

# Formation of Speech Activity in Older Preschool Children with Autistic Disorders Formation of Speech Activity in Older Preschool Children with Autistic Disorders

Nataliia BAZYMA<sup>1</sup>, Larysa ZDANEVYCH<sup>2</sup>, Kateryna KRUTY<sup>3</sup>, Tetiana TSEHELNYK<sup>4</sup>, Oksana POPOVYCH<sup>5</sup>, Viktoriya IVANOVA<sup>6</sup>, Nataliia CHEREPANIA<sup>7</sup>

<sup>1</sup>National Pedagogical Dragomanov University, Kiev, Ukraine, [bazymanataliia@gmail.com](mailto:bazymanataliia@gmail.com)

<sup>2</sup>Khmelnyskyi Humanitarian-Pedagogical Academy, Khmelnytskyi, Ukraine, [larisazdan@ukr.net](mailto:larisazdan@ukr.net)

<sup>3</sup>Vinnysia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnysia, Ukraine, [katerina.kruty@gmail.com](mailto:katerina.kruty@gmail.com)

<sup>4</sup>Khmelnyskyi Humanitarian-Pedagogical Academy, Khmelnytskyi, Ukraine, [sveettana@ukr.net](mailto:sveettana@ukr.net)

<sup>5</sup>Mukachevo State University, Mukachevo, Ukraine, [ksysha31071984@ukr.net](mailto:ksysha31071984@ukr.net)

<sup>6</sup>Mukachevo State University, Mukachevo, Ukraine, [vika-ivanova@ukr.net](mailto:vika-ivanova@ukr.net)

<sup>7</sup>Mukachevo State University, Mukachevo, Ukraine, [nataliacherepan@gmail.com](mailto:nataliacherepan@gmail.com)

**Abstract:** *The main condition for personal and mental development of a child is preservation of speech function or, in case of speech pathology, correction and development of all its structural components as a full-fledged means of communication. The purpose of the study is to scientifically substantiate, develop and experimentally test psychological and pedagogical conditions and methods of formation of speech activity in children with autistic disorders of older preschool age. There were highlighted effective methods for speech activity formation: creation and maintenance of a speech environment; constant speech support of a child; teaching a child to express thoughts in any way possible; use of stimulants and incentives in order to increase motivation for speech activity; use of available child's vocalizations; use of echolalia and a tendency to stereotypical repetition of actions; stimulation of speech activity against the background of emotional recovery; development of speech activity by imitation; activation of passive vocabulary and its gradual translation into active; fostering initiative and desire for self-realization. The indicators of the formation level of speech activity components in EG compared with CG, respectively, are: motivation: high not found, sufficient: + 8.6%, average: + 19%, low: + 14.3%, zero - 41.9%; initiative: high not found, sufficient: + 10.7%, medium: + 13.8%, low: + 9.5%, zero - 34%; content: high: + 4.3%, sufficient: + 17.6%, medium: + 12.9%, low: - 27.3%, zero - 7.5%. The best indicators were achieved by children of the experimental group, which gives reason to assert the effectiveness and feasibility of using the proposed methodology for formation of speech activity in the process of correctional developmental education of children with autistic disorders.*

**Keywords:** *speech environment; accompaniment of a child's activities; increasing motivation; child's vocalization; stereotypical repetition; nurturing initiative.*

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## Introduction

At the present stage of development of the Ukrainian state, one of the priority areas of state policy is the modernization of education to ensure comprehensive harmonious development of the personality of a child. It is known that the main condition for the child's personal and mental development is the preservation of speech function or, in case of speech pathology, the correction and development of all its structural components as a full-fledged means of communication.

Observation of scientific development and research dynamics made it possible to ascertain the increased attention of scientists to the problem of autism and autistic disorders. Theoretical analysis and generalization of scientific research on the problem of studying communication disorders in children with psychophysical disabilities testifies to the particular importance of the formation of communication sphere in children with autistic disorders (Baenskaya, 2001; Bashina, & Tiganov, 2005; Bessmertnaya, 2008; Bogdashina, 1999; Dushka, 2013; Isaev, & Kagan, 1975; Kagan, 1996; Karvasarskaya, 2003; Vedenina, & Kostin, 2003).

But, despite a comprehensive study of the personality of a child with autistic disorders, a direct study of speech activity has remained somewhat outside the scope of scientists. Analysis of scientific and methodological literature shows that in special psychological and pedagogical literature pedagogical conditions and theoretical and methodological foundations of the speech formation activity in children with autistic disorders are not defined and justified.

