

CHAPTER «PSYCHOLOGICAL SCIENCES»

DEVELOPMENT OF CREATIVE ABILITIES OF ELDER PRESCHOOLERS BY MEANS OF COMPUTER GAMES

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Abstract. Game technologies and techniques (including computer) occupy a special place in the educational process of preschool institutions. Computer games are included into the preschool program as a kind of intellectual games. Computer games are important in the development of the intellectual and cognitive abilities of children. At the same time, researchers of computer game problems say that the expansion of multimedia space in general, and computer games in particular can have a negative impact on the emotional, physiological and personal development of a child, that requires specific conditions in case of their use.

The scientific novelty and theoretical value of the work was to determine theoretical approaches to the study of the problem of development of creative abilities of senior preschoolers by means of computer games; defining criteria and their indicators (*creative ease*: the ability to study the subject comprehensively, the ability to take various factors into account in decision making, the ability to absorb new material easily, the ability to switch thoughts quickly and freely, the ability to solve problematic tasks easily; *creative originality*: new ideas, ability to bring something new to a known task, thinking outside of examples, the ability to go beyond the scope given by other situations, independent choice of activity, materials, ability to create a new product, *creative flexibility*: the ability to move freely from one way of solving a task to another, the ability to switch actions from

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one activity to another, the use of substitutes, ambiguous words, developed ability to create diverse ideas in a somewhat limited situation; *creative productivity*: ability to form new words, rhyme, create new plots, roles, create products, images, ability to reconfigure elements in new combinations; *creative imagination*: the ability of the mind to combine images into new forms and combinations, to imagine possible changes in reality, the ability to create fantastic ideas, predict, forecast, hypothesize, isolate the essential within the homogeneous phenomena and its embodiment in an image, game). Development of psychological model and program of development of creative abilities of senior preschoolers by means of computer games (cyclical; logical; adventure; strategic; step-by-step strategies), selected according to the criteria of creative ability, proved its effectiveness and necessity of introduction of author's program in educational practice.

A theoretical analysis of studies of the computer games usage problems by adults as well as children of all ages (including preschoolers) has shown that there is currently insufficient systematic research on this issue. In particular, questions remain about the organizational forms of holding educational activities and genres of computer games aimed to the development of creative abilities of senior preschoolers, the psychological characteristics and conditions for the development of creative abilities of senior preschoolers by means of computer games are not defined, there is no methodological support for the use of computers games to develop the creative skills of elder preschoolers.

1. Representation of the concept of creative abilities in preschool psychology

The problem of early development of creative personality is of great interest for scientists all over the world. Now it is necessary to build the foundations of understanding the world as a dynamically changing one starting from the first years of child's life, in which the person is in a state of constant creation of this world and him/herself. Nowadays basic researches on studying of mechanisms of development of creativity of children of different age have been made in the world of psychological science.

The ability for creativity is formed slowly for elder preschoolers passing through several stages of development. These abilities are manifested when the child does not act on a pattern, offers and implements original ways of

solving practical and game problems, shows creativity and receives such results of it as drawing, fairy tale, story, design.

Child's creative manifestations are observed quite early. It has many individual differences, and therefore the creative manifestations will be purely individual, although, of course, there are typical creative manifestation characteristic of preschool children (L.S. Vygotsky, D.B. Elkonin, O.V. Zaporozhets, G.O. Lublin, V.S. Mukhina and others). However, as R.V. Pavelkov notes, high rates of creativity of the child do not guarantee its creative achievements in the future, but only increase the possibility of their manifestation in the presence of high motivation for creativity and mastering certain skills.

According to O.I. Kulchytska, the creative abilities of the preschooler are realized in different activities: playing, training, communicating, working. It identifies the following criteria of creativity: originality as the ability to produce situations, unusual answers, non-standard decisions; semantic flexibility as the ability to highlight the features of an object and offer different ways of using it; imaginative adaptive flexibility as the ability to highlight the features of an object so that it sees new features; semantic elemental flexibility is the ability to find diverse ideas in a relatively limited situation.

E.P. Torrence identifies the following criteria for a child's creative ability: speed as the ability to produce a large number of ideas; flexibility as the ability to apply a variety of strategies to solve problems; originality as the ability to produce unusual, non-standard ideas; elaboration as the ability to elaborate ideas that have emerged; resistance to closure as the ability not to follow stereotypes and for a long time to «remain open» to the variety of information that comes in case of problem solving; abstractness of the name as understanding the essence of the problem, of what really matters. The naming process reflects the ability to transform imagery into verbal form [6, pp. 115–126].

