

Formation of Children's Speech Creativity by Means of Modern art and Game Material in Preschool Educational Institutions of Ukraine

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Abstract: *The article reveals that the formation of children's speech creativity in preschool educational institutions is a topical and important educational problem in Ukraine. The significant role of modern art and game material (hereinafter referred to as MAGM) in the development of preschool children's speech creativity is studied. The important results of the study are the allocation of the author's classification of MAGM; elaboration of an effectively proven model of developing children's speech creativity of middle and senior preschool age by means of MAGM in preschool educational institutions (hereinafter referred to as PEI); development of content and methodological support for the formation of children's speech creativity – the author's programme for the formation of preschool children's creativity «Mag_i_Ya» (which means «Magic and I» in Ukrainian) and the author's magnetic art and game material «Formag» (by V. Kramarenko). The elaborated model of development of children's speech creativity by means of MAGM in Ukrainian PEI had the following structural components: target, stimulation and motivation, content, operational-activity, control and regulatory, and evaluation-resultative. The purpose of the model had specific tasks: 1) to implement appropriate psycho-emotional development of children of middle and senior preschool age; 2) to form certain personality-behavioural qualities in preschoolers; 3) to form artistic and activity skills in children of middle and senior preschool age. To test the effectiveness of the model, a pedagogical experiment was organised with 196 children aged 5-7 years from six PEIs in Poltava and Kremenchuk (Poltava region, Ukraine; 2019-2021). The presented model of formation of children's speech creativity of 5-7 years old by means of MAGM in PEI has proved its effectiveness in terms of implementation of integrated and activity approaches in the development of children's speech creativity by means of MAGM; establishment of partnership between the educator and children in the formation of speech creativity by means of MAGM; introduction of vitagenic methods of preschool children's development with the involvement of MAGM. The theoretical provisions of the study, conclusions and methodological recommendations can be used in the professional training of future teachers for the formation of preschoolers' speech competence, by methodologists, educators in planning and implementing educational activities of the relevant age groups and group work in PEI.*

Keywords: *speech creativity, creative development, formation of speech creativity, creativity, creative abilities, creative development, creative activity, art, gaming activity, play, toy, modern art and game material, preschool age, preschool children, preschool education institution.*

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Introduction

The relevance of this study is determined by the socio-political and economic challenges that accompany the development of Ukraine, as well as the processes of reforming the national education system. The growing demands on the personality of a citizen of the Ukrainian state emphasize the importance of preschool education in the formation of children's creativity as a fundamental personal ability. The current regulatory support of preschool education in Ukraine (Laws «On Education», «On Preschool Education», the Basic Component of Preschool Education and educational programmes for use in PEI) defines the formation of creativity from preschool childhood as one of the priority tasks.

The national education sector is reorienting itself to grow a competent personality that is able to face life's challenges and solve them in the best way – i.e., in a way that is natural for the child's psyche and socio-cultural development trends. The «primary» general creativity develops at the age of 6-7 years under the influence of favourable factors that do not limit the child's free play and choice by stereotypes and expectations of adults. The emergence of a variety of game material for children's creativity in the modern mass market encourages scientific and pedagogical research on its use. In this regard, there is a need to enhance theoretical and methodological approaches to the utilisation of contemporary means of creative activity among preschool children in the context of fostering their speech creativity. This involves the creation of effective methodological models and technologies that will contribute to the formation of preschoolers' ability to generate original speech utterances, express their own thoughts and emotions in an innovative way. This approach is consistent with both the natural interests of the child and global trends in the development of preschool education in the context of modern civilizational progress.

The analysis of theoretical generalizations and practical study of the state of formation of children's creativity in the PEI of Ukraine revealed *contradictions* between: the general demand of Ukrainian society for citizens with creative abilities and the slow pace of solving relevant problems in the educational environment of PEI; the need to form creativity in children of 5-7 years of age and the imperfection of theoretical and methodological foundations of its formation as an integrated personal quality in the conditions of PEI; the high potential of modern art and game materials in the formation of children's speech creativity and the lack of appropriate scientific and methodological support for their use in the Ukrainian PEI.

The article elucidates the issue of cultivating speech creativity in preschool educational institutions of Ukraine through the utilization of contemporary art and game materials (MAGM). This subject matter is of particular relevance international context, given: the global emphasis on cultivating of creative abilities from an early age, as evidenced by the research of prominent scholars such as Kaufman & Beghetto (2013), Eysenck (1993), Guignard & Lubart (2007). The article contributes to the existing discourse through the introduction of novel experimental approaches; the utilization of integrated approaches, encompassing integrative and activity-based methodologies, aligns the Ukrainian educational system with international trends, such as the "humanities-centered" approach to preschool education. Additionally, the article proposes the implementation of a practical tool: the author's program, entitled "Mag_i_Ya", which demonstrates adaptability to international educational systems.

The authors' scientific approach is predicated on the integration of international theories, such as Maslow's theory of creativity. However, there are aspects that merit further development. These include a more in-depth comparative analysis with contemporary foreign approaches, such as STEAM, as well as expanding the application of the methodology to children of other age groups, including those before and after preschool age. Additionally, further research is necessary to investigate the potential of MAGM in the context of inclusive education.

The article makes a significant contribution to the development of scientific substantiation of preschool children's speech creativity. The results of the study not only expand knowledge in the field of preschool education and contribute to the improvement of practical methods that can be adapted internationally.

The authors' own contribution to the study is twofold. Firstly, they have developed a model for the formation of speech creativity that includes structural components covering motivational, content, operational and effective aspects allowing for the development of complex speech and creative abilities in preschool children. Secondly, they have provided an empirical base for their claims through a pedagogical experiment was conducted with 196 children from six preschool institutions, which confirms the effectiveness of the program. The observed improvement in creativity, as evidenced by a significant decrease in the proportion of children with low levels from 40.32% to 18.35%, serves as a compelling evidence of the program's efficacy. Thirdly, the proposed methodology is characterized by its practicality, offering a framework that can be seamlessly integrated into the

professional development of teachers, thereby ensuring a sustained enhancement in the quality of preschool education.

Literature review

The problems of psychological and pedagogical characteristics of creativity have become the subject of research by American and European scholars: Kaufman & Beghetto (2013), Dorfman (2008), Eysenck (1993), Guignard & Lubart (2007), etc.

