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THE PROBLEM OF DEVELOPING CRITICAL THINKING SKILLS IN PRESCHOOLERS

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Abstract. The article is devoted to the analysis of the problems of developing critical thinking skills in children in preschool organizations. The trends and technologies of innovative activity in education and their impact on the process of developing the diverse skills of children in preschool organizations are revealed. The research of foreign and Kazakhstani authors on the problem under study is analyzed. Since pedagogical methods are the basis for the development of critical thinking in children, their inclusion in the educational process will undoubtedly affect the further development of future teachers. This article is written in accordance with the objectives of the dissertation research work. The purpose of our research work is the problem of developing critical thinking skills in preschoolers

To conduct a quantitative analysis of effective development methods, familiarizing teachers with the main components and criteria, indicators of the development of critical thinking in children, to identify ways of organizational actions of children for future teachers of preschool organizations. The stages of the application of critical thinking technology in the didactic process in preschool organizations, the activities of the educator, the activities and methods of the child's activity are determined. The research paper presents a table in which the learning outcomes of Bloom's

taxonomy are aimed at developing understanding, application, analysis, synthesis, and evaluation of learning skills that influence the development of critical thinking. The authors presented the components of the technology of critical thinking of preschoolers in the didactic process, indicators, levels of formation of critical thinking in children, used diagnostic methods and gave the results of the ascertaining stage of the experiment.

As a result, recommendations are presented for effective work in preschool organizations to use innovative tools in the process of developing critical thinking.

Key words: critical thinking, technology, cognitive, creative, reflection, didactics, children, organized activities

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МЕКТЕП ЖАСЫНА ДЕЙІНГІ БАЛАЛАРДА СЫНИ ТҰРҒЫДАН ОЙЛАУ ДАҒДЫЛАРЫН ДАМЫТУ МӘСЕЛЕСІ

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Аннотация. Мақала мектепке дейінгі ұйымдарда балалардың сыни тұрғыдан ойлау дағдыларын дамыту мәселелерін талдауға арналған. Білім беруді инновацияландырудың тенденциялары, технологиялары және олардың мектепке дейінгі ұйымдарда балалардың жан-жақты дағдыларын дамыту процесіне әсері анықталды. Бұл мәселе бойынша шетелдік және қазақстандық авторлардың зерттеулері талданды. Педагогикалық әдістер балалардың сыни тұрғыдан ойлауын дамыту үшін негіз болып табылатындықтан, оны оқу-тәрбие процесіне енгізу болашақ педагогтардың одан әрі дамуына әсер ететіні сөзсіз. Бұл мақала жазылып жатқан диссертациялық зерттеу жұмысының мақсат міндеттеріне сай жазылған. Зерттеу жұмысының мақсаты мектеп жасына дейінгі балалардың сыни тұрғыдан ойлау дағдыларын дамыту.

Балаларды сыни ойлауға дамытудың негізгі компоненттері және критерийлері, көрсеткіштерімен педагогтарды таныстыра отырып, тиімді дамытудың әдістеріне сандық талдау жасау, болашақ мектепке дейінгі ұйым педагогтарына балаларды ұйымдастыратын іс-әрекеттерінің жолдарын

айқындау. Сыни тұрғыдан ойлау технологиясының мектепке дейінгі ұйымдарда дидиактикалық үрдісте қолданылу кезеңдері, тәрбиешінің қызметі мен баланың іс-әрекеті және әдістері анықталды. Зерттеу жұмысында Блум таксономиясы бойынша оқыту нәтижелері сыни тұрғыдан ойлаудың дамуына әсер ете келе оқу дағдыларын түсіну, қолдану, талдау, синтездеу және бағалауды дамытуға бағытталған кесте ұсынылды. Авторлар дидактикалық үрдісте мектеп жасына дейінгі балалардың сыни тұрғыдан ойлау технологиясының компоненттері, көрсеткіштері, балалардың сыни тұрғыдан ойлауының қалыптасу деңгейлерін ұсынып, диагностикалық әдістерін қолданып, эксперименттің анықтау кезеңінің нәтижелерін көрсетті. Нәтижесінде мектепке дейінгі ұйымдарда сыни ойлауды дамыту процесінде инновациялық құралдарды тиімді қолданып жұмыс істеуге ұсыныстар берілді.

Түйін сөздер: сыни тұрғыдан ойлау, технология, когнитивтік, креативтік, рефлексия, дидиактика, балалар, ұйымдастырылған іс-әрекет.

