators that take into

account correctness of the performed task; independence in the performance; the nature of dosed pedagogical assistance used and its influence on progress. According to the evaluation criteria and indicators, general levels of development of the preconditions for tempo rhythmic organization of speech for children who suffer from stammering and their peers with normal speech were determined: high (age norm, I), sufficient (II), average (III), low (IV).

The obtained results were analyzed and compared in accordance with the procedure specified in the methodology of the ascertaining experiment (Table 1).

Table 1. *The indicators of development of the preconditions for tempo rhythmic organization of speech (%)*

The category of children	Levels and quantitative indicators			
	High, %	Sufficient, %	Average, %	Low, %
Children with neurotic stammering (65)	18,5	20	35,4	26,1
Children with neurosis-like stammering (45)	11,1	15,6	20	53,3
Children with normal speech (25)	72	28	-	-

To confirm the research results, statistical methods were used to identify the performance indicator for all the tasks in the experiment (F). The distribution of levels (ranks) by numerical data was carried out as follows: a coefficient or an indicator of development of the preconditions for tempo rhythmic organization of speech being in the numerical interval [3,5;4) corresponds to high level of development of the phenomenon under study (level 1); [2,5;3,5) – sufficient level (level 2); [1,5;2,5) – average level (level 3); [1;1,5) – low level (level 4). Quantitative and qualitative analysis of the research results indicated that 18.5% of children with neurotic stammering, 11.1% of children with neurosis-like stammering, 72% of children with normal speech are fluent in non-verbal communication, are able to reproduce rhythmic structures, express their emotions, show high level of auditory attention, imagination and communication during gaming activities. 20% of children with neurotic stammering, 15,6% of children with neurosis-like stammering and 28% of children with normal speech are at sufficient level of auditory attention, creative imagination, tempo rhythmic organization of motor activity. These children comprehend basic emotions, however, they cannot express them with facial expressions or gestures. They have a positive attitude towards role-playing games, are willing to participate in them and choose only secondary roles. 35.4% of children with neurotic stammering and 20% with neurosis-like stammering show significant violations of various parameters in movements, mild facial expressions, which proves deficiency in their emotional intelligence, their inability to clearly reproduce pace and rhythm, lack of creative imagination and unwillingness to participate in role-playing games. 26.1% of children with neurotic stammering and 53.3% of children with neurosis-like stammering show reduced auditory attention, mild facial expressions, are not able to recognize emotions and express them, repeat the exercises aimed at verifying rhythm and pace, even with the help. These children are lonesome and uncommunicative.

Thus, the analysis of the data obtained from the formative experiment has shown that the preconditions for tempo rhythmic organization of speech are not sufficiently developed in the children who stammer, since they are not emotionally and psychophysically ready for active participation in theatrical activities and require careful preliminary preparation for this matter. Therefore, it is vital to develop a special methodology of stammering correction by means of theatrical activities based on the development of physiological and intellectual preconditions required to establish tempo rhythm.

Theoretical and methodological basis of the experimental methodology consists of the complex method of rehabilitation for senior preschoolers who stammer in the system of corrective measures (Cheveleva, 1978; Krapivina, 1982; Leniv, 2010; Myronova, 2010; Vlasova, 1983; Zhuravleva, 2009); the organization of theatrical gaming and theatricalcommunicative activities (Artemova, 2005; Bohush, 2006; Havrysh, 2006); the educational role of theatrical activities in personality development (Rusova, 1996); specificity in the use of theatrical games in teaching children who stammer (Mukhina, 1974; Stanislavskyi, 1954; Venger, 1998); the modern concept of communication adopted in psycholinguistics, communicative approach to teaching children who stammer.