Psychologists - Altshuller (1986), Moliako (2008), Chervonna (2008), educators - Havrysh (2022), Hnizdilova & Sulaieva (2021), Dykhta-Kirff (2018), Zimakova & Kramarenko (2021), Semenov (2017), Pasichnichenko (2021), Polovyna (2018), Shulha (2015) and others have devoted their scientific research to the study of the processes of developing the creativity of preschool children by focusing on the inexhaustibility of the individual's capabilities through the formation of creative abilities from an early age.

But at the present stage in Ukraine, the question of finding and using new approaches and technologies for the formation of preschool children's speech creativity has arisen. In this aspect, the means of contemporary art and artistic practices in the conditions of PEI can intensify the formation of speech creativity in children aged 5-7 years and comprehensively influence the psycho-emotional, personal and activity-behavioural aspects of their development. According to Abraham Maslow's theory of creativity, although the creative orientation of a personality is innate, it is lost by most people under the influence of an environment that does not provide opportunities for its formation.

In preschool age, creativity as the ability of the individual is formed through play – a powerful guide to the world of future discoveries and endless possibilities. Children's play ensures the development of each child's worldview, promotes the emergence of extraordinary, friendship, partnerships and interest-based play groups, encourages the exchange of ideas, evaluation of oneself and others, encourages improvisation, expression of one's own value judgements, emergence of new ideas and means of their implementation. These are signs of the formation of speech creativity. The more interesting and extraordinary the visual, sensory game image, the more a preschooler can imagine and fantasize with them, the wider the play opportunities, the richer the way of self-expression and self-realisation of a child, which is proved by scientific conclusions of pedagogues Bieliienka et al., (2015), Hnizdilova (2021), Zimakova & Kramarenko (2020), Yu. Kotelianets (Kotelianets, 2020), etc.

The professional communicative and speech training of future educators and teachers for the speech development of children aged 5-7 is also an urgent problem in Ukraine. This issue has been explored in the context of contemporary art by N. Kovalevska, O. Tupytsya and Y. Mokhirieva in their work "Communicative-speech future educator training for social adaptation of 5- to 7-year-old children by means of modern art" (Zimakova et al., 2021).

The concepts delineated in this article are founded on contemporary research in the domain of preschool education, specifically as articulated in the systematic review «Learning through Play in Early Childhood: A Systematic Review» (Yee et al., 2022) by Lee Jia Yee, Nor Mashitah Mohd Radzi, Nordin Mamat. This review encompasses the utilization of playful methodologies in fostering the development of preschool children, including the development of communicative competence. The issue of preschool children's creativity in artistic activities was studied by Paul A. Howard-Jones, Jayne R. Taylor and Lesley Sutton in «The effects of play on the creativity of young children» (Howard-Jones et al., 2022). The significance of early development of language skills and literacy, which are fundamental to numerous cognitive, behavioral and socio-emotional developmental outcomes, is explored in J. Finders, E. Wilson, R. Duncan, «Early childhood education language environments: considerations for research and practice» (Finders et al., 2023).

The research in the article is unique in comparison with international studies. The article proposes a novel model for the creativity development of preschool children, utilizing modern art and game material. This approach aims to promote the harmonious development of preschool children through psycho-emotional, artistic and behavioral components, a rarity in international practice. It is adoptable to the educational systems of other countries, particularly those that endorse integrative approaches to preschool education.

The Ukrainian experience, as outlined in this article, can be integrated into international studies that investigate the impact of play and art on the formation of personal qualities in children. This is especially relevant for countries that support education reforms.

Current study

Participants, methods, and instruments

Research methodology. Criteria for selecting research subjects. To ensure the representativeness of the study sample, the following aspects were taken into account: age of children (middle and older preschool age (5-7

years); location (participation of children from six preschool education institutions in Kremenchuk and Poltava); different professional experience of the educators who participated in the survey, which allowed to take into account the qualifications influence on the ways of using modern art and game material.

Sample size. The study involved 196 children of middle and senior preschool age, as well as 29 educators from these preschool education institutions. Such a sample composition ensured an appropriate level of objectivity and allowed us to draw generalised conclusions about the peculiarities of the formation of speech creativity.

Data analysis methods and their characteristics. Quantitative and qualitative methods were used to analyse the collected data. Quantitative analysis was carried out by assessing the levels of creativity using a point scale based on predefined criteria (psycho-emotional, personal and behavioural, and artistic and activity). The qualitative analysis was carried out by interpreting the answers to the questionnaires, describing children's creative works, analysing their speech and behaviour during the tasks. The application of an integrated approach to data collection and analysis allowed not only to determine the levels of speech creativity, but also to assess the effectiveness of using modern art and game material in preschool education institutions.

The following data collection tools were used to implement the objectives of the study on the formation of children's speech creativity by means of modern art and game material: questionnaires of teachers; empirical tasks for children; observation; and the method of statistics (Fisher's multifunctional statistical criterion). Let us briefly describe them. The questionnaire survey of educators provided data on the attitude of educators to the use of modern art and game material, their readiness to integrate it into the educational process and understanding of the potential for the development of speech creativity. The experimental classes were conducted using modern art and game materials such as the magnetic game «Formag» and the plastic material, etc.

The following equipment was utilised to conduct the psycho-emotional criterion test: 1. Magnetic game "FORMAG", which contains: flat shapes (for attaching magnetic shapes) of black geometric shapes (circle, square, oval, rectangle, strip), which are firmly attached to a vertical or horizontal surface (board, table) in rooms for group games of a preschool institution. 2. Flat magnetic elements of various, somewhat abstract shapes of natural gradient colors with sizes that comfortably fit in a child's hand and are freely placed on flat shapes of a black body. Instructions: the child is invited to look at the magnetic elements and shapes, explaining the rules for attaching

them to a black body. Asking the question: "What does this element look like? And this one?", we listen and continue the children's various, even the most imaginative answers. The next task for children is to independently attach the elements to the selected shape with a black background, at the child's request, create any story, object or hero of their own and share their thoughts about the created picture with us. We offer preschoolers, if they wish, to unite and jointly create plots from magnetic elements.

For each child, we calculated the number of positive (number of points with a "+" sign) and negative choices (number of points with a "-" sign) from other children in the group, then subtracted the smaller number from the larger number and put the sign of the larger number (according to the indicators and levels of the psycho-emotional criterion).