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ПРОБЛЕМА РАЗВИТИЯ НАВЫКОВ КРИТИЧЕСКОГО МЫШЛЕНИЯ У ДОШКОЛЬНИКОВ

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Аннотация. Данная статья посвящена анализу проблем развития навыков критического мышления у детей в дошкольных организациях. Выявлены тенденции, технологии инновационной деятельности в образовании и их влияние на процесс развития разносторонних навыков детей в дошкольных организациях. А так же проанализированы исследования зарубежных и казахстанских авторов по исследуемой проблеме. Поскольку педагогические методы являются основой для развития критического мышления детей, их включение в учебно-воспитательный процесс, несомненно, повлияет на дальнейшее развитие будущих педагогов. Данная статья написана в соответствии с целевыми задачами диссертационной исследовательской работы. Цель нашей исследовательской работы проблема развития навыков критического мышления у дошкольников

Проведены количественный анализ методов эффективного развития, ознакомив педагогов с основными компонентами и критериями, показателями развития критического мышления детей, определить пути организационных действий детей для будущих педагогов дошкольных организаций. Определены этапы применения технологии критического мышления в дидиактическом процессе в дошкольных организациях, деятельность воспитателя, деятельность и методы деятельности ребенка. В ходе исследовательской работы представлена таблица, в которой результаты обучения таксономии Блума направлены на развитие понимания, применения, анализа, синтеза и оценки учебных навыков, влияющих на развитие критического мышления. Авторы представили в дидактическом процессе компоненты технологии критического мышления дошкольников, показатели, уровни сформированности критического мышления детей, использовали диагностические методы и дали результаты констатирующего этапа эксперимента. В результате представлены рекомендации для эффективной работы в дошкольных организациях к использованию инновационных инструментов в процессе развитии критического мышления.

Ключевые слова: критическое мышление, технология, когнитивная, креативная, рефлексия, дидиактика, дети, организованная деятельность.

Introduction

In today's rapidly changing world, we receive, analyze and share a huge amount of information every day. For this reason, the ability to think critically is more important than ever for person. In any sphere of human activity, a person's ability to analyze the information received, provide arguments and make decisions determines how successfully the will be in society. Critical thinking determines individual's ability to navigate everyday situations, regardless of whether he is an ordinary child or a highly qualified specialist.

The formation and development of critical thinking should take place even at preschool age and the systematic introduction and application of critical thinking strategies will help children develop skills that allow them to critically look at a particular question, topic or problem. (Temple, Meredith, & Steele, 1998:48) This will not only lead to the successfully development of the educational program, but will also contribute to the realization of the children the future as a person in society. In turn the process of effective formation and development of critical thinking in preschoolers can be built by developing training recommendations and provided that a properly organized system for evaluating this skill in a typical standard program (Halykova, 2020:78). As noted by A.E. Abylkasymova, the introduction of innovations in the field of education will undoubtedly give a new impetus to the development of the education system, its theoretical and methodological foundation (Abylkasymova, Ryjakov, Shishov, 2015:9).

Critical thinking technologies, which appeared in the twentieth century, are becoming more famous in pedagogy at the beginning of the 21st century. Their

application on the educational process helps to get acquainted, master and put into practice the knowledge gained (Mushtavinskaya, Trofimchik, 2018:144). This fully corresponds to the modern concept of preschool education of the Republic Kazakhstan. The fundamental period of the development of these qualities is preschool age, laying the foundations for social success and competitiveness throughout life. A child from early childhood encounters a huge number of situations where he must work with thinking, including analyzing the situation and making a decision.

Such foreign scientists as Temple, Meredith K., Steele J., Halpern D., Kluster D., Mushtavinskaya I.V., Zair –Bek S.I. dealt with the development of critical thinking. The analysis of scientific research in the field of critical thinking development has revealed that this problem is relevant all over the world. Of particular interest were the studies of Paul R, Elder L., Alsaleh N., and other. In Kazakhstan the research of Iskakova L.M. Bekbaev J.C., Halykova G., Taibolatov K.M., Burdina E.I., Begimtaev A.I. and others is devoted to this problem.

According to the researchers. The use of critical thinking technology in the field of preschool education will increase the effectiveness of the educational process: make it rich and informative, and preschoolers, is turn, show desire and interest in solving any tasks.

