

МРНТИ 15.31.31

<https://doi.org/10.51889/2021-3.1728-7847.11>

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PERSONALITY-ORIENTED EDUCATION AS A CONDITION OF THEORETICAL THINKING DEVELOPMENT OF PRIMARY SCHOOL CHILDREN

Abstract

The specificity of personality-oriented education as ecological psychological education environment contributing to the development of primary schoolchildren theoretical thinking is considered in the article. Basic problems connected with such approach inculcation into modern school practice are singled out.

Key words: Personality-oriented education, ecological-psychological education environment, theoretical education environment, theoretical thinking, primary schoolchild.

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ЖЕКЕ ТҰЛҒАҒА БАҒЫТТАЛҒАН БІЛІМ БЕРУ БАСТАУЫШ СЫНЫП ОҚУШЫЛАРЫНЫҢ ТЕОРИЯЛЫҚ ОЙЛАУЫН ДАМУДЫҢ ШАРТЫ РЕТІНДЕ

Андатпа

Мақалада бастауыш сынып оқушыларының теориялық ойлауын дамытуға ықпал ететін экологиялық-психологиялық білім беру ортасы ретінде тұлғаға бағытталған оқытудың ерекшелігі қарастырылады. Бұл тәсілді заманауи мектеп практикасына енгізумен байланысты негізгі проблемалар атап өтілді.

Түйінді сөздер: тұлғаға бағытталған оқыту, экологиялық-психологиялық білім беру ортасы, теориялық ойлау, кіші оқушы.

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ЛИЧНОСТНО-ОРИЕНТИРОВАННОЕ ОБРАЗОВАНИЕ КАК УСЛОВИЕ РАЗВИТИЯ ТЕОРЕТИЧЕСКОГО МЫШЛЕНИЯ МЛАДШИХ ШКОЛЬНИКОВ

Аннотация

В статье рассматривается специфика личностно-ориентированного обучения как эколого-психологической образовательной среды способствующей развитию теоретического мышления

младших школьников. Выделены основные проблемы, связанные с реализацией данного подхода в практику современной школы.

Ключевые слова: личностно-ориентированное обучение, эколого-психологическая образовательная среда, теоретическое мышление, младший школьник.

Modern state educational institutions (for various reasons) are not always a place of comfort for every child; therefore they cannot form him as a fully developed personality, capable of competently building its future in a system of market relations. In other words, the problem of modern educational environments can largely be defined by the need to create an ecological-psychological space that would allow the child to develop as a full-fledged individual without compromising all levels of health. The health of children is directly dependent on an educational institution that provides children of all kinds of nervous systems and levels of preparation with different starting conditions for success.

The personality of the child in such a space will be formed in the following direction: from the development of a sense of belonging, through the unity of knowledge and adequate evaluation of them, to the aesthetic satisfaction resulting from the activities and life of human society. It will be an educational environment of health and joy, creativity and inspiration, for both child and teacher, i.e. environmentally friendly.

Without pretending to be categorical, it can be noted that such educational institutions are already beginning to form, but in order for the process of creating a new health educational institution to be successful, it is necessary to change the content of education, the structure and principles of teaching in it, which will create conditions for the formation of a healthy lifestyle and individual development of the child. It should certainly be an alternative to the existing system of development and socialization of the child, taking into account the specificities of a particular region.

In the current context of reforming of the socio-economic, political and cultural life of the country, the democratization and humanization of secondary schools, the change in the educational paradigm, the problems of increasing the efficiency and quality of education and upbringing of the younger generations, preparing them for labor and social activities in a market economy are actualized.

The most important factor in the successful implementation of this task is a comprehensive study and consideration of individual, psychological, gender, age and aesthetic capabilities of students, personality-oriented education and upbringing.

The criteria for the quality of school work in an ecological-psychological environment are: children's health; scientifically based diagnostics of student development; creative research laboratory of the teacher; creation of an integral educational system that develops children and preserves their health; building a school world in which the child does not prepare for life, but lives.