The main psychopedagogical conditions that ensure the effectiveness of stammering correction in senior preschoolers by means of theatrical activities were defined as follows: 1) creating a special methodology aimed at developing children's readiness for theatrical activities; 2) organizing a special gaming space under various conditions (halls with decorations based on Ukrainian fairytales, workshops on designing theatrical costumes, playgrounds equipped with items for displaying non-traditional theater types, a fairytale room); 3) using differentiated approach to children, taking into account the type of stammering, the degree of fixation on the speech defect, character, personal development, emotional state, the pace of development; 4) providing psychological support (conversations with children, elements of game therapy, music therapy as a means of normalizing the emotional state, overcoming the fear of motor and speech disorders); 5) ensuring comprehensive development of images, feelings, emotions, behavioural skills in children who stammer while implementing various means of theatrical activities into all activities in a preschool education institution; 6) selecting the tasks aimed at meeting the children's preferences and needs, promoting their cooperation with others.

The experimental methodology of stammering correction by means of theatrical activities involved preparatory, main and final stages.

The preparatory stage ensured the main condition for further corrective measures – developing the preconditions for tempo rhythmic organization of speech, creating emotional and positive environment, developing readiness for theatrical activities, which are defined as the system of knowledge and skills that will provide the children with the opportunity to participate in theatrical activities, to create an image in accordance with the scenic task and help them adapt to all the stages of theatricalization.

The objectives of this stage were sequentially and concurrently implemented into four sub-stages, which were determined in accordance with the stages of individual correction of speech during speech therapy classes: impaired speech, whispering, combined speech, reflected speech, independent speech. Each of the sub-stages involved three blocks of the objectives: block 1 – developing images and creative imagination, tempo rhythm, emotional sphere, intonational expressiveness, symbolic praxis during gaming activities; Block 2 – developing non-verbal means of communication; block 3 – training collective interaction during theatrical activities.

During the main stage, such fairytales as “Koza-dereza” (The Bully Goat), “Pivnykidvoiemysheniat” (The Cockerel and Two Little Mice), “Solomianybychok” (The Little Straw Bull) were staged. The children read fairytales, discussed their content, retold them partially or entirely, as well as studied illustrations, distributed parts and made costumes and decorations. The experimenter assisted the children in studying the scripts and always attended the rehearsals. Speech anxiety was desensitized during systematic rehearsals with the children behind the screen, which gradually dropped from rehearsal to rehearsal, which contributed to overcoming the fear of the performance. The rehearsals were held in the music hall, where fairytales were to be staged, and the children imagined it to be filled with spectators. It was obligatory to remind children of the rules of speech management.

The final stage involved the production of the fairytale with the participation of all the children in the group.

The experiment was conducted during the school year in senior groups of children who stammer in remedial preschool education institutions. The forms of organization were non-traditional classes, held two times a week in the afternoon (singing activities, motor activities, fairytales activities, distribution of parts and rehearsals), interviews with the children. Speech therapists, educators and a musical director implemented traditional tasks into the experimental methodology. The children’s parents were allowed to participate, too.

When the formative training was completed, the control diagnostic experiment was conducted, which allowed evaluating expediency and effectiveness of the applied methodology.

The effectiveness of experimental training was determined based on the comparison of the performance results of control tasks in the experimental (EG) and control (CO) groups. The EG involved 78 children who studied under the experimental methodology of stammering correction by means of theatrical activities. The CG involved 29 children who stammer from Uman preschool education institutions No 8 and 25. They underwent the course of stammering correction in speech therapy groups based on the methodology by S. Mironova.

The dynamics of the results from stammering correction in senior preschoolers in the EG and CG by means of theatrical activities was analyzed according to the following criteria:

1. The degree of stammering severity (mild, moderate, severe) in different communication situations: 1) recitation, 2) retelling, 3) role-playing games, 4) theatricalization after experimental training.
2. The degree of fixation on the speech defect.
3. Readiness to communicate (the child communicates constantly or occasionally; the child initiates communication; the child willingly engages with others based on the speech; the child refuses to communicate).

The experiment results have been quantitatively and qualitatively analyzed based on a four-point scale for evaluating.

In order to identify the degree of stammering in senior preschoolers under different communication situations, it was necessary to determine general levels of performance of the methodology tasks (high, sufficient, average and low) taking into account generally accepted methodological principles and evaluation criteria.