To examine the indicators of the personal and behavioural criterion of creativity, we planned and introduced one of the types of modern art and play material into the classes - plastic material "Lipaks", which has the properties of plasticine, but is easier to mold and has a richer color range.

Based on the developed methodological materials, we invited children to create images from plastic material "Lipaks" based on a plot known to them. Preschoolers of middle and senior groups actively recalled the plots of the familiar popular cartoons "Smeshariki" and "Peppa Pig". For the sake of the purity of the ascertaining experiment of the scientific and pedagogical research, we will give an example of modeling classes on the theme of the animated film "Smeshariki" precisely because most of the children's products from plastic modern art and play material are made based on the images of this cartoon. It should be noted that in the preparatory part of the lesson, the idea of recognition of the heroes of "Smeshariki" arose, so preliminary work was carried out with viewing several cartoon plots, discussing with children the visual features and characters of the heroes, repeating the techniques of modeling (the base is a ball), handling the stack.

The next task for the children was a task for creative thinking. After modeling any Smeshariki, each preschooler had to come up with a practical function for their plasticine hero. The children were explained that it was necessary to come up with not only new possibilities, but also a useful or unusual function. That is, the little one should look at his molded product not only as a toy or the final result of the work, but also as a useful object for any application at the child's discretion.

Here is the collection of empirical data during the ascertaining experiment according to the third criterion of artistic and activity, which is characterized by indicators of artistic and game literacy in modern game materials, their properties, as well as the child's openness to their knowledge

and understanding of the game potential, the child's artistic and game skills to practically use different types of modern artistic and game materials and the desire for improvisational combination of different types of modern artistic and game materials.

The practical part of the experiment was preceded by a conversation with preschoolers of senior and middle preschool age groups on the topic: "My Friends", taking into account the fact that children aged 5-7 are well aware of the meaning of the concept of "Friends", and the proposed topic of the experimental lesson provides a positive emotional component.

Equipment: kraft cardboard, plasticine, markers, stickers with images of people, pets, birds.

Instructions: Children are asked to create a story on A-4 kraft cardboard on the theme "My Friends". Explaining the visual possibilities of the art and game material presented to them (plasticine can be used to make different shapes and images by sticking and stretching it on a cardboard base, drawing on cardboard with a felt-tip pen, but at the child's request, exclusively drawing, sculpting or making their own picture from stickers), we emphasized that it is desirable to use all the proposed types of modern art and game material in creating an individual visual work (painting) "My Friends".

Comparison of the data of the establishing and control diagnostics in the groups determines the effectiveness of the proposed author's methodology for the formation of creativity of preschoolers from the middle age group to the senior one by means of modern art and game material.

The application of an integrated approach to data collection and analysis allowed not only to determine the levels of speech creativity, but also to assess the effectiveness of using modern art and game material in preschool education institutions.

The scope of the study. The novelty of the study was to determine the peculiarities of the formation of preschool children's speech creativity by means of modern artistic and game material in the conditions of educational institutions of Ukraine. The scope of the study covers geographical location - six preschool educational institutions in Kremenchuk and Poltava, which provides a focus on a particular region; timeframe - the study was conducted during the academic years 2019-2021, which allowed to take into account current trends and challenges of the educational process; sample - participation of 196 children and 29 educators ensures representativeness and allows to generalise the results for similar conditions in other regions of Ukraine.

Research results

The aim of the study is to develop and experimentally test a model of formation of children's speech creativity by means of MAGM in PEI on the basis of theoretical substantiation of the phenomenon of formation of creativity of children of 5-7 years old.

To achieve this goal, the following tasks are defined: based on the analysis of the state of development of the problem, to reveal the essence of the concepts of «formation of preschool children's speech creativity by means of modern art and game material» and «modern art and game material»; to present the classification of MAGM; to develop and experimentally test the model of formation of children's speech creativity by means of MAGM in PEI.

The scientific and pedagogical experiment lasted for two academic years – 2019-2020, 2020-2021. In the pedagogical experiment to establish the state of preschool children's creativity development using MAGM and to develop preschool children's speech creativity using MAGM in PEI, 196 pupils of 5-7 years old from kindergartens of Poltava and Kremenchuk (Ukraine, Poltava region) took part.

The formative research and experimental work, which consisted of two stages (ascertaining and experimental), was organised for the purpose of approbation of the author's methodology of forming children's speech creativity from middle to senior preschool age by means of modern art and game material. Its purpose was to test the hypothesis of the study that the level of preschoolers' speech creativity will increase significantly if systematic educational and play activities involving modern art and game material are organised.

The analysis of the generalised indicator data obtained as a result of diagnostics of the primary level of preschoolers' creative speech development in middle and senior groups of preschool institutions made it possible to differentiate the composition of preschoolers and select a control and an experimental group. To participate in the formative experiment, during the preparatory stage, the control group (91 children) was selected from the PEI No. 56 in Poltava (18 children), the PEI No. 63 of Kremenchuk (43 children), the PEI No. 61 (30 children), and the experimental group (105 children) of the children of middle and senior preschool age of the city of Kremenchuk from the following institutions: the PEI No. 65 (40 children), the PEI No. 68 (45 children), the PEI No. 82 (20 children). These data are presented in Table 1.

Table 1. The generalised indicator of speech creativity formation in middle and senior preschool children before and after the forming stage of the experiment (%)

	Control group						Experimental group						
	Before the experiment			After the experiment			Before the experiment			After the experiment			
	The low level	The average level	The high level	The low level	The average level	The high level	The low level	The average level	The high level	The low level	The average level	The high level	
The generalised indicator (%)	45,42	35,90	18,68	41,03	38,82	20,15	40,32	41,58	18,10	18,35	51,03	30,62	
Dynamics of changes after the results of the experiment at the beginning and end (%)				-4,39	+2,92	+1,47					-21,97	+9,45	+12,52

In order to check the linguistic correctness of the formation of control group (CG) and experimental group (EG) (establishing their homogeneity in all levels of preschoolers' linguistic creativity considered in the study at the ascertaining stage of the experiment), we used Fisher's multifunctional statistical criterion – φ^* (Fisher's angular transformation), which made it possible to evaluate whether the statistically significant difference between the percentage parts of the feature detection in the studied groups (Rudenko et al., 2009).