The realization of personality-oriented learning in the educational process of the school implies abandoning the system of «ready-made» knowledge, skills, abilities and is based on the effective involvement of students in educational and learning activities, aimed at mastering the knowledge and experience of creative activity independently. These targets correspond to the most important educational task in society – to form a commitment to lifelong learning for children, the ability to live and work in an information society; to ensure the development of reflexive skills, creative abilities. Indeed, the processes of informatization in society and the rapid pace of scientific and technological progress are placing increasing demands on the personal development of human beings - the formation of such qualities as independence, initiative, ingenuity, entrepreneurship; the ability to set tasks, to develop projects of activities, to make optimal decisions.

An experimental study of the development of the components of theoretical thinking in the context of personality-oriented learning was conducted during the academic year, namely from September to May. As a result, each methodology was carried out twice: the first time- at the beginning of the academic year, before the introduction of a personality-oriented program, and the

second time- at the end of the academic year, after training in a personality-oriented program. As diagnostic methods, the test of mathematical analogies developed by A.G. Gaishtut - diagnostics of general intelligence and the test «Qualitative assessment of problem solving», developed by A.Z. Zak were used. The experimental groups were composed of primary school students, firstly in the context of personality-oriented learning (experimental classes) and secondly in the context of traditional schools. / students in the conditions of student-centered learning (experimental classes) and, secondly, students studying in traditional schools. The total number of students was more than 400. About 200 students are in classes with a personality-oriented system and 200 students in regular classes. Thus, all the results of the study were subjected to comparative analysis. Mathematical data processing was carried out according to the Student's t criterion.

The analysis of the results obtained during the test of the theoretical thinking of primary schoolchildren reveals differences in the thinking of children of this age: the number of students who solve problems in a theoretical way increases from September to May. This means that part of the “empiricists” become “theoreticians”; hence, the differences on this parameter are movable. In an experimental study of this method, based on the results obtained in the testing of students, the following levels can be distinguished: high, medium, low, which show the degree of the intellectual development of children studying according to the traditional program and children of classes with personality-oriented technology.

In determining the levels, a complex indicator was used, taking into account both the number of tasks and the empirically determined complexity.

The results obtained by the method of A. Zak are presented in Table 1

Table 1 - Average values of the formation of components of theoretical thinking of primary schoolchildren

Components of theoretical thinking	Classes							
	Classes studying in the system of personality-oriented learning				Regular class			
	Sep-tem-ber	May	difference between average	t criterion	Sep-tem-ber	May	difference between average	t criterion
ability to act in the mind	3,83	3,97	0,14	0,31 p>0,05	3,8	3,9	0,1	0,27 p>0,05
establishing a structural commonality of tasks	4,23	5,8	1,54	1,51 p>0,05	3,4	4,2	0,8	0,81 p>0,05
analysis of problem conditions	2,33	5,6	3,24	3,46 p<0,01	2,4	3,3	0,9	2,02 p<0,05
reflection	0,30	1,3	0,97	2,47 p<0,05	0,5	0,9	0,4	1,7 p>0,05
planning	0,30	2,9	2,60	5,92 p<0,01	0,5	0,4	-0,1	0,61 p>0,05

The analysis of the results of the theoretical thinking test of primary schoolchildren reveals differences in the thinking of children of this age: the number of students who solve problems in a theoretical way increases from September to May. This means that part of the «empiricists» become «theoreticians; therefore, differences on this parameter are movable. The results of the success of solving problems in accordance with the high, medium and low levels of success in solving problems in two groups of students are presented in Table 2.

Table 2 - Indicators of the severity of the components of theoretical thinking in two groups at the end of the year (May) (%)

Classes	Levels of expression of components of theoretical thinking (%)		
	High	Medium	Low
Experimental	13,34	86,66	0
Control	1,34	73,33	25,33

The proposed test of A.Z. Zak "Qualitative assessment of problem solving" showed that the students of experimental classes coped with solving problems most successfully. In these classes, the high level was 13.4% and in the control classes the high level was only 1.4 per cent, although it should be noted that the average level in the control classes was 73.33% and in the experimental classes, 86.66%, but in the control classes a low level stood out, equal to 25.3%, in the personality-oriented group this level is absent.