The main direction that will allow you to from basic critical thinking skills is the educational process. The purpose of our study is to determine the level of formation of critical thinking in preschool children. Based on the proposed goal, we are fused with the following tasks:

- to analyze the theoretical foundations or the formation of critical thinking in older preschool children;
- identify the stages (phases) of critical thinking technology for older preschool children;
- to determine the criteria, indicators and levers of critical thinking formation in older preschool children;

Materials and methods

To solve the first problem, we have analyzed the theoretical foundations of critical thinking technology for older preschool children. The studies of Temple S., Meredith K., Steele J., Halpern D., Paul R., Elder L., Kluster D., Mushtavinskaya I.V., Zair-Bek S.I. and others are analyzed.

D. Halpern: “Critical thinking is contemplation directed further towards creativity using cognitive techniques to achieve mental results.” Here we see that in order to achieve the result conceived by the author in solving the problem, it is necessary to differentiate the innovative technologies necessary for the educational and cognitive process and combine them with creative thinking in accordance with the goals and objectives of the topic (Halpern, 2000:126).

R. Paul investigated the tendency of students to form critical thinking in the learning environment. In this study, he showed that critical thinking needs be taught at school. He argued that critical thinking is built on skills such as the ability to draw conclusions, explore premises, form conclusions and diagnose misconceptions. Thus, he gave the following definition, which states that critical thinking is a way of

thinking in which a thinker takes control of the processes inherent in thinking, applies intellectual standards them and there by improves the quality of his thinking. Based on this, critical thinking must be through the development of unbiased, critically thinking people who are ready to take into account the interests of various people or groups, regardless of their own interests and opinions. Paul called a model of dialogic or dialectical thinking (Paul & Elder, 2019:64).

Simmie G.M., Simmie J. critical thinking is independent thinking, information is not the end point of both primary and critical thinking. The critical thinking formulated the author begins with asking questions and identifying problems that need to be solved (Simmie, Moles, 2011:465).

The next level in taxonomy is analysis, which implies that both the structural form of the material and the content require a certain level of understanding. Analysis is followed by synthesis, which means the ability to combine all the data obtained and mentally reproduce the main connections between the elements of the analyzed whole. At this level, the student's ability to be creative and create something new is revealed (Iskakova, 2022:34). The highest level taxonomy is occupied by assessment that is ability to judge the importance of the material for a particular situation or solving a problem. The evaluation of the material takes place using certain criteria. The results of Bloom's taxonomy training have effect on the development of critical thinking, since both cases emphasis is placed on the development of knowledge, understanding, application, analysis, synthesis and evaluation in table 1.

Table 1 - Level of Bloom's taxonomy (according to D.Kluster)

Level of cognition	Content of the activity	Levels
To know	Memorization, disconnection, retelling	Lower
Understand	Be able to tell in your own words, summarize, prove the rules and definitions with examples	Average
Application	Be able to apply the acquired knowledge in practical activities, choose two optimal effective ways to solve problems, use knowledge in unfamiliar situations	Average
Analysis	Dividing the subject of research into different parts, consciously understanding the meaning of each part, using age-appropriate terms, grouping words	High
Merge	Combining results from a creative point of view. Be able to build a model on the structure of the topic, combine all the knowledge and make one all-encompassing conclusion.	High
Rating	The ability to make decisions, eliminate contradictions in different opinions, defend one's own opinion, and draw systematic conclusions.	High

As can be seen from this table, comparing the levels of cognition, one can clearly see how much the training system traditionally developed in general education requires improvement. Currently, the content of the updated standard curriculum has been developed based on the concepts of these theories, and the training tasks have been developed in accordance with the objectives of teaching Bloom's taxonomy (Alsaleh, 2020:21).

Results and discussion

Based on the analysis of foreign and Kazakhstan studies, it can be determined that critical thinking has a huge potential for learning opportunities, having a significant impact on the child. To solve the second task, the phases (stages) of using critical thinking technology have been identified, in our opinion, of the teacher and older preschool children, presented below in table 2.