Results

Comparative data on the levels of stammering in senior preschoolers in the EG and CG under different communicative situations are presented in Figure 1.

The results obtained from the conducted correctional and developmental training show that there is a positive dynamics in overcoming stammering in the EG children.

The analysis of the data from the formative experiment showed that 71.1% of children with neurotic stammering and 57.6% of children with neurosis-like stammering in the EG reached sufficient level; only 35.3% of children with neurotic stammering and 16.7% of children with neurosis-like stammering – in the CG. Consequently, 26.7% of children with neurotic stammering and 26.3% of children with neurosis-like stammering reached the average level in the EG, 52.9% and 58.3% respectively – in the CG. Yet, 2.2% of children with neurotic stammering and 6.1% of children with neurosis-like stammering are still at the low level in the EG, 11.8% and 25% respectively – in the CG. Their anamnesis recorded neuromuscular disorders.

Quantitative indicators: children with neurotic stammering: 10 children from the EG completed the task at the high level (22.3% out of 45 children); 33 children– at the sufficient level (73.3% out of 45 children); 2 children– at the average level (4.4% out of 45 children); in the CG, 1 child completed the task at the high level (5.9% out of 17 children); 11 children – at the sufficient level (64.7% out of 17 children); 5 children – at the average level (29.4% out of 17 children). Children with neurosis-like stammering: 3 children from the EG completed the task at the high level (9.1% out of 33 children); 24 children – at the sufficient level (72.7% out of 33 children); 6 children – at the average level (18.2% out of 33 children). In the CG, 6 children completed the task at the high level (50% out of 12 children); 5 children – at the sufficient level (41.7% out of 12 children); 1 child – at the average level (8.3% out of 12 children).

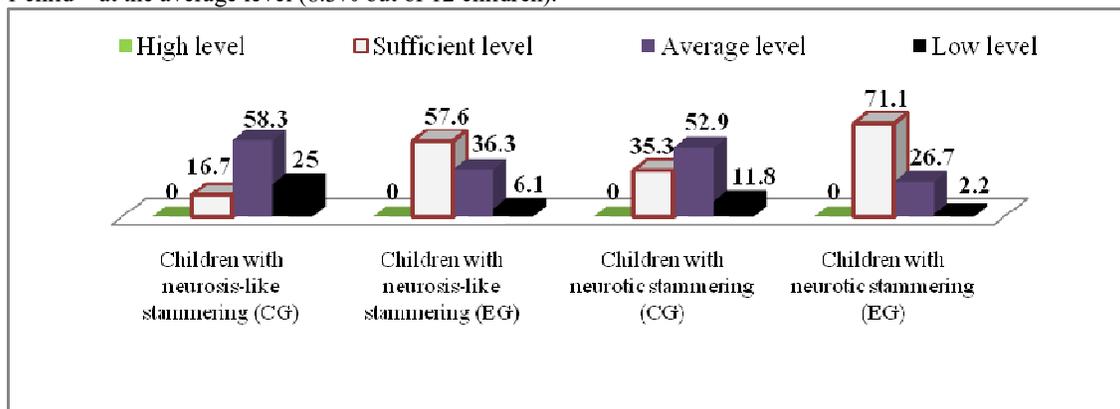


Fig.1. *Quantitative indicators of the levels of the stammering degree in senior preschoolers in the CG and EG under different communicative situations (%)*

Qualitative performance: 17.9% of children from the EG (n = 14, out of 78 children) and 6.9% of children from the CG (n = 2, out of 29 children) felt comfortable, did not stammer and were able to consciously, clearly and expressively read the verse by heart, correctly use the basic techniques of artistic reading. These children scored 4 points and were formed into 4 groups.

Discussion

The obtained results **confirm** modern researches by many scholars (Nechai, 2001; Artemova, 1991; Antipina, 2003; Makhneva, 2003; Sorokina, 2002; Chernykh, Folomeeva, & Sarkisova, 2014), which indicate theatrical activities present enormous opportunities for enriching and revealing creative potential in preschool children.