If the number of problems solved by children of experimental classes is much greater, then in an ordinary class theoretical thinking is only being formed. The dynamics of the development of thinking of these groups are different. You can see a big difference, and the advantage of being able to think theoretically in a class that learns through personality-oriented technology.

All this makes it possible to assert that the theoretical thinking of primary schoolchildren who study under a special program with introduction of personality-oriented technology is developing more successfully from September to May. The increase in the number of tasks solved by children enrolled in a personality-oriented program is relatively high (Table 3).

Table 3 - Average values of the formation of theoretical thinking of primary schoolchildren

Components	Classes with personality-oriented learning technology				Regular classes			
	the average			t – criterion	the average			t – criterion
Difference between averages	Sep-temb er	May			Sep-temb er	May		
Analysis	1,07	2,73	1,66	3,17 p< 0,1	1,0	1,7	0,7	2,70 p< 0,5
Comparison	0,93	2,07	2,04	3,32 p< 0,1	0,8	1,9	1,1	2,75 p< 0,5
Formation of analogies	0,40	1,83	1,43	4,43 p< 0,1	0,5	0,9	0,4	1,70 p> 0,5
Generalization	0,40	1,8	1,4	4,87 p< 0,1	0,5	0,8	0,3	1,73 p> 0,5

Solving the proposed tasks, children of ordinary classes in some cases used an empirical method of learning, tried to guess the answer, did not seek to understand the condition of the tasks. It follows that the low results and indicators of schoolchildren studying according to the traditional system. Other children tried to set a goal specific to the analysis, tried to analyze the condition of the problem, understand its system and find the right solution. Hence the high results in the personality-oriented group.

The results obtained during the solution of A.G. Gaishtut's problems in the Test of mathematical analogies are presented in Table 4.

Table 4 - Indicators of the expression of the levels of comparative analysis of the formation of mathematical operations according to the test of Gaishtut A.G. TMA at the end of the year (May) (%)

Classes	Levels of expression of components of theoretical thinking (%)		
	High	Medium	Low
Experimental	86,66%	13,34	0
Control	0	76,66%	23,34%

Each task is a task of the methodology corresponding to a certain mental operation. The implementation of which has been found to have unequal degrees of difficulty for students.

According to the data given in Table 4, it can be seen that at the stage of training in classes with personality-oriented learning technology, the average values for all components (analysis, comparison, formation of analogies, generalization) have significantly increased, and in the class of traditional training, the dynamics of the development of components is almost insignificant.

According to the data provided by this method, it is safe to say that the high level of mental development was shown by almost all children in classes with the introduction of personality-oriented learning technology - 86.66%, in ordinary classes there is no high level. In ordinary classes, of course, the dynamics of the development of operations can be traced, but to a much lesser extent - the average level is 76.66%, in the personality-oriented group the average level is 13.33%. The classes with the introduction of the personality-oriented learning technology do not have a low level, which means that all students have successfully completed mathematical tasks, while in the ordinary classes the low level was 23.33 per cent. Most of the children of these classes have developed only an empirical type of thinking. Students in experimental classes are read into the task, subtracting from the text the conditions of the task, the diagrams, the ratio of quantities. The process of solving the problem is purposeful, meaningful and manageable. At the same time, actions characteristic of theoretical thinking are observed: analysis, comparison, formation of analogies, generalization

Having carried out correlation analysis between the tests using Spearman's r_s , rank correlation, the concomitant dependence of the signs of theoretical thinking, mathematical analogies, in the control and personality-oriented groups was established and the results obtained are presented in Table 5.

