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IMPROVING INDEPENDENT LEARNING OPPORTUNITIES OF FUTURE MATHEMATICS STUDENTS IN A DIGITAL EDUCATIONAL ENVIRONMENT

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Abstract.*This article highlights the content of using digital technologies in the process of increasing the opportunities for future mathematics teachers to acquire independent knowledge in a credit-module environment, and also determines the level of effectiveness of the results obtained based on experiments.*

Keywords: *talent, motivation, innovation, creativity, critical thinking, problem solving. student work.*

RAQAMLI TA'LIM MUHITDA KELAJAKDAGI MATEMATIKA O'QUVCHILARINING MUSTAQIL O'QITISh IMKONIYATLARINI TASHKILLASH.

Annotatsiya. *Ushbu maqolada bo'lajak matematika o'qituvchilarining raqamli ta'lim sharoitida mustaqil bilim olish imkoniyatlarini oshirish jarayonida raqamli texnologiyalardan foydalanish mazmuni yoritilgan, shuningdek, tajribalar asosida olingan natijalarning samaradorlik darajasi aniqlanadi.*

Kalit so'zlar: *iste'dod, motivatsiya, innovatsiya, ijodkorlik, tanqidiy fikrlash, muammolarni hal qilishga o'rgatish. talaba ishi.*

УЛУЧШЕНИЕ ВОЗМОЖНОСТЕЙ САМОСТОЯТЕЛЬНОГО ОБУЧЕНИЯ БУДУЩИХ СТУДЕНТОВ-МАТЕМАТИКОВ В ЦИФРОВОЙ ОБРАЗОВАТЕЛЬНОЙ СРЕДЕ

Аннотация. *В данной статье освещается содержание использования цифровых технологий в процессе повышения потенциала будущих учителей математики к самостоятельному обучению в условиях цифрового образования, а также определяется уровень эффективности полученных на основе экспериментов результатов.*

Ключевые слова: *талант, мотивация, инновации, креативность, критическое мышление, обучение решению проблем. студенческая работа.*

INTRODUCTION

TodayIn recent years, our country has been working on the transition to a credit-modular education system, integrating the educational process with global standards, making the educational process more open and understandable for students, and developing the foundations of personal and professional standards for organizing independent education for students.

Changing the requirements for the education system involves changing approaches to the organization and management of student activities. Today, a student preparing for future professional activity must be flexible and mobile, quickly respond to constant changes in scientific, practical and research activities. Modern realities pose new problems and tasks for everyone, including future teachers, and they must respond quickly, and for this you need to think creatively, accept new experiences and find non-standard solutions. All this is facilitated by activating the creative component of the personality, developing the ability to work independently with educational literature.

Thus, the problem being developed is very relevant.

Analysis of publications on the topic of the study. Analysis and study of methodological and theoretical rules that reveal the essence of the process of managing students' independent work, reflected in the publications of teachers, psychologists and methodologists of near and far abroad.Credit module of education system security training process to organize Generalizations: M.G. Barakaev, V. U'rinov, N. Suyunov, B.Sh. Usmonov, S.V. Mamatkulov, N.O. Zhu'rauev, researched in scientific works.Thus, in the works of foreign scientists, for example, Slastenin VA. , Asanalieva MK, Choshanova M., Khairullina GT, Polat ES, Bespalko VP, Babansky Yu.K., Kuzmina NV, the laws and principles of the process of organizing and managing independent activity of students and its components are summarized. Based on this knowledge, we made changes to the process of teaching students natural and mathematical sciences in terms of determining the content of

independent work.

METHODOLOGICAL FOUNDATIONS OF THE STUDY

The consideration of the problem posed in our study was facilitated by theoretical analysis of sources, organization of targeted observation, practical work, and the use of modeling.

The theoretical and methodological basis of this study is the work of VP Bespalko, NV Kuzmina on the systematic professional training of future teachers, on the basis of which we decided on integrated activity-based and practice-oriented approaches. The use of these approaches in our study allowed us to consider the problem of managing students' independent work in the context of credit-modular education as a process characterized by a certain structure, integrity, in which all components are interconnected. In this process, students participated in specially organized educational, cognitive and practical activities related to the study of the courses "Updated Fundamentals of Mathematical Education for Junior High School Students", "Updated Fundamentals of Natural Science Education for Junior High School Students", "Fundamentals of Art and Artistic Education". work". In the process of studying subjects, students were constantly involved in practical activities, thus the authors adopted a practice-oriented approach - participation in games, solving practical tasks, analyzing situations, and conducting web quests.

The main part."Independent work involves the maximum cognitive activity of the student, the development of the intellectual, creative, creative and communicative abilities of the individual. It is in independent work that the student's internal motivation, ability and readiness for research and research activities, analysis and synthesis of scientific material, concentration, independence, self-organization can be manifested" [9]. Also, in the process of independent work, skills in working with information are honed. For independent work, students are offered large-scale text materials, that is, publications by scientists, methodologists and teachers on the topic of the module being studied. Students are offered the following types of work with these texts[10]:

Reading and dividing into meaningful chunks, highlighting key words.