Summarizing the research of scientists (Skripnik, 2008; Ostrovskaya, 2013; Khvorova, 2010; Sheremet, 2011; Shulzhenko, & Sheremet, 2011; Sheremet et al., 2019; Melnyk, 2019), we distinguish characteristic manifestations of autism in senior preschool age:

- lack of mental activity;
- mental functions interaction defection;
- irregularity, partiality of intellectual development;
- gross defects of focus and randomness of attention;;
- lack of lively interest, interest in the new, environmental research;
- tendency to perceive information as if passively absorbing it in whole blocks;
- reaction of departure from the influences of an environment directed on the child;;
- negative reaction or no reaction at all when trying to draw attention to the objects of the surrounding reality;

- rapid exhaustion and oversaturation with any purposeful activity;
- difficulty concentrating;
- difficulties in symbolization, transferring of skills from one situation to another;
- impaired formation of social and communicative functions.

It is known that communicative function disorder negatively affects cognitive activity, which, in its turn, causes a decrease in the quality of assimilation of new information, including learning.

Having analyzed many scientific studies, it is possible to determine the multiplicity and variety of speech defects in children with autistic disorders. But, despite the fact that development of speech in autistic children can differ significantly: from turbidity to extremely early and rapid development, we can describe its most characteristic disorders, which include: difficult to interpret crying; limited barking (may resemble exclamations, screams, squeaks); lack of imitation of sounds or phonography of speech (unconscious reproduction of speech of others, which does not correspond to the context); mutism (lack of speech); echolalia (repetition of heard words and phrases, sometimes without understanding their meaning and without attachment to the context); words-stamps, phrases-stamps; extensive use of neologisms; late appearance and incorrect use of personal pronouns; lack of accost in speech, inability to conduct a dialogue with sufficient development of monologue speech; speech autonomy; speech semantic side defects; speech syntactic structure defects; speech grammatical structure defects; inability to form words; speech disorders; speech melody disorders (voice too quiet or too loud); speech prosodic components defects (deviation of tonality, speed, rhythm, intonation transfer).

But, despite a comprehensive study of the personality of a child with autistic disorders, a direct study of speech activity has remained somewhat out of attention of scientists. According to our predictions, a child with autistic disorders of older preschool age due to the peculiarities of communicative and behavioral areas will show a low level of speech activity, which can be explained by limited language experience and lack of knowledge about language and its use in communication.

We understand the term “speech activity” in the sense of presence of a motive for speech utterance and direct speech utterance, which may occur as a reaction-response to the interlocutor’s remark or as a desire to inform the interlocutor of their own thoughts, experiences, emotions, needs.

Thus, the problem of formation of speech activity in children with autistic disorders of older preschool age requires further special research.

The purpose of the study is to scientifically substantiate, develop and experimentally test psychological and pedagogical conditions and methods of forming speech activity in children with autistic disorders of older preschool age.

## **Materials and methods**

The purpose of the diagnostic-modeling (ascertaining) stage of the study was to study the state of speech activity in older preschool children with autistic disorders in comparison with peers without speech disorders. Accordingly, the tasks were set: to survey children with autistic disorders of older preschool age in order to determine their state of speech activity, to carry out a comparative analysis of speech activity in older preschoolers with autistic disorders and their peers with normal speech development, to determine the state and features of speech activity in children of the specified category, summarize the results. The following methods were used: survey of parents, educators, speech therapists, psychologists, correctional teachers using a questionnaire; study of children's personal affairs; psychological and pedagogical experiment aimed at studying speech activity of children with autistic disorders of older preschool age. The survey was conducted in a spontaneous situation and in specially organized conditions. In total, the experiment at this stage covered 162 children: 76 children with autistic disorders and 86 children with normal speech development.

Based on the synthesized data on the state of development of communicative activity in general and speech in particular, obtained in the process of analysis of special literature, the main components of speech activity were identified, which included: motivation, initiative and content.