When studying the formation of speech creativity in children of 5-7 years old by means of modern art and game material, it is necessary to first consider the essence of the concepts of «creativity of preschool children», «formation of preschool children's creativity», «modern art and game material» and define the concept of «speech creativity of preschool children».

The term “creativity” has a multidimensional character and covers various aspects of creative activity. Based on the analysis of scientific sources

within the framework of our study, "creativity of preschool children" can be defined as a child's general ability to solve life and play situations independently and creatively. This is the ability to make non-standard decisions without fear of new tasks, which is made possible by developed imagination, courageous thinking and effective communication skills. At the same time, "formation of preschool children's creativity" is seen as a purposeful pedagogical process aimed at creating conditions for the development of a child's natural curiosity, imagination and fantasy. It includes stimulation of improvisational, communicative and artistic and creative abilities, which contributes to the comprehensive development of the preschooler. We have determined that preschool age is a sensitive period for the development of creativity as a personal quality and the formation of general abilities of a preschool child in the worldview paradigm of various life situations. The formation of a child's preparedness for non-standard, and original solutions, curiosity, development of imagination, courage, flexibility and dynamism most effectively occurs through the disclosure of the individual characteristics in a prepared learning environment, through various means. *Speech creativity of preschool children* is the ability to use speech creatively for expressing their thoughts, feelings, fantasies and ideas. Speech creativity includes imagination, non-standard expression of thoughts, the ability to generate new ideas and express them in speech, as well as the ability to create a variety of verbal constructions, in accordance with the situation, such as stories, riddles, multi-level questions, rhyming, etc.

A deep theoretical and semantic analysis and synthesis of the essence of the concepts of «art», «game» and «material» allowed us to interpret the concept of «*modern art and game material*» as a means of mastering the world, creating and self-realisation of the individual in game activities. Therefore, we have defined the concept of «*modern art and game material*» as a means of artistic and aesthetic mastering of the world, formation and self-realisation of the individual in game activity (Zimakova & Kramarenko, 2021; Zimakova & Kramarenko, 2020; Zimakova & Manzhelii, 2020).

We have classified MAGM:

- **by physical and structural features** (*magnetic* (magnetic art material «Formag» (by V. Kramarenko) (Kramarenko, 2023), magnetic clay, 4D construction set, neocube, planar magnetic toys, etc.), *paper* (prefabricated cardboard models, modern creative books, stickers, board games, etc.), *plastic* (kinetic sand, slime, modelling clay, oven-baked polymer clay, air clay, air hardening modelling clay, etc.);

- **by shape-forming capabilities** (*construction toys* (Lego, balancing and building construction set, velcro construction set, «Coloured Glass Marbles»,

«Coloured Pebbles» by Obetty, «Rainbow Pebbles» by Edx Education, etc.)
tech toys (electronic/solar-powered construction set, dynamic, etc.);

- **by artistic and creative characteristics** (*art material*:
paints/crayons/inks; paintbrushes/pencils/pastels; brush pens/marker;
pens/markers; fabric/wool/fluffy chenille stem; elastic rubber stamps/elastic
bands for weaving; paralon/foam/beads, etc.);

- **toys with a magic effect** (3D pens, 3D LED drawing boards, water
growing toys, etc.) (Zimakova & Kramarenko, 2021).

We believe that the interpretation of the basic concepts of the study
and the classification of modern art and game material are not definitive and
may undergo further transformations.

To study the state of preschool children's speech creativity
development using MAGM, a pedagogical experiment was conducted in three
stages: ascertaining, forming and control.

The tasks of the ascertaining experiment were: 1) to determine the
criteria, indicators and levels of speech creativity of children aged 5-7 years
using MAGM; 2) to conduct diagnostic measures to determine the level of
speech creativity of 5-7-year-old children.

Our theoretical scientific and practical research allowed us to
reasonably define the following criteria – *psycho-emotional, personality-behavioural,*
artistic and activity, their indicators and levels.

Indicators of psycho-emotional criterion of children's speech
creativity of 5-7 years old: cognitive abilities; emotional indicator, evaluation
and control.

Indicators of the personality-behavioural criterion: independence,
communication indicators, prudence, readiness for partnership. Indicators of
the artistic and activity criterion: artistic and game literacy, artistic and game
skills, improvisational and creative activity of a preschool child.

When studying the level of mastery of MAGM possibilities by children
aged 5-7 during play activities, it is necessary to consider all the above criteria.
The absence of one of them in the process of forming a child's speech
creativity leads to a general problem of mastering the processes of learning,
adaptation, socialisation and, in the future, while growing up and transitioning
to school, can cause problems with finding the most optimal solutions to
problems and ways out of life situations related to communication and
educational tasks.

To organise the diagnostic test within the framework of the scientific
and pedagogical research, namely the ascertaining part of the experiment, we
conducted a survey of *psycho-emotional, personality-behavioural* and *artistic-activity*
criteria of speech creativity according to the developed relevant indicators, levels

and selected diagnostic methods. According to its results, we found that the general level of speech creativity of children aged 5-7 years requires improvement; wide opportunities for mastering modern art and game material will help the development of preschoolers and contribute to the formation of creativity as a basic modern competence. The generalised level of preschoolers' speech creativity development before the experiment is shown in the table (see Table 1).

The obtained factual material requires the introduction of a professional methodology with the development of targeted tasks to increase the low and medium levels of speech creativity of children aged 5-7 years to a high level of creativity on the basis of PEI, which by their own terms are most conducive to the comprehensive development of children in the acquisition of the necessary life competences.

Thanks to the conducted ascertaining experiment, it was proved that preschoolers are ready to change in forms, materials, impact on the course of the game, ways of using MAGM, etc. It is the art and game material with its non-standard, mobility (the ability to change) that can comprehensively influence the psycho-emotional state of the child, form adaptive behaviour in artistic and game activities, produce original ideas, deviate from traditional and/or stereotypical ways of thinking, quickly solve problem situations, actively using a variety of speech constructs.

We are convinced that an important task in the process of forming preschool children's speech creativity is to focus educators' attention on the formation of the child's personal qualities by searching for appropriate pedagogical means. For our scientific and pedagogical research, it is important that the «primary» general creativity of a preschool child grows efficiently in the presence of external conditions in the form of an appropriately developing environment, the surroundings of creative adults and their encouragement of the child's independence of views through openness to the MAGM, sensitivity of adults to children's problems, fostering the child's creative needs, in free children's play.