Table 5 - Comparative results according to the methods of Gaishtut, Zak

Compared results by method	Correlation			
	regular classes	significance	classes with the introduction of personality-oriented technology	relevance
Qualitative assessment of the solution of A.Z. Zak's problems and the test of mathematical analogies by A.G. Gaishtut	0,37	$p < 0,05$	0,38	$p < 0,05$

From the data in table 5, it can be concluded that in both ordinary classes and experimental classes, the correlation between the results obtained by the A.G. Gaishtut and A.Z. Zak methodology is statistically significant ($p < 0.05$) and is positive.

Of course, one cannot speak of dependence in the strict sense, but by that word we mean influence, connection, any agreed changes. This suggests that in general the learning process itself has an impact on the development of theoretical thinking ($p < 0.05$).

The results allowed us to assert that training in personality-oriented technology provides a much greater degree of formation and development of planning abilities ($p \leq 0,01$) and analysis of the condition of the task ($p \leq 0,01$). The remaining components of theoretical thinking develop sufficiently in experimental classes, although such abilities as reflection have also significantly increased ($p \leq 0,05$) in these classes, compared with the control group of students.

In traditional teaching in children, the development of components of theoretical thinking in the dynamics from September to May is minimal and a significant increase is observed only in the ability to plan ($p < 0.01$) and the ability to analyze the condition of the task on ($p < 0.05$).

Considering in detail the development of the components of theoretical thinking of primary schoolchildren from September to May, it can be noted that in the class with the introduction of

student-centered learning technology in September, the average value for the assessment of this ability was 3.83, and in May 3.97 the increase was only 0.14. In the regular class as for September, the average value was 3.8, the increase to 3.9 by May was 0.1.

As a result, it can be seen that this ability to act «in the mind» is formed slowly, gradually, although there are increases, but they are practically insignificant. This is probably only the initial stage of the formation of the ability. The assimilation in the course of learning of the content of educational programs of developmental learning unfolds according to the dynamic scheme "from the abstract to the concrete" to a greater extent should ensure the formation of children's ability to act in their minds than the assimilation at this age of the content of primary school curricula.

Establishment of a common set of tasks (POPS), it is clear that such a valuable ability also develops gradually from September (4.23) to May (5.77) – in classes with the introduction of personality-oriented learning technology. The same happens in the regular class - September (3.4), May (4.2) Although the level of importance in these two groups was $p > 0.05$. but, but, depending on the increase of values, it can be said that in the experimental classes it is much more significant and higher (1.54) than in the control classes only 0.8.

It can be concluded that the organization of the learning process based on personality-oriented technology is a positive factor in the level of development of the ability to establish a structural community of a number of numbers, phenomena, tasks.

Considering the development of the next important component of theoretical thinking in primary schoolchildren - the analysis of the task condition, it turned out that the ability to analyze the task condition is still insufficiently developed in children of the traditional learning system and the level of formation of this component has increased by only 0.9 this suggests that this ability has practically remained at a low level.

The development of this component of theoretical thinking from September to May has shown great results in the context of personality-oriented learning technology. The growth rate was 3.46.

Thus, children engaged in the conditions of personality-oriented learning, most successfully cope with the analysis of the conditions of tasks and this ability probably depends more on the introduced personality-oriented learning technologies.

Reflection is closely related to analysis and is the most significant ability for a person. At the initial stage of teaching children at school, this ability to comprehend their actions and to find out their reasons turned out to be higher at the end of the school year in a class with a personality-oriented learning technology, with a difference of 0.97 and in the regular class of only 0.4 These results show that in the experimental classroom children learn how to distinguish their actions, how to carry out common tasks in different objectively homogeneous and heterogeneous tasks.

Planning is closely related to all the previous components of theoretical thinking, especially analysis and reflection. The data show that the dynamics of this component is developing from 0.3 to 2.9 by 2.6 in classes with personality-oriented learning technology. And a very interesting result was obtained in a regular class: at the beginning of the school year, the level of development of the planning ability was above 0.5, and by May there was a regression of this ability and the result was 0.4.

The reasons, of course, may be different, but the development and dynamics of components of theoretical thinking - the ability to act «in the mind», the ability to establish a structural community, the ability to analyze the condition of the problem, the presence of reflection and planning all occur.