During the theoretical and empirical research, the criteria of creative ability were determined: *creative ease*, *creative originality*, *creative flexibility*, *creative productivity*, *creative imagination*.

Specific are also the means of developing the creative abilities of preschool children. Generation of children's creativity is usually game-related. Preschoolers draw and play, dance and play, construct and play, name words, invent fairy tales and constantly play. They play even when

they are engaged in serious business – education. Through playing, experimentation, creativity happens the knowledge of the world by child. In the game, the child tries to find his place in life, in which it prepares for school, it lives, wakes up and falls asleep with the game (L.A. Wenger, D.B. Elkonin, T.D. Zinkevich-Evstigneeva, N.V. Kudikina, S.L. Novosyolova, R.V. Pavelkov, T.I. Ponymanskaya) [5, pp. 90–95].

The development of creativity requires the creation of certain conditions in which the child will feel free from adult's influence. When children are passionate, free, carefree, creative decisions come spontaneously, as if by themselves. Creative manifestations are available where there are no prohibitions, ridicule, restraint, humiliation, where there are available materials for children's creative activity, teacher and parents constantly care about finding ways and means of development of children's creativity, but do not impose on them their own examples, templates, opinions. According to scientists, the conditions for the development of creative abilities in preschool age are productive imagination (V.V. Davydov, O.M. Dyachenko), conversational (A.M. Bogush, T.O. Pirozhenko), cognitive (S.O. Ladivir, N.I. Povyakel), research (M.M. Poddyakov) activity of preschool children.

According to A.P. Koshel, V.M. Koshel, one of the conditions for developing the preschooler's creative abilities is the organization of a developing environment, that is a set of spaces opened for actions of the individual, for the formation of a special subculture in which teachers can respond to the activity of children by their own activity, thus developing the preschooler's creative personality. They believed that the developmental environment is formed on the basis of the social environment and acts as an organized pedagogical space, based on complementary communicational activity of all participants of the educational process, and supposes the meaningful and interpersonal relationships associated with the creation of new sides of creative potential of each subject of the educational process involved in active creative activity interaction.

The search for methods and techniques for developing the preschooler's creative abilities showed that scientists have created a large arsenal of effective techniques that help to activate creative thinking and creative abilities.

Basing on theoretical analysis of development peculiarities of senior preschoolers' creative abilities, we agree with the definition of O.I. Kulchitskaya and believe that the creative abilities of senior preschoolers are the

properties aimed at creating a new and original, non-standard vision in the ordinary new possibilities of its functioning or incorporation as part of a new system, the ability to produce a large number of ideas.

2. Computer games and their psychological role in pre-school child's personality development

It is well known that the computer has become an integral part of every modern person's life, and with it the computer game has entered the circle of leisure. New game reality can both contribute to the development of the modern preschooler, provide preparation for future learning activities, meet the growing needs of preschoolers in the knowledge of the surrounding world, and adversely affect the child, lead to the formation of computer addiction, limiting interpersonal interaction with peers and parents, cause vision problems and physical development of the child as a whole. This is determined by the non-compliance with the sanitary and hygiene requirements and the introduction of psychological conditions that ensure the success of a certain type of games.

From the earliest childhood, computer game draws the child into the world of new cognitive possibilities. In general, the problem of the use of computer-oriented teaching aids in preschool institutions is considered by modern scholars in two directions: introduction of information technologies and pedagogical methods of their application into the didactics of preschool education; development of lessons' structure, recommendations on sanitary and hygiene requirements, safety problems in the organization of a computer-gaming complex in preschool educational institutions; comprehensive development of children in a computer-based play environment; ability to solve tasks of constructive activity; to form spatial representations; development of logical and mathematical skills; creative activity; intellectual and aesthetic development of the child [3, p. 10].

D.I. Kulakov states that early communication with the computer has many positives, it opens up a world of great opportunities for the child. Bright design of programs and animation activate the attention of the child, develop associative thinking [2, pp. 19–20].

According to S.V. Gureva, the computer greatly expands the provision of educational information, allows to increase the motivation of a child. Using multimedia technology (color, graphics, sound, modern video technology), computer games allow to simulate a variety of situations and environments.

