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БІЛІМ АЛУШЫЛАРДЫҢ МАТЕМАТИКАЛЫҚ САУАТТЫЛЫҒЫН ЖЕТІЛДІРУДЕ КОГНИТИВТІ ӘДІСТІ ҚОЛДАНУДЫҢ ТИІМДІЛІГІ

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Аңдатпа

Мақалада математика сабағында когнитивтік оқыту жүйесіне енгізуге болатын бірқатар нақты әдістемелік принциптер ұсынылған. Бұл принциптерді қолдану үлгілеудің дидактикалық функциялары кеңінен қолданылатын, жеке танымдық қабілеттер ескерілетін және оқушы тұлғасының психикалық сферасының негізгі құрамдас бөліктері (ойлау, есте сақтау, зейін, мотивация) ескерілген.

Бұл мақаланың мақсаты – теориялық негіздеу және практикалық тұрғыдан дағдыларды жетілдіру негізінде оқу процесінде білім алушылардың математикалық танымдық қабілеттерін дамыту.

Оқушыларға математиканы оқыту процесінде когнитивті-бейнелік тәсілді жүзеге асыру көрнекі оқыту ортасын, оқушының көрнекі ойлау резервтерін пайдалануға басты назар аударылатын оқу жағдайларының жиынтығын құруға мүмкіндік береді. Бұл шарттар дәстүрлі көрнекі құралдардың да, көру жұмысын белсендіруге мүмкіндік беретін арнайы құралдар мен әдістердің де болуын болжайды. Когнитивтік-визуалды тәсіл «математикалық көруді» тәрбиелеуге бағытталған; мұғалім көрнекі ақпаратты ұйымдастыруға үнемі қамқорлық жасауы керек, ал білім алушы осы көрнекі ақпаратты талдауды үйренуі керек. Когнитивтік-бейнелік тәсілдің бір артықшылығы – оқушылардың жеке ерекшеліктерін және, атап айтқанда, мидың сол және оң жарты шарларының жұмыс ерекшеліктерін ескереді. Математиканы оқыту тәжірибесінде церебральды жарты шарлардың функционалдық асимметриясын есепке алу бүгінгі күні бұрынғыдан да өзекті бола түсуде. Білім алушылардың танымдық мүмкіншілігін жетілдіру мәселесін шешу үшін математикалық, психология, педагогикалық жалпы тәсілдермен қатар, қазіргі заманғы жетістіктерді ескере отырып, бейнелік ойлауын қалыптастыру мен дамытудың жалпы теориясын жасауды, оқу іс-әрекетін қазіргі кезде қабылданғаннан кеңірек теориялық негізде жобалауды, әдістемелік құралды қажет етеді. Осыған орай математиканы оқытудың әзірленген әдістемесіне арналған есептер оқу процесін көрнекі оқыту ортасында ұйымдастыруды көздейді, онда мұғалім мазмұнды дайын түрде ұсынбайды, тек оқушылардың ақыл-ой және сөз әрекетін реттейді, сол арқылы жаңа идеялар мен тұжырымдамалар дербес сипаттауға бағыттайды.

Түйін сөздер: Когнитивтілік (танымдық) қабілет, ақыл-ой қабілеттері, визуалды, көрнекілік, тренажер.

THE EFFICIENCY OF USING THE COGNITIVE METHOD IN INCREASING MATHEMATICAL LITERACY OF STUDENTS

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Abstract

The article presents a number of specific methodological principles that can be introduced into the system of cognitive education in mathematics lessons. With the help of these principles, the didactic functions of modeling are widely used, individual cognitive abilities are taken into account, the main components of the mental sphere of the student's personality (thinking, memory, attention, motivation) are taken into account.

The purpose of this article is to develop the mathematical cognitive abilities of students in the educational process on the basis of theoretical justification and improvement of skills from a practical point of view.