In the course of analysing the results of the ascertaining experiment, we have identified the *pedagogical conditions* for the formation of preschool children's speech creativity using MAGM in kindergartens, namely: integrated and activity-based approaches to the formation of children's speech creativity using MAGM; establishment of partnership between the educator and children in the formation of speech creativity using MAGM; introduction of vitagenic methods of preschool children's development with MAGM. That is why there is a need to find such a model of forming a child's speech creativity that will implement the pedagogical conditions we have identified, which will

effectively and considerably increase the creative development of preschool children by means of MAGM in the conditions of PEI.

To increase the level of children's speech creativity by means of MAGM in preschool educational institutions, we organised a *formative research and experimental work*, which consisted of two stages.

The first stage is the development of a model that considers the pedagogical conditions for the formation of children's speech creativity using MAGM in preschool educational institutions.

The second stage involves implementation of the model of developing children's speech creativity using MAGM in the educational process of PEI.

At the first stage of the formative research and experimental work, we developed a model. The model envisaged two approaches: **enrichment** of content and operational-activity components of classes from different sections of the programme with the means of MAGM or **introduction** of group work in the educational process of PEI with the aim of forming children's speech creativity with the help of MAGM according to the author's programme «Mag_i_Ya» (Kramarenko, 2023).

Next, we describe the structural components of the model.

The structural components of the research and experimental model of forming children's speech creativity by means of MAGM are *target, stimulation and motivation, content, operational-activity, control and regulatory and evaluation-resultative*.

The target component functionally combines the *goal* of forming preschool children's speech creativity using MAGM with specific **tasks**: 1) to carry out appropriate psycho-emotional development of children of emergence artistic middle and senior preschool age; 2) to form certain personality-behavioural qualities in preschoolers; 3) to form artistic and activity skills in children of middle and senior preschool age.

The stimulation and motivation structural component envisaged such a scheme of building the educational process in the PEI, during which preschoolers would be stimulated in their interest in solving problem-search tasks, the need for independent and/or partnership solution, the emergence of positive motives during learning, and the selective attitude to MAGM.

The substantial component follows from the content of preschool education (Kosenchuk et al., 2021) and is specified in the list of key competence indicators that are necessary for the formation of preschoolers' creativity using MAGM through emotional and value attitudes, formation of ideas, abilities and skills for active, creative implementation of the acquired experience, i.e. regulation of achievements, behaviour, activity.

The operational-activity structural component reflects the procedural essence of the innovative methodology for the formation of creative manifestations in such children's competences as *personal, subject-practical, technological, sensory-cognitive, logical-mathematical, research, game, social and civic, speech, communicative, artistic and speech, artistic and creative*, during traditional classes in PEI and the introduction of modern methods of forming creativity using MAGM during group work according to the author's programme «Mag_i_Ya».

The control and regulatory structural component of the model consists in constant monitoring in the course of solving the tasks and providing feedback. Tests of the formation of knowledge and skills are indicators of the effectiveness of the used forms, methods and techniques of forming creativity in children using MAGM with the help of the tasks developed by us.

The evaluation-resultative component involves the teacher's assessment of children's achievements, analysis of the causes of failure, which will make it possible to stimulate the desire to improve their results. This happens on the basis of value judgements about the results of preschool children's artistic and playful activities using MAGM.

The following is the essence of the approaches to implementing the model of formation of children's speech creativity by means of MAGM.

In the first approach of implementing the model of forming children's speech creativity using MAGM (author's «enrichments»), it is necessary, in our opinion, to include educational tasks for the formation of children's creativity in accordance with the competences formulated in the Basic preschool education component of Ukraine and to select appropriate pedagogical tools for using MAGM in the perspective and calendar planning of classes in different sections of the programme in the middle and senior groups of kindergarten.

While planning the second approach in the author's programme of creativity formation «Mag_i_Ya», we set a goal to implement educational tasks of the «Dytyna» (which means «Child» in Ukrainian) programme, which is used for teaching and educational process in experimental PEI, in particular: **in the middle group (fifth year of life)**, according to the «Dytyna» educational programme, we introduce the following educational tasks:

- *communicative development*: developing interest in learning about the world of people in order to form openness to social interaction, readiness for interpersonal relationships; developing an understanding of the feasibility of the beauty of moral actions, forming the basics of cultural behaviour, culture

of interpersonal relationships with the involvement of modern children's books, artistic MAGM, and magnetic MAGM in the lessons;

- *logical-mathematical development*: developing the ability to notice not only the qualities and properties that are clearly presented in an object, but also less noticeable, hidden ones; establishing connections between the properties of an object and its purpose, identifying the simplest dependencies of objects (in shape, size, quantity) and tracing changes by one or two features using constructional MAGM, plastic MAGM, paper MAGM, and tech toys;

- *acquaintance of children with the nature*: forming children's ability to notice the beauty and aesthetic originality of various forms of mastering the natural beauty; expanding knowledge about various habitats of plants and animals, fostering an attentive and respectful attitude to all manifestations of life with the involvement of a modern children's book, paper MAGM, artistic MAGM, toys with a magic effect;

- *artistic and aesthetic development*: supporting children's initiative; encouraging them to make suggestions for creating images using different types of MAGM (constructional, artistic, toys with magic effect, plastic MAGM, magnetic MAGM, paper MAGM). Stimulate multivariate image creation. To develop skills of experimentation in different drawing techniques, modelling techniques, collage, etc.

In the older group (sixth to seventh year of life), in accordance with the «Dytyna» educational programme, we introduce the following educational tasks:

- *communicative development*: developing the ability to analyse one's own actions and the actions of others in accordance with universal human values and moral rules of interpersonal interaction: developing the ability to act coordinated in situations of interaction, in a team; developing the ability to work collectively with the use of modern children's books, paper MAGM, artistic MAGM, construction MAGM, and toys with a magic effect;

- *logical-mathematical development*: developing cognitive interests, the basics of critical thinking with the involvement of construction MAGM, plastic MAGM, paper MAGM, and tech toys;

- *acquaintance of children with the nature*: teaching them to explore objects and phenomena of nature accessible for perception with the use of modern children's books (4-D encyclopaedias with augmented reality), paper MAGM, artistic MAGM, and magnetic MAGM;

- *artistic and aesthetic development*: developing imagination, observation; to create an emotionally positive creative atmosphere during visual activities; to encourage variability in the choice of techniques, means and ways of creating images in drawing, modeling, application; to promote children's awareness of

the idea that visual activities develop skills necessary for the formation of life competence; to form an aesthetic attitude to works of fine art and environmental objects (Dytyna: Osvitnia prohrama dlia ditei vid 2 do 7 rokiv, 2020) with the involvement of plastic MAGM, magnetic MAGM, paper MAGM, and artistic MAGM in the lessons.