Table 2 - Action and stages of critical thinking development

Stages of technology	The activity of the educator	Children's activities	Methods
Phase I (Phase) Arousing interest: - updating existing knowledge; - arousing interest in obtaining new information; - setting the child's goals.	Repetition of the topics covered by the studied problem in children, aimed at motivating children to further work	The child "remembers" what he knows about the issue under study, systematizes information before receiving new material, asks questions that he wants to get an answer to	Making a list of known information: a conversation is an assumption based on keywords; systematization of the material (graphic): clusters, tables; correct and incorrect statements; Confusing logical sequences; brainstorming; problematic issues, "easy" and "difficult" issues
The information received at the call stage is listened to and discussed. The work is carried out individually, in pairs or groups			
Stage II Disclosure (understanding) meaning: - getting new information; - correction of learning goals by the child.	Direct work with new information is aimed at maintaining interest in the topic, gradual progress from "old" knowledge to "new"	The child gets acquainted (listens) with the text, using the methods of active reading suggested by the teacher, he puts marks in the margins or gives a mark when he understands new information	Methods of active learning: "insert"; "fishbone"; "ideal"; Search for answers to the questions posed in the first part of the organized activity
At the stage of comprehension of the content, direct contact with new information is carried out. The work is carried out individually or in pairs. There should be two elements in teamwork: individual search and exchange of ideas			
III. reflection: - reflection, the birth of new knowledge; - - setting new learning goals by the textbook. - reflection, the birth of new knowledge; - setting new educational goals for the child	The educator should return the children to their original predictive thoughts; make changes; give creative, research or practical tasks based on the studied information	Children associate "new" information with "previous" information, apply the acquired knowledge at the stage of comprehension of the content	Filling in clusters and tables. Establishing cause-and-effect relationships between blocks of information. Go back to keywords, right and wrong statements. Answers to the questions posed. Organize a conversation (question and answer). Organization of various discussions. Organization of creative work. Research on selected issues of the topic
At the stage of reflection, analysis, creative processing, and interpretation of the information being studied are carried out. The work is carried out individually, in pairs or groups			

The use of active teaching methods and techniques contribute to the development of cognitive skills, independence, a positive attitude to the learning process, show interest and desire and facilitate overcoming difficulties. To solve the third task, we have defined the criteria, indicators and levels of computer literacy in older preschools children, shown in table 3.

Table 3 - Criteria, indicators and levels of critical thinking formation in older preschool children

№	Component	Dimensions	Indicators
1	Motivational (MC)	Interest, activity and search ability in the educational process based on critical thinking	Interest in mastering the educational process based on critical thinking, activity in performing actions, striving for innovation
2	Cognitive (MC)	Informativeness-cognitiveness	the ability to find facts in the information provided, critical thinking, the ability to draw conclusions from information, express thoughts
3	Action **(AC)**	Meaningful constructive	independence in decision-making, sociability, efficiency of execution, resourcefulness in response

The motivational component contributes to the development of cognitive interest, determines the need for independent learning and includes motives for future activities. Motivation is an obligatory component of educational activity, in which it performs stimulating, organizational and semantic functions. Increasing motivation and developing long-term positive motivation for learning is considered as one of the ways to optimize the learning process at various stages of learning. It is generally recognized to distinguish two types of motivation: social motives directly related to the content of learning, and cognitive motives formed in the learning process and related to the methods and content of learning. The motivation of educational cognitive activity consists of a set of certain motives. This component includes the cognitive interest of preschool children, the desire for innovation in critical, logical thinking and activity through tasks of various levels (Bekbaeva, 2021:65).

The cognitive component is the child's perfection and understanding of objects and phenomena through critical thinking, clarifying ideas about them, bringing them into line with previous ideas and striving for self – knowledge, while covering all psychological cognitive processes (Taibolatov, Burdina, Begimtaev, 2022:157).

The activity component defines the essence of knowledge and skills formed by a child as a result of knowledge of methods and techniques of activity, as the ability of an individual to perform any activity in changing situations based on knowledge and skills.

Based on the content of the above criteria and indicators, we have determined the levels of development of cognitive activity of preschool children through the technology of critical thinking.

The *low level* is characterized by the lack of interest and motivation in children of the preschool group for various types of activities.

Middle-level children perform actions only to the story, display, repetition by caregivers or other adults (Kireeva, 2007:599).

Next, cognitive component is followed by S. Nemov's book "what is missing in the pictures?", the methods study "Squares of Koos" by K. Koos were obtained for the activity component.

Method No. 1. "What is missing in the pictures?". Purpose: The child is offered a series of images presented below. Each of the images in this series is missing some important details, The child is given the task to identify and name the missing part faster.

The person conducting the psycho diagnostics records with a stopwatch the time that the child spends on completing the entire task. The working time is estimated in points, which then serve as the basis for a conclusion about the level of development of the child's perception.