The implementation of the cognitive-visual approach in the process of teaching mathematics to students makes it possible to create a visual learning environment, a set of learning conditions in which the main attention is paid to the use of the student's visual thinking reserves. These conditions presuppose the presence of both traditional visual aids and special means and methods to activate visual work. The cognitive-visual approach is aimed at educating "mathematical vision"; the teacher must constantly take care of the organization of visual information, and the student must learn to analyze this visual information. One of the advantages of the cognitive-visual approach is that it takes into account the individual characteristics of students and, in particular, the peculiarities of the work of the left and right hemispheres of the brain. Taking into account the functional asymmetry of the cerebral hemispheres in the practice of teaching mathematics is becoming increasingly relevant today. To solve the problem of improving the cognitive abilities of students, in addition to general mathematical, psychological and pedagogical approaches, taking into account modern achievements, it is necessary to create a general theory of the formation and development of figurative thinking, to develop educational activities on a broader theoretical basis than currently accepted, and a methodological tool. In this regard, reports on the developed methodology for teaching mathematics provide for the organization of the learning process in a visual learning environment, where the teacher does not present the content in finished form, but only regulates the mental and speech activity of students. students, thereby guiding an independent description of new ideas and concepts.

Keywords: Cognitive ability, mental abilities, visibility, visualization, simulator.

ЭФФЕКТИВНОСТЬ ИСПОЛЬЗОВАНИЯ КОГНИТИВНОГО МЕТОДА В ПОВЫШЕНИИ МАТЕМАТИЧЕСКОЙ ГРАМОТНОСТИ ОБУЧАЮЩИХСЯ

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Аннотация

В статье представлен ряд конкретных методических принципов, которые можно внедрить в систему познавательного обучения на уроках математики. С помощью этих принципов широко используются дидактические функции моделирования, учитываются индивидуальные познавательные способности, учитываются основные компоненты психической сферы личности учащегося (мышление, память, внимание, мотивация).

Целью данной статьи является развитие математических познавательных способностей учащихся в учебном процессе на основе теоретического обоснования и совершенствования навыков с практической точки зрения.

Реализация когнитивно-наглядного подхода в процессе обучения студентов математике позволяет создать наглядную среду обучения, совокупность условий обучения, в которых основное

внимание уделяется использованию резервов наглядного мышления студента. Эти условия предполагают наличие как традиционных наглядных пособий, так и специальных средств и методов, позволяющих активизировать зрительную работу. Когнитивно-зрительный подход направлен на воспитание «математического зрения»; учитель должен постоянно заботиться об организации наглядной информации, а учащийся должен научиться анализировать эту зрительную информацию. Одним из преимуществ когнитивно-зрительного подхода является то, что он учитывает индивидуальные особенности учащихся и, в частности, особенности работы левого и правого полушарий головного мозга. Учет функциональной асимметрии полушарий головного мозга в практике преподавания математики становится сегодня все более актуальным. Для решения задачи совершенствования познавательных способностей учащихся, помимо общематематических, психолого-педагогических подходов с учетом современных достижений, необходимо создать общую теорию формирования и развития образного мышления, разработать учебные деятельность на более широкой теоретической основе, чем принято в настоящее время, и методологический инструмент. В связи с этим отчеты по разработанной методике обучения математике предусматривают организацию процесса обучения в наглядной учебной среде, где преподаватель не представляет содержание в готовом виде, а лишь регулирует мыслительную и речевую деятельность учащихся. студентов, тем самым направляя самостоятельное описание новых идей и понятий.

Ключевые слова: Когнитивная (познавательная) способность, умственные способности, наглядность, визуализация, тренажер.

Basic provisions

The lack of cognitive strategies is an important contributing factor to students' inability to complete math tasks. The cognitive quality of the learner is one of the main concerns in the data processing tradition, where human learning is seen as a continuous data processing activity. Cognitive strategies are used in any educational process, provide students with the opportunity to facilitate learning, systematize and retain knowledge and skills, and help them use them in the future.