Taking into account the pedagogical conditions of creativity formation, we used the following *pedagogical tools* in our work with children of middle and senior groups of the PEI:

- *forms*: integrated classes; organisation of a MAGM centre; free play; a group for the formation of speech creativity; subgroup classes;

- *methods* (*research, problem-searching, free play, TRIZ*): examination of the properties of different types of MAGM; experimentation; free or spontaneous play of children with MAGM; polylogue; synectic method; method of focal objects; method of creative tasks; «Microphone» method; TRIZ method (theory of inventive problem solving); conversations (conversations based on the reproductive method of learning, systematising conversations, heuristic conversations or storytelling);

- *techniques*: introduction of a creative hero; creation of MAGM art objects; free or spontaneous play with MAGM; minutes of literature; free imagination with MAGM; selective description of actions and situations; collaging with MAGM; observations and tasks with MAGM magic qualities; art installations with MAGM, etc.

During the formative stage for children of the **middle group**, as part of the enrichment of the MAGM educational process, we developed and conducted a class on the following topics: «Magnetic Mag_i_Ya. Study of properties and play activities with magnetic volumes by fantasy», «Plastic Mag_i_Ya. Study of properties and play activities with plastic material by fantasy», «Paper Mag_i_Ya. Study of the properties and play activities with paper material (Collage from the rests of paper, paper stickers, coloured and other types of paper)», «Magic shadows. Tracing and colouring shadows of different shapes», «Search and create. Creating art sculptures from the art and game materials (paper, construction, art) available in the group», «Funny stones. Making multi-coloured flat stones (large, medium, small) from plastic material and creating characters from a modern game book for children («Don't be afraid of monsters», by Yevheniia Myroniuk)».

Integrated classes on these topics were developed and conducted for children of the **older group**: «Imprint as art. Creating imprints of different shapes, subject or plot drawing of images», «Constructors-Architects. Creation of architectural forms from wooden sticks and foam rubber joints», «Zoo transformation. Constructing from cardboard cylinders, paper cups, dinosaurs

and other animal figures», «Creating a zine «Imagine&Paint» from different types of art materials (monochrome gouache, liner, paper, scissors)», «Creating an author's map of the way from kindergarten to home using magic effect (colour changing markers, luminous pens)», «Creating a thematic picture on a story close to the child («My family», «My yard», «My friends», «My favorite fairy tale/story») on cardboard with art and game material (plasticine, pencils, paper)», creation of a MAGM center-base in five preschool educational institutions in Kremenchuk, and Poltava.

The second approach to the implementation of the model of forming children's speech creativity by means of MAGM involved the introduction of the «Mag_i_Ya» group work in PEI.

«Mag_i_Ya» is an author's program aimed at developing the creative speech of preschool children (middle and older groups) through contemporary art and game methods. Educational tasks of the «Mag_i_Ya» program:

1. To expand children's understanding of the interaction in the systems “I” and “others”, to improve the ability to analyze and interpret the environment, to stimulate original thinking, speech development, creative imagination and fiction.

2. To develop a range of emotions; intensity and adequacy of emotional reactions.

3. To form a positive attitude towards other players; to form a style and manner of solving interpersonal communications in artistic and game activities; ability to explain, tell, reflect in the context of activities with modern art and game material.

4. To teach to control interest (attraction) by art and game material; to reveal with the help of evaluative judgments desire, curiosity, desire for a positive result of game activity with art and game material; to form the ability to work in conditions of information deficit or in conditions of latent learning.

5. To improve the ability to realize and set the goal of the game, to select art and game material; to show readiness to overcome obstacles by means of modern art and game material; initiative, courage, determination; ability to master the techniques of reasonably conducting the game canvas, to involve improvisational searches for personal interest, to make the game open to everyone.

6. To form knowledge about modern art and game materials, their properties, functional capabilities, sequence of game activities with them.

7. To form openness to knowledge of art and game material; understanding of creative potential of art and game material.

8. Continue to form practical skills to use different types of modern art and game material (toys, construction, magnetic, etc.) in play activities.

9. Continue to teach improvisationally combine various forms, materials in the game and its types to generate new ideas and plots of individual or joint game, formed on the basis of interaction with modern art and game material.

10. To foster respect and love for the aesthetic colour of the living space.

The content of the program corresponds to the formulated criteria and indicators of creative development of preschoolers of middle and senior groups of PEI. The implementation of the program content will be carried out in an integrated way – through the formation of creative skills and holistic perception of modern art and game material by a child in various types of activities (Zimakova et al., 2021).

Following are the stages of work on the introduction of group work in the PEI «Mag_i_Ya».

The propaedeutic (preparatory) stage involves introducing children to different types of modern art and game material and its creative possibilities in accordance with the planned tasks. When preparing children for artistic and game activities, it is worth having a short conversation of relevant content and vocabulary work, in particular, to introduce new words and actions with modern art and game material.

The art and game stage. When working with the involvement of modern art and game material in the artistic and game activities of preschoolers, an adult needs to remember the psychological principles of interaction. It is the correct explanation and task setting that will help the preschooler to acquire purposeful perception, activate the process of idea generation, its implementation into a specific «product» and self-esteem. Therefore, before starting the child's artistic and playful activity, the specialist should clearly and accurately formulate the task, explain the methods of its performance and provide several options for its implementation at the child's request. Artistic and playful activities should last up to 25 minutes, but if the child is still interested in the task, he/she should be given the opportunity to return to creative work during the day (or to continue it if possible). After completing the artistic and game activity, it is advisable to conduct a brief verbal description of the result or a conversation about the impressions – up to 5 minutes. It also makes sense to use several types of speech work about the creative possibilities of modern art and game material and the ideas of children: consolidation and intensification of vocabulary – up to 5 minutes. Various methods and techniques should be used, including: answering questions; reminding about the peculiarities of the properties of modern art and

game material; commenting; selective description of actions and situations; using words in a figurative sense; recalling, inventing songs, riddles, etc.