Evolutions of the results

10 points. The child completed the task in less than 25 seconds and named all 7 missing objects in the pictures.

8-9 points. The child's search for all the missing items lasted from 26 to 30 seconds.

6-7 points. The search time for all the lost items ranged from 31 seconds to 35 seconds.

4-5 points. The search time for all lost items ranged from 36 to 40 seconds. 2-3 points. The search time for all missing items ranged from 41 to 45 seconds.

0-1 points. The search time for all missing parts is more than 45 seconds.

The assessment is given in points, decimal system and given in intervals, which is a direct basis for concluding about the level of psychological development of the child. Along with such general conclusions, the child, as a result of checking with the help of one method or another, receives accurate estimates that allow for a more accurate assessment of his level of development.

Method No. 2. The "Koos squares" method. Purpose: to identify the level of formation of constructive spatial thinking, the possibilities of spatial analysis and synthesis, constructive practice, to study the level of aspiration (Taubaeva, Bulatbaeva, 2015:214).

Stimulating material: 9 multi-colored cubes, colored braid patterns, arranged in order of difficulty.

The ritual:

A pattern is placed on the table in front of the child, and the cubes are placed next to each other in random order. Depending on the age of the child and the goals of the study, you can limit the number of cubes according to the proposed samples (this will make the child task easier) or allow to child to choose the correct number the cubes themselves. Hint "Listen, there is a pattern in the picture. It can be made from these cubes. Try to add up the same thing". The child should place the patterns on the

table, not place the cubes next to it, not on the pattern. Since it has been successfully completed, it is recommended to add the following models, displaying them one at time, increasing the complexity from it (Nurbekova, 2023:123).

According to the results obtained during the analysis of constructive, active activity of children, we see that the level is bellow average. So according to the "split pictures" method, they showed a low level or 42%. (Figure 1)

Table 4. - Expert assessment indicators based on the "What is missing in the pictures?" methodology

Methodology	Group	Level		
		high	medium	low
Split pictures	EG (52)	12 (23%)	18 (35%)	22 (42%)
	CG(50)	7 (14%)	19 (38%)	24 (49%)

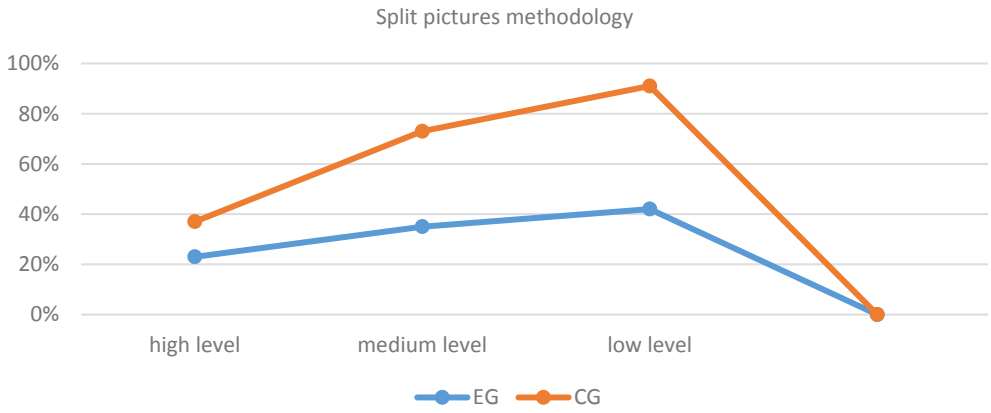

Figure 1 - Diagram of the experiment using the "What is missing in the pictures?" method

They do not understand the true meaning of many creative works. Most often, in creative work children showed courage, low independence, the need for joint cognitive dialogical actions with adults, and needed adult help. Children who showed a high level of activity shows. (table 5)

Table 5. - Expert assessment indicators based on the "Koos squares" methodology

Methodology	Group	Level		
		high	medium	low
Koos squares	EG (52)	11 (21%)	17 (32%)	24 (47%)
	CG(50)	12 (24%)	18 (36%)	20 (40%)