Thinking is a necessary component of learning. It provides the processing of educational information, the solution of educational problems, understanding. One of the important types of thinking from the point of view of learning is operational thinking - generalization, comparison, analysis, synthesis, abstract thinking, classification, categorization, etc. b. When solving learning problems, different learning activities involve different mental operations. Successful training and development are impossible without the formation of these operations. If the student has the necessary level of formation of the necessary types of thinking and mastering the models, cognitive activity in the aspect of learning and thinking will be effective.

Introduction

The actual problem of preparing a subject teacher: to form professional thinking, its important feature is the ability to connect the acquired knowledge with personal experience and apply them in practical activities. However, all traditional technologies of psychological and pedagogical preparation cannot effectively solve this problem. The process of assimilation of psychological-pedagogical concepts is usually structured as follows: teachers and authors of textbooks and teaching aids provide the material "ready-made" and recommend memorization [1]. This leads to the declarative acquisition of pedagogical knowledge by many students and its formal nature in the future. It leads to misconceptions, negative stereotypes and mistakes, insufficient thinking schemes (simplification, absolutization, imitation) are formed. At the same time, the analysis of the effectiveness of the modern pedagogical practice of the educational process showed that this trend is connected with the incomplete formation of the educational and cognitive skills of the students, insufficient development of cognitive abilities, insufficient preparation for the relevant educational activities, and the lack of provision of the necessary didactic tools for the stages of the educational activities [2, 3].

In connection with this issue, in recent years, in pedagogy, there has been a clear tendency to revise the views on educational technologies used in the learning process and to re-evaluate the requirements for the search for new forms, methods and tools of learning in the learning process, to search for new forms, methods and tools of learning [4, 5]. For a long time, the main results of teaching mathematics were considered to be knowledge of a large amount of theoretical material, skills in solving various mathematical problems. However, it is now known that students face significant difficulties when transferring the acquired knowledge to non-standard situations, and sometimes they cannot use ready-made schemes and algorithms to get out of difficult situations. The discrepancy between knowing a large body of educational information and being able to apply it in non-standard situations reflects the failure of the subject-oriented education paradigm.

Pedagogical experience shows that nowadays the contradictions between reproductive and developmental methods of teaching have become permanent and led to the need to search for and implement a new approach to teaching methods and technologies. Analysis of school experience shows that the current system of teaching mathematics is based on the use of abstract-theoretical thinking, which mainly does not correspond to the thinking characteristics of a significant part of students. In this case, the scope and effectiveness of the higher education process is limited by traditional teaching methods, the abstract content of the educational material in mathematics textbooks, and the lack of reliance on the visual component of mental activity[6].

One of the main reasons for cognitive difficulties in students is the functional limitation of the human brain, which experiences difficulties in using traditional teaching methods, for example, the oral method of information transmission, that is, the function is carried out based on the work of the second signal transmission system of the left hemisphere, and the rich opportunities of the right hemisphere are ignored. remains. As a rule, significant cognitive difficulties and low cognitive activity in students are caused by misunderstanding of the material studied in mathematics classes, difficulties in remembering a large amount of information, lack of formation of instrumental and technological methods of information processing, which is associated with insufficient development of their cognitive abilities [7].

Cognitive or cognitive abilities are cognitive processes of a person: attention, memory, thinking, imagination, which allow to receive, select, collect, process, create, recover information and turn it into knowledge and experience. To solve this problem, it is necessary to form thinking schemes that will become the basis of professional pedagogical thinking in the process of training future teachers at the university. They should be tested in the process of post-graduate training and professional development [8]. The importance of such schemes is based on the fact that an important aspect of the teacher's activity is the formation of the cognitive experience of students. Here, the quality of teaching often depends on the ability of teachers to form cognitive patterns of knowledge acquisition in pupils and students.