When organizing the educational process of preschoolers with the help of computer games, it is extremely important to make the right choice: what computer games are developing for a child and which of them are of doubtful value. In this case, knowledge of the genre and rating of computer games is required. The genre is determined by the purpose of the game. The psychological purpose of the virtual worlds genre is to realize the need for gaming activity, to attempt to construct and reconstruct one's own beliefs, the inner world and the surrounding reality through the language and multimedia capabilities of the Internet; trying on the personalities of different roles and life positions in the discursive space of the game.

The following genres are currently identified [6, pp. 115–126]:

Adventure is a game with a full-fledged literary storyline, and the player in the course of the game reveals all the vicissitudes of the story, controlling the game character, which moves on the story and performs predetermined tasks, relying on the script mindfulness and logic, searches for clues and solves puzzles (Indiana Jones, Disney's Aladdin in Nasira's Revenge, Syberia).

Puzzles require the player to solve logical problems, predict possible situations (Tetris, Angry Birds).

Action is a game where it is necessary to use reflexes and speed of reaction to overcome game circumstances. The psychological importance of such a genre of games lies in the speed of reaction, the ability to make tactical decisions quickly, develops high concentration of attention and quick reaction (Wolfenstein 3D, Max Payne, Mortal Kombat, Mario).

Maze is a game, in which a character moves the maze to find a way out, collect items and / or avoid traps and dangers. Often, games in this genre have a time limit (Pac-Man, Boulder Dash).

Role Playing Game (RPG) is a game, a character of which has certain skills and characteristics that can be found, and subsequently developed, by completing the storyline. The psychological significance of the role playing computer genre is to enrich the senses and gain experience, develop imagination, overcome fears, and develop communication skills (The Elder Scrolls (series), Gothic (series), Witcher (series), Neverwinter Nights).

Strategy is a game that represents the management of large-scale processes, such as building cities, doing business, commanding the army, etc. The psychological significance of the strategy game genre lies in the formation of systems analysis skills, the formation of perseverance, the ability

to plan their actions, to train multifactorial thinking (Heroes of Might and Magic III, Civilization, StarCraft, Age of Empires).

In addition, the psychological role of computer games in the development of elder preschoolers is that children who play computer games show a greater speed of reaction and readjustment between tasks, better visual-motor coordination, the ability to work with large amounts of information, more efficiently perform the task of estimating the number of objects in a group without counting and track the movement of a large number of objects.

In general, analyzing computer games by their psychological direction, the following types of computer games have been identified, which will stimulate the development of creative abilities: *games for the development of creative ease* – cyclical; *to develop creative originality* – logical; *games for the development of creative flexibility* – adventure; *games for the development of creative productivity* – strategy; *creative imagination games* are turn based strategies.

Thus, computer games can perform a number of social and psychological functions, such as motivational, developmental, educational, cognitive, communicative, psychotherapeutic, but only if they are properly used, the players have the skills of self-regulation, the ability to timely stop playing activities, developed self-control. We emphasize that these qualities are still underdeveloped in preschool children, which is why consideration is given to the question of correct forms of conducting classes aimed at developing the creative abilities of senior preschoolers through computer games.

3. Psychological and pedagogical conditions for senior preschoolers' creative abilities development by means of computer games

The pressing question of the current stage of scientific research is the question of what conditions need to be created for the use of computer games to bring not only emotional satisfaction but also benefit in the field of creative, personal, cognitive development. As modern children have a new kind of «game» that is difficult to learn because of its rapid development, learning about computer games played by elder preschoolers and the conditions of their use is one of the main tasks of modern scientists.

Particularly relevant is the analysis of the conditions for building relationships (or, to a certain extent, relationships) of elder preschool children

with the virtual reality of computer games and the features of their functioning in the life of a child. A computer game is a software product that allows you to direct your child's activities toward a certain didactic goal in a playful way. These games are not isolated from the pedagogical process of the preschool institution, they are offered alongside traditional games and training, not replacing the ordinary games and activities, but supplementing them, entering into their structure, enriching the pedagogical process with new opportunities. Computer games offer those elements of knowledge that, under normal conditions and with the help of traditional didactics, are difficult to understand or to master.