To determine the level of formation of each speech activity component there were identified appropriate criteria with the indicators for each of it. The criteria were: motivational (desire to show individuality, express themselves; desire to communicate and interact (verbally and/or nonverbally); positive attitude to the proposed task and desire to perform it; independence in speech; initiative in speech), cognitive (ability to logical-consistent coherent utterance in compliance with lexical and grammatical norms; use of the most accurate and precise words and phrases; use of intonation means of expression and pause), semantic (impressive side of speech: the degree of completeness of the task; ability to perform situational and non-situational instructions; understanding names of objects, actions, qualities and properties of objects, spatio-temporal relations and the ability to find and demonstrate relevant drawings or objects, understanding the names of actions and the ability to perform appropriate actions, expressive

side of speech: use of appropriate language units in speech, sufficient vocabulary (according to age and program requirements) of nouns, verbs, adjectives and their use in speech; ability to change words and word formation; ability to monologue and dialogic speech; opportunity to fully, consistently, logically express their thoughts); strong-willed (interest in the new, in study of the environment; purposefulness and persistence in performing the proposed tasks; desire to perform tasks correctly and completely), communicative (ability to communicate; initiative in the process of communication; ability to maintain a conversation on a given topic; ability to speak according to the situation ). According to the quality of tasks and assessment according to the developed criteria, five levels of formation of speech activity components in children with autistic disorders of senior preschool age were identified: high, sufficient, medium, low and zero.

The purpose of the approbation-generalizing (formative) stage was to develop a content of correctional and developmental methods of speech activity formation in children with autistic disorders, its theoretical substantiation and verification of effectiveness; definition and substantiation of psychological and pedagogical conditions for the formation of speech activity. Analysis of pedagogical, psychological and sociological literature on this topic, along with the data of diagnostic-modeling (ascertaining) stage of the experiment allowed to determine stages of correctional and developmental methods: research and diagnostic, correctional and functional-speech. Each stage of work had its own purpose, tasks, directions, methods and techniques, but included common directions of gradual formation of speech activity and was subordinated to a common goal. The formation and development of speech activity was carried out using a series of tasks, which consisted of exercises and games with varying degrees of complexity, classes were conducted individually.

The purpose of the research and diagnostic stage of the method was to establish and maintain emotional contact with children with autistic disorders, formation of motivation to interact and communicate with available verbal and nonverbal means. The content included exercises and games aimed at establishing contact with children with autistic disorders, forming and consolidating a reaction to the name, developing the ability to make contact, use instructions, development and correction of auditory attention and the ability to imitate, developing the ability to respond to questions (verbally or non-verbally), developing a desire to communicate and interact (verbally and / or non-verbally) with an encouragement to direct verbal communication, expansion and clarification of passive vocabulary.

The purpose of the correctional activity stage provided for the parallel formation of the components of speech activity: motivation, content, initiative. Content included exercises and games aimed at increasing motivation to interact and communicate, the transition from available communication skills to the use of direct speech; use of sound imitations, one- and two-syllable words, words "yes" and "no", pronoun "I", expansion of passive and active vocabulary, development of skills to answer questions, formation of basics of grammatical construction of speech and primary skills to build phrases.

The purpose of the functional-speech stage took into account diagnostics and consolidation of the achievements of a child with autistic disorders in relation to the speech activity components formation. The content included exercises and games aimed at further expanding the passive and active vocabulary, improving the grammatical side of speech, developing the ability to phraseological dialogic and monologue speech, developing initiative and activity in communication, the ability to maintain conversation on a given topic and express their thoughts consistently, logically, according to the situation.

We determined psychological and pedagogical conditions of the corrective approach to the formation of speech activity in children of this category, namely: monitoring the child and direct interaction with him and an objective assessment of the dynamics of the development of speech activity in a child with autistic disorders; structuring corrective action based on the information received during the examination and monitoring the child; creation of an adequately organized environment for corrective action (structuring of the regime, time, space) correlation of the child's emotional state in order to form motivation for assimilation of new speech material and increase speech activity; the use of autostimulations as an integral part of the behavior of a child with autistic disorders in order to fill it with a new meaning, which will become the basis for the formation of speech activity; using an appropriate number of tasks, the change of which would precede the oversaturation of the impressions of a child with autistic disorders; phased task presentation with the obligatory use of stimulation as a method of forming motivation for interaction and direct speech activity; relationship in the work of specialists and parents of children with autistic disorders; stimulation of speech activity, taking into account the peculiarities of the communicative-related activity of a child with autistic disorders.

Along with this, there were identified effective methods of forming speech activity: creating and maintaining a speech environment; constant speech support of a child's activity; teaching a child to express thoughts in

any way available to him; application of stimulants and incentives to increase motivation for speech activity; use of available vocalizations of the child; use of echolalia and tendency to stereotyped repetition; stimulation of speech activity against the background of emotional uplift; development of speech activity by imitation; activation of passive vocabulary and its gradual transfer to active; development of initiative and desire for self-realization.