Today in psychology and pedagogy there is no single definition of the concept of “cognitive abilities”. However, the analysis of psychological and pedagogical literature made it possible to identify the three most common ways to determine them: 1. Cognitive abilities are individual psychological abilities of attention, feelings, perception, memory, imagination, thought processes that distinguish one person from another and are manifested in full knowledge of the features of the surrounding world. In this approach, "cognitive abilities" and "cognitive abilities." concepts are synonymous. 2. Cognitive abilities are a system of representations that includes properties, relationships and comprehensive connections between objects and subjects of activity in the human mind.. This system is the basis of the mechanism of thinking processes such as analysis, synthesis, abstraction and generalization. In this approach, the concepts of "cognitive abilities" and "mental abilities" are synonymous. 3. Cognitive abilities are mind, intellectual abilities. Intelligence is the ability to know the world and solve problems, it determines the success of any activity and is the basis of other abilities [9]. In this approach, the concepts of "cognitive abilities" and "intellectual abilities" are synonymous.

Well-known mathematicians V.I. Arnold, M.B. Volovich, B.V. Gnedenko, V.A. Dalinger, G.W. Dorofeev, A.N. Kolmogorov, V.A. Krutetskyi etc. noted that mathematical knowledge is of great importance in the development of students' cognitive abilities. Mathematics contributes to the development of thinking, memory, attention, and also forms the algorithmic, calculation and general mathematical culture of students. Thus, mathematical and logical formalism is directly, directly connected only with internal (symbolic) mental representations, left hemisphere symbolic (logical-verbal) thinking [10].

American neurologist Roger Sperry's discovery of the functional asymmetry of the brain indicated the need to re-evaluate the role of visual thinking in the process of teaching mathematics. According to modern ideas, interpolar asymmetry is a difference in the activity of the hemispheres of the brain in the principles of organizing contextual communication between information elements such as words and images. Mainly, the functional systems of the left hemisphere respond to the logical-verbal, abstract processing of information, and the spatial - visual, right hemisphere [11]. The advantage of thinking with visual images compared to the auditory image is that it "allows to distinguish many aspects in the image of the model at the same time, to understand any complex problem at once. In the visual image, it is possible to establish various theoretical connections and dependencies (spatial, structural, functional, temporal)" [12].

Thinking with visual images, or "visual" thinking, is considered a complex process of transforming visual information. This is provided by perceptual actions, which allows to create pictures according to the original scenes, to work with them, to solve the problems of comparison, identification, clarification,

transformation of pictures [13]. Analysis of the school experience of trained mathematicians shows that the main focus is on logical thinking, that is, on the work of the left hemisphere of the brain: According to the research of psychologists, a person receives 80% of information through the visual channel [11].

Taking these factors into account, educational strategies should first of all invest in learning technologies that implement the capabilities of the main, visual-visual component of mental activity, based on the genetic basis of this type of thinking.

One of the main requirements for creating a visual or visual learning environment is to take into account the capabilities and individual characteristics of the student when receiving educational information. In this regard, the content of the visual educational environment should include the visual objects of the surrounding nature and cultural-disciplinary environment, which are well known to students. Such a way of forming visual information provides a basic guide and aims to justify and understand the new concepts introduced by students, contributes to the growth of motivational activity of students in the learning process. L. M. Friedman: "Visibility is an indicator of the simplicity and understanding of the mental image that is formed as a result of human perception, memory, thinking and imagination processes" [14].

Educational practice shows that one of the promising areas in the process of teaching mathematics is the use of a cognitive-visual (visual-cognitive) approach based on the optimal use of visual thinking reserves of students. The use of this technology allows visualization of a wide range of educational information, contributes to the wide and targeted use of visualization in the educational process, and provides access to knowledge. In addition, "one of the advantages of the cognitive-visual approach is that it takes into account the individual characteristics of students, in particular, the characteristics of the left and right hemispheres of the brain," says V.A. Dallinger [8]. Working with images in the process of cognitive activity allows creating a unique form of interaction between the subject and the object (sometimes even virtual), as a result of which it leads to the creation of a vivid and understandable image of the object. Information in visual images is clear and has a certain meaning.