Like any classes, computer games require time, proper use, patience and care on the part of adults, compliance with a number of health and hygiene requirements. According to E.P. Zhelibo, N.M. Zaverukhi, V.V. Zacharny, allowing your child to sit at the computer, one should not forget about the time limit. They believe that children of six to seven years old can increase their daily playing time to half an hour. These scientists also point out that you should not take the time to play your computer at bedtime. Do not play computer games, replacing the vital activities of sleep, food, rest, physical education, outdoor games and more. The main example for a toddler should be adults: if a child sees a mom and dad sitting at the computer all the time, it is difficult to convince them that it is unhealthy.

In her work I.O. Ivakina proceeded from the assumption that the individual-differentiated approach to senior preschoolers in the development of creativity through computer games should be phased in:

Stage I – study senior preschoolers' typical and individual features of creative abilities display;

Stage II – preparation of individual and group educational programs of creative abilities both in whole subgroups and in individual children;

Stage III – organization of computer games according to individual and group programs of creative abilities development;

Stage IV – analysis of the achieved results and correction of pedagogical influence on the child's personality.

I.M. Novik believes that for effective pedagogically appropriate use of game programs to educate and develop preschoolers teachers and parents need to put into practice a number of recommendations:

Chapter «Psychological sciences»

- choose the game genre according to the temperament and inclinations of the child;
- allow games to be played with research content rather than entertainment content;
- the duration of the game is chosen according to the age of the child and the nature of the game;
- it is not recommended to interrupt the game until the episode is over, to leave the computer with the knowledge of the unsuccessful work;
- some games are compatible for adult and child games (adventurous and role-playing) [4, pp. 45–112].

Based on the analysis of works mentioned below, a number of recommendations have been identified regarding the mode and organization of the introduction of computer games into the practice of preschool institutions:

- Computer lessons at a preschool are held with children over five years old;
- The maximum one-time computer duration is:
 - for children of 6 years of the 1st-2nd health group – 15 minutes a day;
 - for children of the 3rd health group – 10 minutes a day;
 - for children of 5 years old of the 1st-2nd health group – 10 minutes a day;
 - for children of 5 years old of the 3rd health group – 7 minutes a day;
 - for children of 5-6 years old, who are at risk for vision – respectively 10 and 7 minutes per day;
- Children’s classes with the computer are organized two to three times a week. The maximum frequency of work per week for children of 5 and 6 years old is three times;
- days of the week when you can work with your computer: Tuesday, Wednesday, Thursday are optimal, Monday is possible, Friday is not recommended (fatigue, weekend expectations, frequent distractions);
- Recommended time of day for classes: the first half of the day is optimal, the second half of the day is acceptable;
- Work place with a computer in a 30-minute development session – the middle of the session, between the introductory (preparatory) and final parts;
- Teacher’s behavior style: liberal (friendly, attentive);
- Preventing general and visual fatigue is a must in preschool children. One and a half minute eye exercises should be performed immediately after working on the computer;
- After each session, the room is ventilated.

It should be noted that it is necessary to clearly differentiate educational-game programs from the actual computer games, because in educational programs children need a little instruction for further independent play, and when playing in ordinary computer in order to positively influence the game on the development of the child becomes inalienable.

4. Development features of senior preschoolers' creative abilities

Leading scientists (D. Wexler, N.V. Krasnoshokov, O.I. Kulchytska, G.P. Lavrentyev, D. Raven, T.M. Titarenko, E.P. Torrens, L.G. Chorna), who were engaged into detection of creative abilities, identification of creative abilities of senior preschoolers, noted that it is a particular problem, because, despite the effectiveness of psychometric test methods, none of them gives a complete picture of the creative development of the child and sufficient confidence in the reliability of the assessment of creative abilities [1, pp. 55–66; 7, p. 128]. The main reason is that these techniques are focused on the effective side of the manifestation of mental processes, inclinations, activities and creative inclinations of the individual. Then, as the procedural side of these psychic phenomena, which gives the opportunity to be creatively developed, it remains out of noticing for such techniques.

Today, a variety of methods are used to diagnose creative abilities: from simple psychological-pedagogical (and even parental) observation to specially designed, standardized and validated test methods, as well as game, training tasks. Based on the analyzed basic requirements for psycho-diagnostic tools, determination of the sample (composition, age limits, number of children-respondents), the selection and modification of methods to the psycho-diagnostic complex in accordance with the criteria of creative abilities, the established sequence of procedures for conducting psycho-diagnostic procedures theoretical considerations, we consider it possible to carry out an empirical study of development features of senior preschoolers' creative abilities.