The reflective stage. At the final stage, you should activate the improvisational component of the game through the child's speech as a visual reflection of the results of creative work. To do this, invite children to join a common circle, ask each other questions, share their impressions or verbal or game additions.

To determine the characteristics of the criteria of children's speech creativity, namely: psycho-emotional, personality-behavioural and artistic and activity – and in order to realize the creative potential of preschool children, we have developed a series of *integrated art and game classes* based on the involvement of modern art and game material in the educational activities of PEI.

The implementation of this series of classes took place on the basis of six preschool educational institutions in Kremenchuk and Poltava with a hypothetical initial goal in the middle age group – to explore the possibilities of MAGM and with a hypothetical final goal in the older group – to acquire preschoolers' creative speech abilities through the development of skills to generate unusual ideas, deviate from traditional and/or stereotypical ways of thinking, quickly solve problematic life and game situations during play and in the classes, actively use communicative and speech means.

Here are examples of such lessons in the experimental group of middle preschool age: at the preparatory stage of the lesson on studying the properties and play with plastic material by fantasy («Explore» block), we offered children to explore the properties of plastic material and share analogies (what useful things can be made with plastic material?), using the method, based on the theory of inventive problem solving (TRIZ), the «Microphone» method. The answers of the children in the experimental group were as follows: «You can stick a broken toy together», «Use it as a pencil holder on the table» and even: «You can seal a hole in a bad tooth» or «When Santa Claus comes with gifts on New Year's Eve, you can stick him to the floor so that he doesn't run away by making a plasticine mat», or «...to seal the holes from nails on the furniture in the group room».

Also, at the preparatory stage of classes on the study of the properties of paper material («Explore» block) in the experimental group of middle preschool age, the MAGM centre had paper material of various types and qualities: from newsprint to paper stickers to get acquainted with the features of the children's choice. In addition, crumpled paper was scattered on the floor of the group. The children were asked to walk on the paper, listen to its rustling and share their impressions of what the paper felt like and how it sounded. The children were happy to do the task, some of them started

playing, imagining that the paper was snow. They tried to make snowballs and play with others. Some children imagined that they were walking in an autumn park because the rustling of the paper reminded them of the rustling of autumn leaves. This free play with MAGM activated the children's speech reactions.

The task «Funny stones» (Block «Fantasise»), according to the developed programme of creativity formation «Mag_i_Ya», required preliminary preparation, so the lesson was divided into several parts. In the first part, we made coloured stones with the children, recalling their shape, and together we agreed that the stones should be oval and round, but coloured, because then they are more fun. The children remembered where they had seen similar stones (at the sea, in their grandmother's flower garden, near a fountain...) and during the joint moulding they shared their impressions and tried to play with the plasticine «stones» they had made. The second part of the lesson was implemented a week and a half later. The lesson had several parts: reading the book «Don't Be Afraid of Monsters» (2019) by contemporary Ukrainian writer Yevheniia Myroniuk, discussing and moulding the characters of the book – the monsters Mierzlyachok, Shkarpetyk, Shurkhotun – from plastic material in the form of stones. It should be noted that the book has game moments (repeat the sounds, imagine, open the wardrobe, count the lambs, etc.) We also offered the children of the middle group to decide on their own and design from the plastic material in the form of stones what kind of monsters they thought they could be. According to our observations, at first, most children tried to repeat the illustrative material because the monsters in the illustrations had simple shapes, but then the process of improvisation began, and the monsters made of multi-coloured plasticine stones had a quite unusual, creative look, which corresponded to the task of forming creativity (Kramarenko, 2023).

The lesson «Constructors-Architects» in the group of middle preschool age did not require any prior preparation, so it began with a conversation on the topic «The profession of an architect». Together, the children discussed the peculiarities of the architectural profession, recalled the types of buildings they knew (multi-storey buildings, industrial buildings, shops, hospitals, etc.) and, with our help, remembered the kindergarten building, agreeing that it was also designed by an architect. The children were especially interested in the modern art and game materials for construction (wooden sticks, diced paralon moulds for connecting the sticks together). Before starting the construction, a health-saving conversation about the rules of handling wooden sticks was planned and conducted. The middle-aged children were warned that the sticks should be stuck into the paralon, acting carefully and attentively, gradually creating

new architectural forms. When performing the task, some children thought it was enough to focus on the stability of the structure, while others, not paying attention to the stability of the structure, laid it horizontally on the tables and continued to connect the elements, enjoying the process. Summing up the lesson, we once again reminded the preschoolers of the importance of the profession of an architect and the task of making their structures sustainable. Thus, thanks to the lesson «Constructors-Architects», children consolidated the concept of the profession, learned new design possibilities, and after the lesson they were able to integrate the architectural forms, they had designed into a free game with characters (transformers, dolls, animals, etc.) (Kramarenko, 2023).

Discussions

The study was conducted in accordance with the ethical standards governing experimental activities in the field of education and science in Ukraine. Prior to the initiation of the study, all methods and procedures were thoroughly reviewed and approved by the pedagogical councils of preschool education institutions and the study participants (educators and parents). Parents of children and kindergarten teachers provided voluntary informed consent to participate in the pedagogical experiment.

The results of the applied methodology for the formation of speech creativity within the developed programme «Mag_i_Ya» proved the presence of positive changes towards the courage of making game decisions, improvisation, improvement of imagination of each participant of the experiment through integrated classes and made it possible to trace in the dynamics of noticeable changes towards increasing the level of speech creativity as a personal ability of preschoolers in the following indicators: independence (the ability to realise and set the goal of the game, to choose the means of the game through the readiness to manage one's own emotional states, perceiving partnership); readiness for partnership interaction; artistic and game literacy (openness to knowledge and understanding of the creative potential of art and game material). Also, according to the indicator of improvisational and creative activity of speech creativity, preschoolers of the experimental group of middle preschool age showed quite high performance on the identified indicators of creativity and at the stage of the formative experiment rapidly increased them in older groups.