Considering the problem of development of cognitive abilities in primary school, we relied on V.D.Shadrikov's definition of cognitive abilities: "Cognitive abilities are individual features of attention, feeling, perception, memory, imagination, thinking processes that distinguish one person from another and are manifested in successful recognition of the surrounding world [15]". Well-known mathematicians V.A. Dallinger [8], V.I. Arnold, M.B. Volovich, B.V. Gnedenko, G.V. Dorofeev, O.A.Kondratenko, V.A. Krutetsky [9] and others noted that mathematical knowledge is of great importance in the development of students' cognitive abilities. Mathematics contributes to the development of thinking, memory, attention, and also forms the algorithmic, calculation and general mathematical culture of students. P.Ya. Halperin's the indicative basis of actions[3], Consideration of ideas about the indicative basis of Halperin's actions [3], N. F. Talyzina’s management of the process of knowledge acquisition[16], V.E. Steinberg’s "semantic fractals" represented by the logical-semantic knowledge models [17], about projective visualization, in particular N. N. Manko's the use of "educational activity navigators" [18] made it possible to conclude that all the didactic potential of verbal-graphic systemizers were not fulfilled the visual problems in the process of teaching mathematics to elementary school learners[9].

Psychological and pedagogical literature analysis by many scientists - E.V. Ilyenkov (individual tips on elements, creating whole images based on tendencies), N. N. Manko (logical-semantic models, navigators of learning-cognitive activity) showed that he created visual aids for learning with convenient forms of information presentation. Yu.S. Mezhenko (structural-logical schemes), Soldatova E.L. [19] (sign-symbolic determination of knowledge), M.A. Choshanov (modular approach to education) [20], V.E. Shteinberg [17] (multidimensional systems of coordinates), as well as innovative teachers E.N. Ilyin [21], O.O. Knyazeva [22] and others developed many tools of cognitive visualization allow their rational use in the educational process, in particular in elementary school. At the same time, it should be taken into account that the learner's activity from the point of view of system-activity is manifested in the subjective position implemented in such forms of education, which allows to find, receive, transform, understand and integrate information into his educational system. This shows the need for education using modern technologies in the learning process. In addition, special methods of visualizing information that take into account the cognitive abilities, memory and thinking mechanisms of students are used in mathematics lessons at this school.

Materials and methods

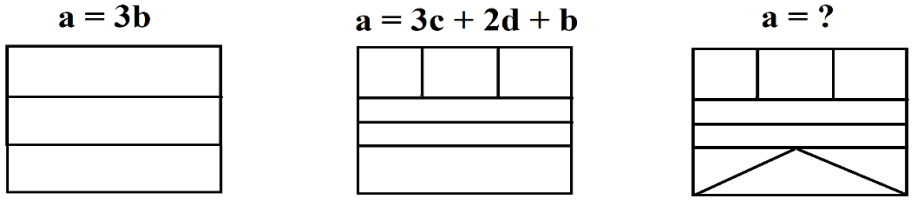
To solve the problem of developing cognitive abilities of students, we considered creating mathematics based on the cognitive visual (or visual-cognitive) method. The cognitive-visual method is aimed at deep and comprehensive development of "mathematical attitude" and knowledge of students. To implement this

function, both traditional visual aids and special tools and methods are used to activate the work of the organs of vision. This method B. A. Dallinger [8], N. Kondratenko O.A. [9], Shadrikov V.D. [15], D. A. Kartezhnikov, Knyazeva O.O. [22] and others defined in their works.