In accordance with the criteria and indicators of creative ability, the rationale and development of empirical work methods aimed at identifying the peculiarities of senior preschoolers' creative abilities development was carried out.

The analysis of results after studying the peculiarities of senior preschoolers' creative abilities development makes it possible to conclude

that the tasks were extremely difficult for children of this age category. In general, the children behaved differently during the diagnosis of all tasks. Some tasks were performed willingly, some were done as if by the method of “Words on the letter K” O.I. Kulchytska, L.G. Chorna, proved to be extremely difficult: only 10 children were able to cope with it.

As it can be seen from the Table, the more advanced children’s creative abilities appeared by the criterion of creative ease, that is, the children were overwhelmingly concerned with the tasks with constant interest, tried to evaluate and analyze the tasks assigned, easily included in the work and solved the tasks. Such children were identified by 66 (41.2%).

Table 1

**Senior preschoolers’ development
of creative abilities study results by all criteria**

Levels	Very High		High		Average		Low		Very Low		Total	
	q-ty	%	q-ty	%	q-ty	%	q-ty	%	q-ty	%	q-ty	%
Creative ease	13	7.9	53	32.3	63	38.4	27	16.5	8	4.9	164	100
Creative originality	13	7.9	16	9.8	54	32.9	62	37.8	19	11.6	164	100
Creative flexibility	3	1.8	22	13.4	30	18.3	47	28.7	62	37.8	164	100
Creative productivity	0	0	18	11	63	38.4	69	42.1	14	8.5	164	100
Creative imagination	12	7.3	16	9.8	64	39	52	31.7	20	12.2	164	100
Creativity	0	0	6	3,7	64	39.0	75	45.7	19	11.6	164	100

The least developed among older preschoolers were creative productivity and creative flexibility. There were 109 children (66.5%) and 83 (50.6%) in the criterion of creative flexibility. This is due to the fact that the senior preschoolers at the time of the ascertainment experiment, namely their five-year age, had a rather small vocabulary, which they were guided by. Most of the words, rhymes, plots, they needed to be helped in a variety of ways, such as: hint, question-hint, stimulating material.

The criteria for creative originality (54 children (32.9%)) and creative imagination (64 children (39%)) were found at the average level of deve-

lopment. This indicates that the children were guided most of the time by their own experience and mood. Therefore, new ideas, new, fantastic stories, ways of solving problems were performed periodically and with help.

Summarizing the results of elder children creative abilities detection, it should be noted that at this stage, a very high level of expression of creative abilities was not attributed to any child who by all criteria belonged to this level, did not take into account a large number of different factors in the case of adoption, did not show activity, to bring something new to the known tasks, did not depart from templates, was not guided by own reflections on the choice of own activity, could not imagine possible changes of reality.

Based on the analysis of empirical data regarding the elder preschool children creative abilities development, the following conclusions are drawn:

- the older preschoolers had more developed creative ease and creative originality;
- creative flexibility was the least developed;
- the average level in both groups was creative productivity and creative imagination.

5. Psychological program of senior preschoolers' creative abilities development by means of computer games

Program of senior preschoolers' creative abilities development by means of computer games supposes the need to cover the rationale, the content of the lessons and methodical recommendations for the further use of the program developed by us in the preschool educational institutions.

Based on the results of the analysis, the games that should contribute to the development of the creative abilities of the senior preschoolers were determined and the model of the development of the creative abilities of the senior preschoolers by means of computer games was constructed (Figure 1).

Psychological conditions for the use of computer games in the development of preschoolers' creative abilities are:

- development of self-regulation of preschooler behavior during computer games, moderate and balanced attitude towards the computer as a technical device;
- developing and adhering to a system of rules for computer work;
- compliance with PC gaming behavior;

- developing a habit of relaxation (in breaks and after the game);
- ability to independently select the game genre, content, level of difficulty, control system, interface settings; planning computer games with creative research content.

The general structure of the program for senior preschoolers' creative abilities development was determined by us: identification of the level of creative abilities development by the criteria; creation of psychological and pedagogical conditions for the support and creative abilities development, selection and conducting of a complex of lessons with the use of computer games; psychological and pedagogical counseling and education of parents and pedagogical staff of pre-school educational institutions (consultations, discussions); conducting developmental lessons by structure.