The research also **proves** the idea that a game is the main type of activity at the preschool age, which determines comprehensive development of child’s personality and creates an “area of immediate development” (Venger, Pilyugina, & Venger, 1988; Mukhina, 1975). The connection between theatrical and ordinary games is observed in studies, in which a children’s game is regarded as “mimic art”, “stylization of acting”, “child’s art”, “a form of primitive child’s art”.

The second group of the obtained indicators includes B. Teplov’s findings (1947). Theatrical activities are, in fact, a theater for oneself, which involves preparing a play and staging it “for the audience”. It is a powerful source of deep feelings and discoveries. It is a concrete result. However, it is equally important that theatrical lessons develop an emotional sphere of the child, encourage him/her to sympathize with characters and experience the events in play together with them. B. Teplov (1947) indicates, “these experiences result in relevant relationships and moral evaluations, which are more powerful than the evaluations acquired”. Thus, theatrical activities are an important means of developing empathy, that is, the ability to read the emotional state of the individual from facial expressions, movements, intonation, as well as the ability to put oneself in someone’s place in different situations. B. Teplov (1947) states, “to delight in someone’s good fortune and sympathize with someone, one must be able to put oneself in someone’s shoes”.

The results obtained from the pedagogical experiment confirm the findings by M. Halaidiuk et al. (2018) that gaming activities are more effective compared with traditional ones. The development of pedagogical mastery is rather important, too (Maksymchuk et al, 2018). This research confirms the inconsistency of specialists’ traditional training with the dynamic needs of today, as well as the unsatisfactory state of development of their pedagogical mastery.

The conducted research does not reveal all aspects of the problem of stammering correction by means of theatrical activities. The problems of improving differentiated content of corrective measures in accordance with various types of stammering, complicated by lack of communication skills, psychoneurological disorders and organizing various theatrical activities in the general system of educational space in speech therapy groups for children who stammer should be further developed.

Conclusions

The diagnostics methodology of the preconditions for tempo rhythmic organization of speech in children who stammer and their readiness for theatrical activities was scientifically justified and developed; in accordance with the objectives of the methodology, criteria and indicators of their development in the specified category of children were defined. Based on the materials of the ascertaining experiment, specificity of role-playing games for preschoolers, the level of development of tempo rhythmic motor activity organization, the ability to express emotions and regulate oneself, the ability to use non-verbal communication means based on images and imagination and to independently develop short simulation exercises were outlined.

Psychopedagogical conditions of stammering correction in senior preschoolers by means of theatrical activities were determined and scientifically justified; the methodology of stammering correction in these children by means of theatrical activities based on general didactic and special principles was developed and verified. It is represented by a staged system of exercises and tasks aimed at developing children's emotional and volitional spheres, tempo rhythm, images and creative imagination, the ability to use non-verbal means of communication, symbolic praxis during gaming activities, promoting collective interaction during theatrical activities, developing creative skills, norms and rules of conduct during gaming activities and staging of fairytales, which reflect life phenomena and relationships between individual, independent forms of communication. The content of theatrical activities was elaborated. Theatrical performances were organized and conducted with active participation of senior preschoolers.

By comparing quantitative indicators of stammering in senior preschoolers with neurotic and neurosis-like stammering, it was possible to trace noticeable improvements in speech in the EG. In contrast to the CG children, the EG children significantly improved their ability to overcome fears, control themselves while speaking, establish contacts and communicate by verbal means with peers and adults.

It is found that effectiveness of overcoming stammering by means of theatrical activities is mainly determined by the type of stammering (neurotic or neurosis-like), its influence on the child's mental development and their communicative function.

So, the analysis of research findings shows that stammering correction in senior preschoolers is effective due to gaming and theatrical activities that assist in relieving tension and fear of speaking, significantly increase children's motivation towards self-control, effectively influence development of speech breathing, create conditions that improve tempo rhythmic basics of speech, motor and communication skills, enhance development of children's productive activities (speech, music and painting activities).

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