M. I. Bashmakov [13] proposed the following types of visual tasks: 1. "Look and find" - in the task, the data is fully shown in the picture, there is no detailed description, and links and hints are located in the picture and in the question. 2. "Series" - the task consists of a certain set of formulas, text or picture that describe a certain concept in a consistent manner, depicting the elements, connections, and properties included in its composition. The questions in the problem are structured from simple to complex. 3. "Trainer" - when solving a problem, certain skills of the learner are restored or fixed. All the questions in the problem focus on one concept, the property of concept or operation with this concept. 4. "Correct answer" - there is no question in this task; the question in the text is "calculate", "solve and find the answer", etc. determined by the instructions. "Test" is a short statement of the problem, the task has several options for answering the questions. 6. "Look and identify" ("look and write") - these tasks are created based on the general image of the object. The object is asked a series of questions that determine its properties and resolution rules, as well as a set of special instructions in a given situation. 7. "Prove by looking at the picture that ..." is the task of proving a conclusion or deriving a formula. All the necessary tips are in the picture (formula or text). Each type of visual tasks affects the development of certain components of cognitive abilities.

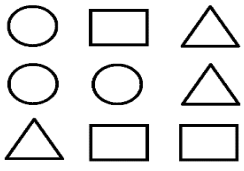
Result

In order to develop the cognitive ability of learners, according to M.I. Bashmakov's "Look and find" task, the problems shown in detail in the picture were given. In Figure 1, for the purpose of developing cognitive ability, an expression problem equal to a question mark was given in three versions.



Answer: a = 3c + 2d + 2e + f

Task 2. If the numbers are represented by figures, then which answer corresponds to the picture below?



A)	B)	C)	D)	E)
328	591	257	681	368
327	599	227	661	336
827	951	755	811	286

Correct answer: C

Task 3. (a + b + c + d) find the square of the expression өрнегінің квадратын табыңыз

Answer:

	a	b	c	d
d	ad	bd	dc	d^2
c	ac	bc	c^2	dc
b	ab	b^2	bc	bd
a	a^2	ab	ac	ad

Read the information in the picture and get the formula:
$(a+b+c+d)^2 = a^2 + b^2 + c^2 + d^2 + 2ab + 2ac + 2ad + 2bc + 2bd + 2cd$

At the same time, working with the problem of development of cognitive abilities of schoolchildren, we needed to get the primary material that would be the basis for dividing students into different groups according to the level of development of cognitive abilities. Components of students' cognitive abilities such as visual memory, attention, thinking, and perception were diagnosed. 8th grade students participated in the study. Diagnostic results were as follows: only 37% of students with low cognitive ability, 49% of students with an average level of cognitive development, and only 14% of students with high cognitive ability showed. Based on these requirements, we recommend the use of various verbal and graphic systematizers - spatial constructions that require the student to carefully determine the structure of the taught material in the elementary school mathematics lesson. It is noted that in the learning process of various visual aids, the visual image as a visualization tool and product ensures the transfer of information from the internal action plan to the external and vice versa, plays an important role in the visual activity. illustrative, indicative, cognitive, mnemonic, etc. necessary to perform the learning activity. cognitive process that performs functions. Another important means of implementing the cognitive-visual approach in the educational process is the use of a set of visual tasks in mathematics lessons. The main purpose of visual tasks is to ensure the implementation of visual translation on the basis of establishing a connection between text, drawing and formula, to form the abilities of "thinking about the word" and "looking at the video". Cognitive ability is unique to each person. Its development is the duty of every teacher. Therefore, it is necessary not only to provide students with ready-made information, facts, laws, normative legal acts, but also to provide them with educational materials to confirm their knowledge. In addition, teaching will be effective only if there is a collective relationship and mutual respect between the teacher and the student.

Dicussion

In the modern information society, educational institutions must provide: solving unknown problems, developing knowledge, adapting to a quick review of a large amount of information, making the right decision in conditions of uncertainty. Experience has shown that such skills can be formed with frequent use of cognitive tasks in the classroom. Famous mathematicians V.A. Dalinger [8], V.I. Arnold, M.B. Volovich, B.V. Gnedenko, G.V. Dorofeev, Kondratenko O.A., Krutetsky V.A. [9] etc. b. it was noted that mathematical knowledge is of great importance in the development of cognitive abilities of students. Mathematics contributes to the development of thinking, memory, attention, and also forms the algorithmic, counting and general mathematical culture of students. P.Ya. On the indicative basis of Galperin's actions [3], N.F. Management of the process of acquiring knowledge by Talyzina [16], V.E. About "semantic fractals" represented by Steinberg's logical-semantic models of knowledge [17] [16; 17], N.N. Consideration of Manko's ideas [18] on projective visualization, in particular on the use of "navigators of educational-cognitive action" [9], made it possible to draw conclusions about the didactic possibilities of verbal-graphic systematizers.