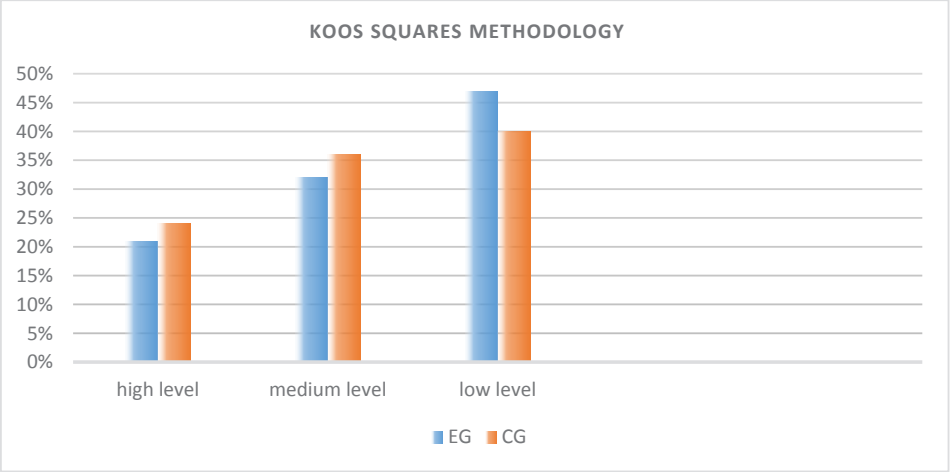

Figure 2 - Diagram of the experiment using the “Koos squares” method

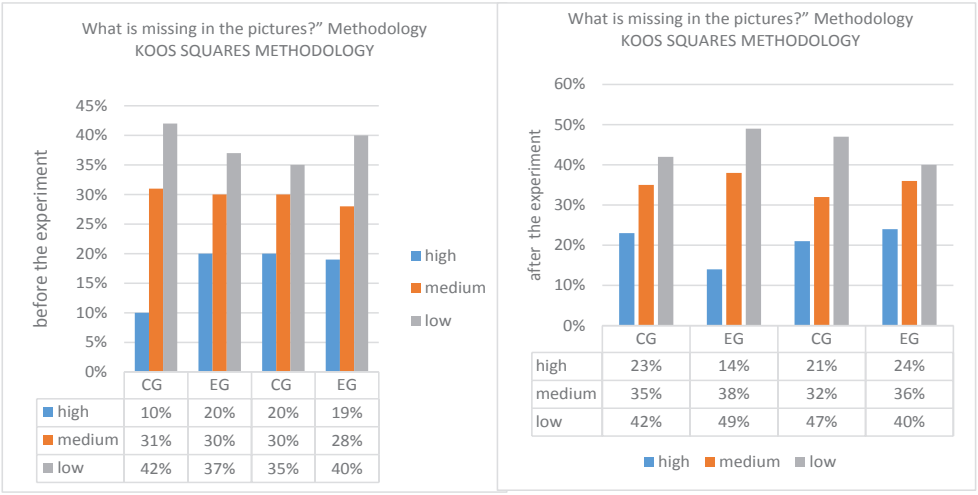

Figure 3 - Diagram indicators methods before and after experiment

According to the “Koos squares” methods 38% showed a level below average. The data obtained indicate that the further purpose of our study is to develop and test a critical thinking program for the development critical thinking in older preschool children.

Thus, according to the results or the experiment, 46% in the experimental group and 40% in the control group showed, according to the “Koos squares” method in the experimental group 42%, and in the control group showed levels of 50%.

Conclusion

The development of critical thinking in preschoolers is based on using the potential

of the didactic process. As a result of learning based on critical thinking, children design the directions of their development in preschool organizations, expand their understanding in innovative methods and gamification content, improved knowledge control and assessment environment. As a result, the child develops the skills and abilities to use critical thinking technologies in the didactic process (Konarjevskii, 2000:334).

Summing up the results of the research work, a theoretical differentiation and analysis of the *first task* were carried out. For the *second task*, criteria, indicators, research methods were determined of the basis of motivational, cognitive activity components, and an experiment was conducted. In the *third task,* the results of the diagnostic work obtained during the examination influenced our effectiveness in improving the level of critical thinking in children. Three tasks set in the research work were implemented, and specific indicators were obtained during the examination.

We believe that the development of critical thinking among preschoolers can become one of the most important areas of modernization of the entire educational sphere. Considering all the possibilities, advantages of this technology, it can be understood that this critical thinking technology has great potential. In this article, we are analyzed the theoretical foundations of the formation of critical thinking, and also identified the stages of critical thinking technology for older preschool children. According to the task the components indicators and levels of critical thinking formation in older preschool children were determined.

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