As a result, it can be seen that significant changes are taking place in classes with the introduction of personality-oriented learning technology and less significant compared to the first indicators in conventional classes of traditional learning.

Considering how personality-oriented learning technology affects the development of mathematical analogies, (according to A.G. Gaishtut's test) considering the dynamics of their

development in comparison with ordinary classes and classes with personality-oriented learning technology, it can be seen that a significantly large shift ($p < 0.1$) has been achieved by absolutely all components: analysis, comparison, analogy and generalization - in experimental classes. This suggests that the formation of these components, intellectual abilities largely depends on the position of the student and teacher in the educational process, in the sense in which it is implemented in a personality-oriented technology, which contributes significantly to their rapid formation and improvement in the future.

Based on the data obtained during the analysis of the results of ordinary class children, it can be concluded that such components as analysis ($p < 0.5$) and comparison ($p < 0.5$) received proper development from September to May, the remaining components have no analogies and generalization of significant development ($p > 0.05$). This once again confirms our assumption that in the conditions of traditional learning there are few opportunities for meaningful, deep analogies, the range of variability in finding similar solutions is limited, little attention is paid to such an important technique as communication, and it helps the the student to replace some specific parameter value with an arbitrary one (a specific number is a variable).

Let us consider in detail the development of mathematical analogies in the dynamics of development (from September to May) and the comparison between the control group and the personality-oriented one.

The largest shift of 2.04 in the classroom with the introduction of personality-oriented learning technology was received by such a component of intellectual abilities as comparison – in September it was 0.93, and in May it was 2.97. This suggests that mathematics and computer science are among the important guarantors for the formation of the ability to compare. It should be noted that this capacity is not only theoretical but also applied in practical aspect., which is very important in human life.

In a regular class, there is a slight increase (1,1) in the ability to compare. This means that students do not differentiate essential features of objects and phenomena from non-essential, secondary ones.

Children studying according to a personality-oriented program freely compare several objects according to their common and essential features in order to obtain a generalized conclusion, find the most typical options from different aggregates and can operate with them when solving various tasks. The presence of several different options creates prerequisites for the use of a comparison technique for the purpose of correct generalization.

Considering the next component of intellectual abilities – analysis, it should be noted that in the classroom with the introduction of personality-oriented learning technology, there is a noticeable trend in the development of this component. If in September it was (1.07), then in May it became (2.73), the increase in average values was (1.66). In the class of the traditional learning system, this ability has developed by only 0.7.

According to the data obtained, it can be concluded that students of experimental classes can draw conclusions from those judgments that are offered to them as initial ones, analyze the material and, distracting themselves from the visual features of the subjects, draw logical conclusions.

In the class with the introduction of personality-oriented learning technology in September, the average indicator of the ability to draw conclusions was very small (0.40), even less than in a regular class (0.50), but during the period of personality-oriented program there was an increase in the development of this ability by (1.43), and in a regular class the increase was only (0.4).

Students of a class with a personality-oriented learning technology are, on average, better able to cope with the task as they are able to draw conclusions from two judgments that state the relationship between the first and second objects, the second and third using the transitivity property of some relations.

Generalization is one of the main abilities of the intellect. The ability to fix the general that exists in each object of the considered aggregate is developed gradually.

At the beginning of the school year, in September, this ability was developed in two classes at about the same level (0.4-0.5), but in May, in classes with the introduction of personality-oriented learning technology, the level of generalization formation rose by 1.4 and amounted to (1.8). In ordinary classes, the increase was equal to (0.3) and amounted to (0.8) in May.

In experimental classes, children try to find concepts that combine several subjects, fix the essential features of objects and combine them within a given area. Students of regular classes have difficulty completing tasks related to the generalization of features.

The study confirmed the initial assumption that the implementation of personality-oriented learning will be possible if learning is designed as a joint communicative and cognitive activity of teachers and trainees aimed at their development.

Experimental data have confirmed the effectiveness of the proposed psychological - pedagogical model of personality-oriented learning in improving the level of knowledge, intellectual and personal development of students.

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