According to B. Bloom's taxonomy of pedagogical goals [23], the cognitive processes necessary for educational activity can be represented as separate levels, which differ from each other in the complexity of performing mental activity. For example, tasks that require analysis or evaluation are associated with a large cognitive load, and high-order cognitive processes are involved in their performance. And when performing tasks that require the use of a learned action algorithm, for example, to solve an equation with two variables, low-order cognitive processes (low-level thinking skills) are involved. Higher-order cognitive processes include analysis, evaluation, and creation, while lower-order cognitive processes include memory, understanding, and application.

The effectiveness of individual methods and techniques for improving cognitive processes to a high standard is widely discussed in the literature. However, the question of how the high frequency of use of such methods in the education system affects the assimilation of subject knowledge remains open.

Conclusions and recommendations

Improving basic cognitive skills goes a long way towards improving math ability. The potential of this approach is particularly attractive given the failure of traditional train-and-kill approaches and the lack of other consistently effective and scalable interventions. Moreover, the presence of developmental delays should not become a barrier to academic progress when short-term intervention is available. By developing basic cognitive skills that allow the brain to process more information with more automation, the initial results demonstrate that mathematical ability and understanding can be developed to a much higher level in a relatively short period of time.

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EDUCATIONAL RESOURCE IN IMPROVING THE QUALITY OF EDUCATION OF COLLEGE STUDENTS – THE USE OF IN INFORMATION RESOURCES

Abstract

Nowadays, the problem of effective selection and the problem of using information resources are relevant by college students in fulfilling didactic requirements in the content of training in their future professions. The research is aimed at studying the students' opinions on whether they, as future primary school teachers, can use information resources correctly. The purpose of the article is to identify the circumstances that affect the possibilities of using information resources by students of the Republic of Kazakhstan. Anchoring was performed on 132 students of a teacher training college. The results of the study reveal incomplete knowledge of students about the use of information resources, insufficient information literacy in the preparation of didactic materials, and other reasons. The article also provides recommendations for preventing these shortcomings in the work of future teachers.

Mastering the use of learning resources - allows you to achieve practical results, develops language competence, combines not only training, but also the ability to apply new knowledge in life. It considers the issues of training students of the pedagogical college - future primary school teachers with high competence, who are able to selectively and methodically use educational resources, and work creatively.

Key words: learning resources, information resources, information technology capabilities, college students.

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КОЛЛЕДЖ СТУДЕНТТЕРІНІҢ БІЛІМ САПАСЫН АРТТЫРУДАҒЫ ОҚЫТУ РЕСУРСЫ – АҚПАРАТТЫҚ РЕСУРСТАРДЫҢ ҚОЛДАНЫЛУЫ

Аңдатпа

Бүгінгі таңда колледж білім алушыларының болашақ кәсіби мамандықтарында ақпараттық ресурстарды оқу мазмұнының дидактикалық талаптарын атқаруда тиімді іріктеуі, қолдануы өзекті мәселе. Зерттеу болашақ бастуыш сынып мұғалімдері ақпараттық ресурстарды дұрыс қолдана ала ма деген деген пікірді білуге бағытталады. Мақала ҚР студенттерінің ақпараттық ресурстарды қолдану мүмкіндіктеріне ықпал ететін жайттарды анықтау мақсатында педагогикалық колледждің 132 студентінен сауалнама алынады. Зерттеу нәтижесі бойынша студенттердің ақпараттық ресурстарды қолдануды толық білмейтіндігі, дидактикалық материалдар дайындауға ақпараттық