The results obtained convince us that EG and CG at the ascertaining stage of our study do not differ statistically in all levels of preschool children's speech creativity.

Based on the analysis of the data of the average indicator of speech creativity at the stage of the ascertaining experiment, which were obtained as a result of diagnosing the primary level of speech creativity of children of middle and senior groups of preschoolers, we differentiated the composition of the experimental group on the basis of insufficient formation of certain knowledge, skills and abilities. This made it possible to consider individual peculiarities of preschoolers when performing tasks on the formation of speech creativity by means of modern art and game material.

The forming experiment involved compliance with theoretically determined stages of preparation, certain pedagogical conditions, application of certain forms, methods, techniques, various creative tasks with MAGM. Each stage of the preparation was completed with control sections, which showed the dynamics of growth of the level of speech creativity of preschoolers of experimental groups of middle preschool age. For this purpose, the diagnostic methodology of the ascertaining experiment was used.

Comparison of the data of the ascertaining and control diagnostics in the groups determines the effectiveness of the proposed author's methodology of forming preschoolers' speech creativity from the middle to the senior age group by means of modern art and game material.

Before the experiment, according to the first criterion – *psycho-emotional* – 38.10 % of middle-aged preschoolers of EG and 46.15 % of CG were at a low level. According to the second criterion – *personality-behavioural* – 39.05% of EG and 42.86 % of CG preschoolers were at a low level. According to the third criterion – *artistic and activity* – the following low-level indicators were recorded: in EG – 43.81 %, in CG - 47.25 %.

Note: in the preschool educational institution (PEI No. 65) the experimental part of the scientific and pedagogical research was forced to be interrupted due to the closure of the senior preschool age group for quarantine (1.5 weeks), which did not have a significant impact on the course of the experimental part of the study, because when returning to the classes within the experiment, children actively recalled previous actions and quickly solved the tasks related to them.

A cross-section of indicators of preschoolers of senior groups of preschool institutions according to each of the criteria of speech creativity formation, conducted after the end of the forming experiment with the use of the developed methodological programme for the formation of creativity «Mag_i_Ya», made it possible to reveal a significant increase in the level of speech creativity of preschoolers of senior and middle age groups in the experimental groups. The number of preschoolers with a low level of development according to the first criterion – *psycho-emotional* – decreased in

the experimental group from 38.10 % to 15.86 %, while the number of preschoolers with an average level increased from 43.80 % to 50.52 %. The high level also increased from 18.10 % to 33.62 %.

The experimental group also showed a decrease in the number of preschoolers with low level of development according to the second criterion – *personality-behavioural* from 39.05 % to 19.62 % and a simultaneous increase in the number of preschoolers with an average level from 46.66 % to 54.62 %. Also, the high level of development increased from 14.29 % to 25.76 %.

According to the third criterion – *artistic and activity* – the following changes were recorded: in the experimental group of preschool children, the high level increased from 21.90% to 32.48%, there was an increase in the average level – from 34.29% to 47.95%, and a decrease in the total number of preschoolers with low level of development from 43.81% to 19.57%.

The cross-section of preschool children's speech creativity, conducted after the completion of the forming experiment, revealed a significant increase in the levels of indicators of speech creative development of senior preschool children by means of modern art and game material. In the experimental contingent, there was a decrease in the number of preschoolers with a low level of speech creative development from 40.32 % to 18.35 % (dynamics - 21.97) and a simultaneous increase in the number of preschoolers with an average level from 41.58 % to 51.03 % (dynamics +9.45), as well as a high level – from 18.10 % to 30.62 % (dynamics +12.52). At the same time, there were no significant changes in the control group.

Limitations

A comparison of the results of the control and experimental groups at the end of the forming stage of the study is presented in Table 1.

On the basis of the experimental data obtained, we concluded that the thematic novelty of the tasks of the «Mag_i_Ya» programme with the methodology of involving modern art and game material in the educational activities of preschool educational institutions during the experiment proves qualitative effectiveness, which is substantiated by the representative results of our scientific and pedagogical research in its fundamental task, namely, in the forming capabilities of preschool children's speech creativity using MAGM.

In the experimental groups, the dynamics of improving the levels of speech creativity of middle and senior preschool children changed in a positive way at the end of the forming stage of the experiment. This is confirmed by the data, namely, the number of children with a high level of creativity increased by 12.52 %, while the number of children with an average level of creativity increased by 9.45 % due to the decrease in children with a low level of speech creativity. In

general, the experimental component of the study proved that children with a high level of speech creativity are sufficiently aware of the possibilities of MAGM, but at the same time, children with a low level of speech creativity showed an active growth of the level of this quality towards its improvement.

To establish the existence of a statistically significant difference in the results after the forming stage of the experiment between the experimental and control groups of preschoolers at all levels of speech creativity, we used the same Fisher's multifunctional statistical criterion – φ^* .

The results of our statistical analysis make it possible to assert that after the forming stage of the experiment, the preschoolers of the experimental group have statistically significantly better results in speech creativity at all levels considered in the paper compared to the preschoolers of the control group.

Hence, we have received mathematical confirmation of the effectiveness of the methodology of forming speech creativity developed by us through the involvement of the «Mag_i_Ya» programme in the educational activities of preschool children.

Conclusions

The conducted research and experimental work have shown the effectiveness of implementing the model of forming the speech creativity of children of 5-7 years old by means of modern art and game material. Therefore, in the future, we advise preschool educational institutions to choose the way of forming the speech creativity of children aged 5-7 years by means of modern art and game material.

The overall results of the experiment are the basis for the following conclusion: the developed pedagogical model of improving the formation of speech creativity in children aged 5-7 years by means of modern art and game material is effective and deserves to be implemented in all preschool educational institutions of Ukraine.

The conducted research, certainly, does not exhaust all aspects of the formation of speech creativity of children aged 5-7 years by means of modern art and game material, but provides for the continuation of scientific research work aimed at identifying other ways of using contemporary art in the educational activities of kindergartens, its integration with social and communicative problems, development of a curriculum and methodological recommendations for the use of modern art and game material in the process of social development of children of different age groups, as well as improving of professional training of future educators of PEI.

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Consent to participate: All participants were informed of the study specifics and the withdrawing possibility, with no other consequences on their status. Informed consent was obtained from all the participants in the study - both from the caregivers of the children involved in the study and from the teachers participating as research subjects.

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