84 children with autistic disorders of senior preschool age were involved in the experimental-generalizing (molding) stage of the experiment: 46 children entered the experimental group (EG), 38 children were in the control group (CG). Diagnostics in order to identify the levels of formation of the components of speech activity in children with autistic disorders of the senior preschool age made it possible to evaluate and monitor the dynamics of the formation and development of speech activity, which revealed significant positive changes in EG children that affected general characteristic of the formation of speech activity.

To ensure the validity of the provisions and conclusions and solve certain problems, the following research methods were comprehensively used: theoretical: analysis, systematization and generalization of the data of general and special psychological and pedagogical literature in order to identify the state of the problem under study; analysis of curricula, corrective techniques and teaching aids in order to clarify modern approaches to corrective work with children of senior preschool age with autistic disorders; synthesis, abstraction and concretization - for the theoretical justification of the methodology for the formation of speech activity; empirical: targeted monitoring of the educational process and game activities of senior preschool children with autistic disorders and normal development, questionnaires (based on copyright questionnaires) of parents, speech therapists, psychologists and educators, psychological and pedagogical experiment (ascertaining and formative) in order to justify and testing psychological and pedagogical conditions and methods for the formation of speech activity in children with autistic disorders of senior preschool age (the author's two-stage methodology for determining the level of speech activity); statistical: quantitative and qualitative analysis and synthesis of experimental data, methods of statistical analysis.

## Results

The number of children with low and zero levels of speech activity content amounted to 63.1% (18.4% and 44.7%, respectively) of the total number of children with autism disorders examined. These are children who do not use speech as a means of communication (18.4%) and children who

use only sound imitation, sound complexes and vocalizations in speech (44.7%). Zero initiative level of speech activity was demonstrated by 57.9% of the examined children, and zero level of motivation of speech activity was demonstrated by 65.8% of the examined children. The differences in percentages are explained by the fact that the presence of onomatopoeia, sound complexes and vocalizations as a child's attempts to share their impressions and experiences and the use of speech stamps or echolalia in order to establish contact with people around us was considered by us as a manifestation of a "peculiar" monological speech; and the ability to answer questions even with a single word or with the help of onomatopoeia, sound complexes and vocalizations, using prompts and adult help, with the characteristic use of speech stamps and echolalia in the answer, was regarded as the ability for dialogical speech.

Studying speech activity of children with autistic disorders of senior preschool age, we were able to highlight its features: reduced ability to communicate; a decrease in the desire to show one's personality, to express oneself; decreased initiative in the process of communication; contactivity disorders and selective contactivity; decrease in initiative and independence in speech utterances; decreased ability to maintain a conversation on a topic, speaking out in accordance with the situation; unsustainable interest in interaction; limited understanding of the objects names, the names of actions, the names of the qualities and properties of objects and spatio-temporal relations and ability to find and demonstrate appropriate drawings or objects; limited understanding of action names and ability to perform appropriate actions; selective reaction to accost; to own name; inconsistency with the age indices of the use of necessary language units in speech; presence of echolalia, phrase-stamps, autonomous speech; presence of non-communicative speech; limited or lack of use of the words "yes", "no" in speech; insufficient vocabulary (according to age and program requirements) of nouns, verbs, adjectives and their limited use in speech; limited understanding and observance of lexical and grammatical norms of the mother tongue; decreased ability of a child to inflection and word-making; peculiarities in using intonational means of expression and pause; peculiarities of a coherent statement; reduced ability to fully, consistently, logically express their thoughts. Children with autistic disorders are usually not capable of full communication, in particular, speech. It is difficult for them to enter into interaction, attract attention, communicate their needs, emotions or experiences. They do not always choose adequate methods of interaction, mainly wielding a limited set of learned patterns of behavior, which sometimes turn out to be inappropriate situations. Summing up the results of the



diagnostics of the state of speech activity formation, we obtained experimental data that showed the variability and mosaic formation of the components of speech activity in each child of the experimental group.