Formulate questions for each semantic fragment.

Creating clusters or schemes,

To show the relationship or interdependence of the components of the material.

Work with students is organized in collaboration with text materials that continue the explanation of the theoretical material or supplement it. For this, we use various methods. Here we would like to introduce you to other exercises that are used in working with texts in seminar classes with students.

"Between the Boys" is aimed at developing communication skills of students, not limited to working with the text and participating in discussions. A group of students is divided into microgroups, studying a text that is quite large in size and preparing questions for discussion. In this case, each group member should have his own version of the task being performed. At the next stage of the work, each of the microgroup participants chooses a partner within this microgroup and the search for a common solution continues, which should express the common opinion of these two participants. After that, the four pairs change and the work continues in the same direction. Thus, the use of this strategy gives each group member the opportunity to learn to listen to someone else's opinion, offer their own understanding of the problem and defend the solution found.

In our practice, we often use the "Mailbox" method. Students are offered to formulate questions of various nature: analytical, evaluative, creative. Therefore, when working with the text, students should not limit themselves to simply formulating questions based on the text, but should formulate a series of questions of various nature. Students address questions to someone in a special group or to several classmates. All completed questions are placed in a box. The teacher formulates a question and passes it to the student to whom he is directed. The person who receives such a "Letter" must answer it. In this case, the work can be done orally and in writing. At the end of the lesson, there is always a conversation with students in the format of answering questions: what tasks caused difficulties and why? What questions were you able to answer right away? What helped you answer the questions? Which answers did you like? Why?

The "Tree of Wisdom" exercise is very similar to the described strategy. However, all the questions are attached to a board with a picture of a tree. Students

go up to the board one by one, "tear off" the note and answer the question as loudly as possible. The rest listen carefully and evaluate both the question and the answer. But, of course, before answering the questions, students read the text, compose and reread the text to answer their questions, first of all, evaluate the quality of their questions.

This type of textual engagement encourages students to formulate open-ended questions, analytical and evaluative questions, reconstruction questions, and explanatory questions. This, in turn, encourages students to engage with the words in the text, to look for relationships between the text's components, and to read the text.

Often, when working with texts, we rely on learning styles. At the beginning of the school year, we conduct a small test to determine which learning style students belong to. It was found that most students are people with a concrete -consistent learning style. This style is characterized by clarity, increased attention to detail, and practical thinking. Concrete-dispersed studentslearning style: able to work independently and in small groups, likes to experiment. The abstract diffuse learning style can be described by words such as developed emotions, imagination and flexibility of thinking. The abstract sequential learning style says that the student has the ability to encode, abstract and generalize verbal and written symbols [9].

It is impossible to say that one method is better or worse than another. If the learning process is structured correctly, all students will master the material. Therefore, when working with texts, we offer students tasks that correspond to their learning style. Sample tasks from the subject "Methodology of teaching the updated content of natural science"

These assignments are given to specific students, according to their learning style. This helps students to approach the study of text material seriously and delve deeper into the study of the subject, which in turn increases information and communication competence, reduces resistance in the learning process, and gives students strength and confidence.

We also create questions with students based on Bloom's taxonomy, i.e. questions related to knowledge, understanding, application, etc.

To assess the level and quality of students' mastery of the learning material, we use criteria that are determined by the learning objective; representing the types of activities to be mastered;

Descriptors describing a student's achievement on each criterion allow the student to independently evaluate their own work.

Updating the content of education, as one of the important components of the training of a future specialist, forms the ideology of updating the organization and management of independent work of students, which requires the development of innovative approaches to its design. Thus, the modular rating technology of the organization is used, in which each module is an integral, complete stage of educational activity. When working with the educational element of the module, students have the opportunity to study the educational material, perform a system of creative tasks that activate their activities and arouse interest in learning. At the same time, it is very important to test the developing self-educational independence and improve the quality of students' knowledge.

CONCLUSION

Experience with a variety of textual materials, the development and use of learning materials that include not only the text but also a study guide, allows students to work individually. The use of a rating system allows you to monitor the extent to which students have mastered the learning elements of the module and, therefore, to manage their independent work. The following descriptors can be used to assess it:

- independent and creative development of the educational text;
- level of oral and written speech;
- level of theoretical preparation in the subjects being studied;
- pedagogical communication style and quality;
- ability to reflect on pedagogical activity.

Timely and high-quality testing of independent work teaches students about science, creates the need to search for new information resources, regularly complete assignments, and thereby determines the solidity of knowledge. At the same time, it develops in the future specialist the desire to develop innovative ideas and apply them

in his practice in accordance with life and professional situations in order to make and implement the right decisions.

Thus, at the stage of preparing students for professional activity, the expected professional qualities are to be effective and creative in professional competence, and therefore self-management and self-realization. The structure of the personal characteristics of the future teacher clearly expresses the ability to organize, control, analyze and evaluate his activities in accordance with the motives that motivate him.

pedagogical consciousness, thinking and specific socio-pedagogical interests.

In general, there should be a common model for organizing and managing students' independent work, in which close creative cooperation between teachers and students is of paramount importance.

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