The general structure of the program for the senior preschoolers' creative abilities development was determined by us: identification of the level of creative abilities development by the criteria; creation of psychological and pedagogical conditions for the support and development of creative abilities, selection and conducting of a complex of lessons with the use of computer games; psychological and pedagogical counseling and education of parents and pedagogical staff of pre-school educational institutions (consultations, discussions); conducting developmental classes according to the structure shown in Table 2.

In order to increase the effectiveness of computer games for elder preschoolers' creative skills development, the following factors should be considered: game design, accessibility for the child, the level of development and the child's interest in game. In game, the child should be free to control the level of difficulty, the course of the game, the flexible storyline, which allows to create cognitive constructs.

Selection of computer games was performed according to the criteria of creativity. Thus, for the development of creative ease, computer games have been defined by genre. Cyclical games [arcades] are characterized by linearity of the storyline, smooth complication of levels, short duration of time and intensity of gameplay. In order to develop creative originality, computer games were identified by genre. Games of the logic genre [logical] characterize the solution of logical tasks that require the player to use logic, strategy, intuition and sometimes erudition and attention. Adventure has been defined for the develop-

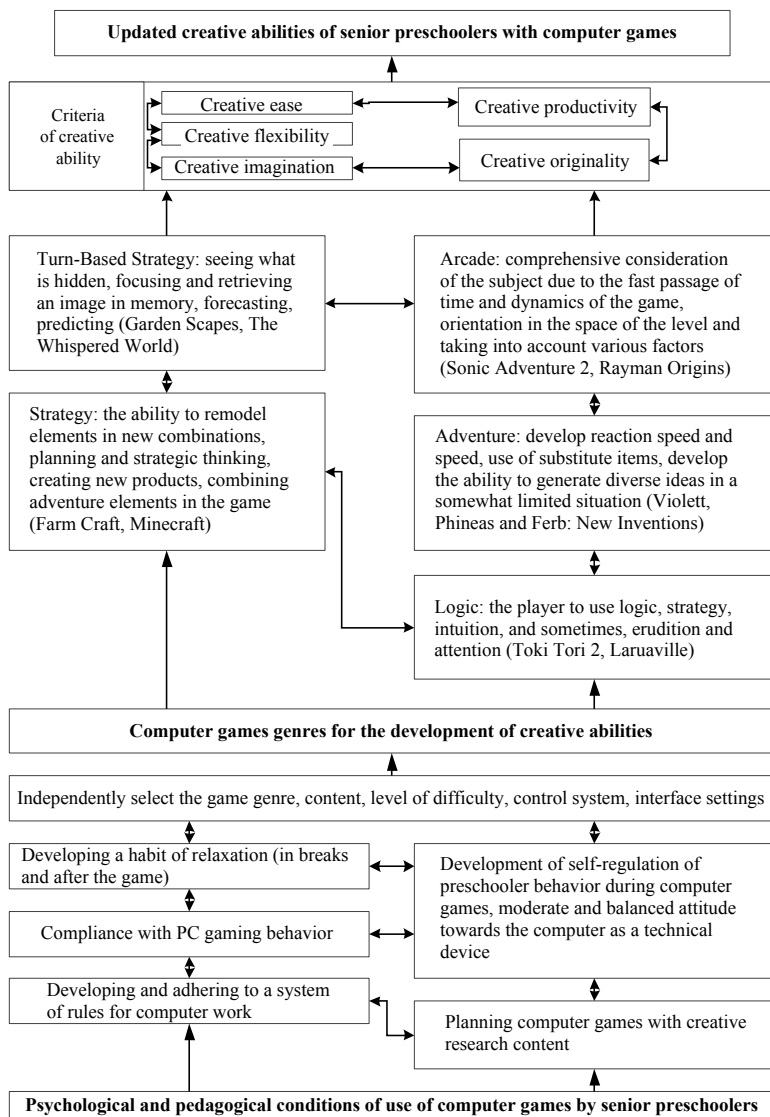


Figure 1. A model for development of senior preschoolers' creative skills by means of computer games

Table 2

General structure of developmental activities for senior preschoolers' creative abilities development