Analysis of the study data on the motivation of speech activity revealed: no children with a high level were recorded, a sufficient level was found in 21.7% of children in EG and 13.1% of children in CG (the difference is 8.6%), an average level was observed in 34.8 % of EG children and 15.8% of CG children (the difference is 19%), a low level was recorded in 19.6% of EG children and 5.3% of CG children and zero level was found in 23.9% of EG children and 65.8 % of CG children. The study of the initiative of speech activity showed the following results: no child showed a high level, 37% of children in EG, along with 26.3% of children in CG, found a sufficient level (the difference is 10.7%), 21.7% of children with EG and 7 , 9% of CG children had an average level (the difference is 13.8%), 17.4% of EG children and 7.9% of CG children showed a low level, 23.9% of EG children along with 57.9% of CG children showed zero level. The analysis of the content of speech activity showed: 4.3% of children in EG showed a high level, when among children of CG such was not detected, 41.3% of children in EG and 23.7% of children in CG were sufficient (the difference is 17.6%), 26.1% of EG children and 13.2% of CG children showed an average CG level (the difference is 12.9%), a low level was demonstrated by 17.4% of EG children and 44.7% of CG children, zero level was found in 10.9% of children in EG and 18.4% of children in CG.

Thus, the results of the experiment showed that although children with autistic disorders of senior preschool age did not achieve a high level of speech activity, children with a sufficient level of speech activity were identified in the EG, the number of children with an average level of speech activity increased and the number of children with zero level of speech activity decreased. During the processing of experimental data, the following results were obtained, which are shown in table 1:

**Table 1.** Comparison of speech activity components formation levels in children with CG and EG, in%.

Children's groups	Equal				
	High	Sufficient	Average	Low	Zero
Speech activity motivation					
EG (46)	-	21,7	34,8	19,6	23,9
CG (38)	-	13,1	15,8	5,3	65,8
Speech activity initiative					
EG (46)	-	37	21,7	17,4	23,9

CG (38)	-	26,3	7,9	7,9	57,9
Speech activity content					
EG 46)	4,3	41,3	26,1	17,4	10,9
CG (38)	-	23,7	13,2	44,7	18,4

Systematized by the authors

As a result of mathematical processing of experimental data on the Fisher angular transformation and Student t-test, it turned out that after the experiment in the EG there were significant changes in the manifestation of the studied levels of initiative, motivation and content of speech activity, while the differences between the EG and the CG became random and statistically significant. Thus, changes in indicators in the number of children in accordance with the levels of development of speech activity components when comparing results of the formative and ascertaining stages of the study suggest a positive dynamics in the formation of speech activity in children with autistic disorders of older preschool age.

The results of the formative experiment indicate that in the conditions of specially organized, focused, consistent and systematic correctional development work according to the proposed method, the level of speech activity in children with autistic disorders increases, although the qualitative and quantitative indicator of such changes in each of the components turned out to be rather heterogeneous. That is, the formation of each component of speech activity in 14 children of this category is largely determined directly by autistic characteristics and their impact on mental development and communicative-speech function. Thus, we can conclude about the effectiveness of the proposed correctional-developing methodology as such, which may be appropriate in organizing the educational process of older preschool children with autistic disorders.

## Discussion

*The scientific novelty* of the obtained research results is that:

- *for the first time* the peculiarities of speech activity in children with autistic disorders of senior preschool age, stages and pedagogical conditions of its formation are determined; differences in the peculiarities of the formation of speech activity in older preschoolers with autistic disorders and in older preschoolers with normal speech development;

- *a methodology* for the formation of speech activity in children with autistic disorders of senior preschool age was substantiated, developed and experimentally tested, taking into account the identified differentiated psychological mechanisms of the underdevelopment of the speech system;

- *the content* of the components of speech activity in children of older preschool age was clarified, methods and techniques for the formation of speech activity in children with autistic disorders of senior preschool age were selected and adapted in the conditions of correctional and developmental classes;

- *Improved methods*, techniques and means of forming speech activity in children with autistic disorders of senior preschool age.

*Practical significance of the obtained results is:*

- development of a questionnaire for people interacting with children with autistic disorders, a two-stage methodology for determining a level of speech activity of children with autistic disorders of senior preschool age, which can be used to develop diagnostic methods for studying the communication of children with autistic disorders and children with psychophysical development disorders of preschool age of various nosologies;

- experimental determination of the characteristics of the speech activity of children with autistic disorders of senior preschool age, which can be used in the differential diagnostics of the communicative development of children with autistic disorders;

- development of psychological and pedagogical conditions and special methods of speech activity for children with autistic disorders of senior preschool age, which can be used in the process of correctional and developmental education of children with autistic disorders of senior preschool age by correctional teachers and special psychologists of special preschools, educational and rehabilitation centers attended by preschool children with autistic disorders;

- possibility of using the teaching aids prepared by the results of the dissertation research by educators, correctional teachers, psychologists of special preschool institutions, which are attended by preschool children with autistic disorders;

- possibility of using the obtained results when teaching professional courses in higher educational institutions in the direction of “Corrective education. Speech therapy”, as well as in the preparation of correctional teachers, in particular, speech therapists in the system of postgraduate pedagogical education.

## **Conclusions**

An analysis of special psychological and pedagogical scientific and methodological literature and modern approaches to the education and upbringing of children with autism suggests that the problem of the

formation of speech activity in children with autistic disorders of older preschool age is quite relevant. The large number and variety of speech developmental defects in children with autistic disorders against the background of mental, communicative, and behavioral spheres, in our study, affects the lowered level of speech activity, can be explained by the limited language experience and insufficient knowledge of the language and its use in the communication process along with specificity speech development.

Analyzing scientists' research on the speech development of children with autistic disorders, we determine a disorder of the communicative function of speech, which manifests itself as an inability to fully understand verbal information (weakness or complete lack of reaction to adult broadcasting along with increased sensitivity to non-speech sounds, lack of understanding of simple everyday instructions and inverted speech) and in the impossibility of adequately forming a speech utterance and interacting with other people in accordance with the situation. According to the term "speech activity", we consider in the sense of the presence of a motive for a speech utterance and a direct speech utterance, which can occur as a response to the interlocutor's remark or as a desire to inform the interlocutor of his own thoughts, feelings, emotions, needs.

Focusing on speech activity, it was established that the motive is the initial for any speech utterance, that is, the need to express some specific meaning in the speech utterance; initiative, that is, the opportunity (and desire) to express in thoughts, experiences, emotions; content, that is, the fullness of their own speech utterance. Based on this, the components of speech activity are defined: content (using the appropriate language units), motivation (ability to dialogic speech), initiative (ability to monologue). It was established that in children with autistic disorders, speech activity is not always formed and develops spontaneously, which requires competent assistance from specialists.

Conducting psychological and pedagogical experiment based on the author's questionnaires and the author's two-stage methodology for determining the level of speech activity of children with autistic disorders of senior preschool age, the analysis of the data of which showed that children with autistic disorders of older preschool age are at a significantly lower level of speech activity compared with their peers without psychophysical disorders. Based on the research materials, several levels of development of the components of speech activity were identified: high (age norm mainly), medium, sufficient, low, zero, and their specificity was characterized. It has been proven that children with autism with older preschool children have

the characteristics of the formation of speech activity of varying degrees of manifestation.

The most optimal features and psychological and pedagogical preconditions, effective methods of formation and development of speech activity in children with autistic disorders of senior preschool age are established (determined) and scientifically substantiated.

The correctional and developmental method of formation of speech activity in children with autistic disorders of senior preschool age has been developed, which has appropriate stages of implementation with its own purpose, tasks, directions, methods and techniques: research-diagnostic, correctional-activity and functional-speech. Given the heterogeneity of the category of children, an individual form of classes was proposed with the ability to vary the time to move from stage to stage.

The effectiveness of the developed correctional and developmental method of speech activity formation in children with autistic disorders of senior preschool age is experimentally proven based on the positive dynamics of the levels of speech activity of children with autistic disorders of older preschool age, which was observed when comparing the results of diagnostic-modeling (ascertaining) and approbation-generalizing (formative) stages of our experiment. The best results were achieved by the children of the experimental group, which gives grounds to assert the effectiveness and expediency of the use in the process of correctional and developmental education of children with autistic disorders of the proposed method of speech activity formation.

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# МУКАЧІВСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ

89600, м. Мукачево, вул. Ужгородська, 26

тел./факс +380-3131-21109

Веб-сайт університету: [www.msu.edu.ua](http://www.msu.edu.ua)

E-mail: [info@msu.edu.ua](mailto:info@msu.edu.ua), [pr@mail.msu.edu.ua](mailto:pr@mail.msu.edu.ua)

Веб-сайт Інституційного репозитарію Наукової бібліотеки МДУ: <http://dspace.msu.edu.ua:8080>

Веб-сайт Наукової бібліотеки МДУ: <http://msu.edu.ua/library/>