Stages	Content	Aim
Introductory	Ritual of greeting, setting up for classes	Creating a welcoming atmosphere, setting up for interaction and teamwork
Main	Conversation	Promoting knowledge absorption of different types of response to the same situation; formating ways of correct behavior; express diagnostics of individual forms of response in situations of anger, aggression, dissatisfaction
	Computer gaming	
	Relaxation exercises	To learn to be free from dissatisfaction with one's own strengths and results, from anger by psychological methods (play, conversation, exercise); relieve tension
Final	Summary of the lesson. Reflection. Farewell ritual	Sharing impressions, getting feedback, tuning in to positive changes in child development

ment of creative flexibility for computer games by genre. This genre is an interactive story with a protagonist driven by a player. In order to develop our creative productivity, we have identified computer games by genre [strategy]. This genre is a game where the key to winning is planning and strategic thinking. In order to develop our imagination, we have identified computer games by genre [Turn-Based Strategy]. This genre characterizes the computer games where players take turns acting in turns. Until the first player completes the actions, the others cannot start the move.

During the final phase of the experiment on the development of senior preschoolers' creative skills by means of computer games the results were analyzed (dynamics of development of creative ease, creative originality, creative flexibility, creative productivity, creative imagination), thematic meetings with parents and pedagogical colleges were held.

Testing the effectiveness of the program of senior preschoolers' creative abilities development by means of computer games supposed re-diagnosis of creative abilities in experimental and control groups according to the developed algorithm of psychodiagnostic research.

Table 3

Quantitative indicators of the development of senior preschoolers' creative abilities by means of computer games before and after conducting a formative experiment

Levels	CG (n=81)				EG (n=83)			
	Before		After		Before		After	
	q-ty	%	q-ty	%	q-ty	%	q-ty	%
Very high	0	0	0	0	0	0	7	8.6
High	4	4.9	5	6.2	2	2.4	9	11.1
Average	34	42.0	50	61.7	30	36.1	53	65.4
Low	35	43.2	20	24.7	40	48.2	10	12.3
Very low	8	9.9	6	7.4	11	13.3	2	2.5

Data that are shown in Table 3 indicate positive changes in the development of senior preschoolers' creative abilities, which occurred after the developing program.

According to the criterion of creative ability, the number of children in the control group, which did not include any child, remained unchanged, at high (from 4.9 to 6.2%) and average (from 42.0 to 61.4%) levels also occurred decrease in quantitative indicators at low (from 43.2 to 24.7%) and very low (from 9.9 to 7.4%) levels.

In the experimental group: there was an increase in the manifestations of creativity at a very high (from 0% to 8.6%), high (from 2.4% to 11.1%) and average (from 36.1% to 65.4%) levels, quantitative indicators decreased at low (from 48.2% to 12.3%) and very low (from 13.3% to 2.5%) levels.

The effective development of elder preschoolers' creative skills depends on the creation of conditions for parents and employees of preschool education facilities favorable for positive perception of the computer game, in which the child receives comprehensive support and guidance for learning the information obtained while playing computer games.

6. Conclusions

Based on theoretical analysis and empirical research, the influence of computer games on the development of creative abilities in senior preschool children by the means of computer games is observed. The theoretical approaches for the study have been determined, the criteria (cre-

ative ease, creative originality, creative flexibility, creative productivity, creative imagination), indicators and levels (very high, high, average, low, very low) of development of creative skills in senior preschool children have been substantiated. The study has revealed the prevalence of middle and low levels in the development of creative abilities in senior preschool children. The psychological and pedagogical conditions for the effective usage of computer games in order to develop the creative abilities in senior preschool children have been theoretically substantiated. The model of the program for the development of creative abilities in senior preschool children by the means of computer games (arcade, logical, adventure, strategy, turn-based strategy), selected according to the criteria of creative abilities has been developed and tested, and the efficiency and necessity of implementing the author's program in the practice of pre-school establishments have been proven. Methodical recommendations for parents, psychologists and employees of preschool establishments regarding the development of creative abilities in senior preschool children by the means of computer games have been developed.

As a result of experimental work, the effectiveness of the proposed program has been proved and the feasibility of its use in pre-school establishments for the children of the senior preschool age has been proved.

The practical significance of the study is that the author's modified method of diagnosing levels of development of creative abilities of senior preschool children and a proven program for their purposeful development, methodical support, can be used in work with this category of pupils by psychologists, employees of preschool establishments and parents of children. The results of the theoretical and experimental research can be used in the professional training of psychologists of preschool establishments in the study of age, pedagogical and practical psychology, as well as in the system of postgraduate psychological and pedagogical education and in the activities of the psychological service.

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