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PREPARATION OF STUDENTS ON MATHEMATICS BY NEW INNOVATIVE METHODS

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Annotation

In this work, mathematical education is provided through the use of modern, innovative approaches. Our main goal is providing mathematical education in a certain professional activity in modern society that can be used in understanding economic, market relations, political situation and in formation of cultural personality.

During the preparation of a young specialist, the teaching and learning of mathematical sciences involves continuous work, collaboration, cognitive, communicative, socially active, problem solving and self-decision.

There is a difference between traditional teaching methods and credit technology.

A qualified specialist should always be on the lookout, professional and spiritual growth of the current flow of information.

Key words: *education system, mathematics, innovative approaches, traditional teaching technology, credit technology, information and communication technologies, bio-nanotechnologies.*

The beginning of XXI century - the information and communication technologies, the time of bio-nanotechnology. One of the features of the social and economic development of the modern era can be called the automation and information technologies. This tendency results in permanent professions losing their properties and acquiring change and temporary characteristics. In this case, learning and learning strives to become the main skills of a specialist[1].

It could also be said that this stage is a time of mathematical era. Indeed, there is no industry without mathematics today. Mathematics is

used today in cosmonautics, which is considered to be the forerunner of world science, in solving problems in life: mathematical research in linguistic, biological mathematics, pedagogy and psychology is a clear sign of this. So now all developed countries pay great attention to mathematics.

The relevance of mathematical education in our homeland is closely linked to the program of the state program of industrial-innovative development, initiated by the President of the Republic of Kazakhstan. The main requirement of the society is the prospects of the future specialist to acquire knowledge and skills, personal and professional qualifications in accordance with today's social educational space. At the same time, the issue of the first stages of implementation of the State Program of Education Development for 2011-2020 at the First Congress of Mathematical Teachers of the Republic of Kazakhstan was emphasized that the quality of education in Kazakhstan is directly related to the level of mathematical readiness of each student[2].

With regard to the mathematical teaching process in higher education institutions, it is very effective not only to accumulate knowledge from various fields of mathematics but also to focus on the development of their mathematical "culture". Of course, mathematical science has its own peculiarities. First, its isolation, secondly, its logical accuracy, mathematical conclusions; thirdly, the extent of its use. All this proves the high potential of its students to prepare a full-fledged society member.

Integrated credit technology training is being implemented to ensure international recognition of national education curricula, mobility of students and teachers in educational institutions, as well as to improve the quality of education and continuity of all levels. The credit system is a technology that allows the student to adapt his learning to his or her own needs independently, on a creative basis. In addition, the main feature of this system from the previous traditional system is[3]:

- turning the student into the mainstream of the education system;
- increase of self-study;
- transferring the role of a teacher from the "trainer" to the "organizer";
- increase the role of students in managing university;
- expansion of mobility of students;
- increasing students' independent self-work

In the process of learning, students will be able to develop psychological and pedagogical basics of their implementation, use interactive methods in the learning process, turn the learning process into a dynamic and fun process, and equitable relationships between teachers and students, in order to facilitate the acquisition of skills, You need to be able to select and apply the methods and methods of installation. Each student should be provided with the training materials from the teacher. The educational-methodical complex of the discipline: the

program of work, the collection of lectures, methodical instructions on performance of practical and independent work, intermediate and final test questions, classroom and self-study assignments should be given to each student. Creating a clear-cut program of size and nature in accordance with a typical curriculum allows students to work intensively.

Mathematics has an invaluable role in developing students' creativity, skills and abilities. The student will be able to think independently when preparing theoretical material, and making calculations. Release of mathematical problems leads to the formation of behavior, in particular, helps to overcome difficulties, achieve goals, come to a certain system, master the basic (informational and social) skills, activate the learning process, and apply different mechanisms to evaluate the learning process. The essence of the report is not to find the answer, but to improve the technique of targeted use of the student in the process of reporting (formulas knowledge, methodology of reporting, elaboration of reporting algorithm, development of creative abilities). The creative elements during the initial stage of the reports are the technique at the end of the reporting period. Formation of skills and competence in dealing with a new concept is the most important responsibility in studying the topic. One student quickly and easily generates a new type of task, the other two are slow, and the other do not even understand, so the division of students into groups does not depend on the quality of their personality, but on the complexity of the task.

In traditional teaching, the main goal is "result", the teacher directs his / her efforts to "teach" and tries to lead the student to the final result in the shortest possible way. Here, the effectiveness of learning depends primarily on information: the learning process "sends" information to students, which is limited to the provision of new data. In traditional education, the educational process is often understood by the student as being a "clean sheet" (or a hollow vessel inside), where the teacher is involved in filling it with the lesson. The student gains new knowledge only at the lesson, and after the lessons he or she gets busy with fixing it.

Interactive teaching replaces authoritarianism and dominance, the incomparable reputation of the educator, the monologue, and the expulsion from outside (democratic) communication, which are the basic ideas and principles of traditional teaching [4].

Taking into account business interests and co-operation, the interests and interests of learners, such relationships based on mutual understanding and co-operative reinforce their commitment to their knowledge by providing them with the ability to determine the scope of knowledge consciously and voluntarily, and to choose the forms and methods of learning. For this reason, interactive learning (teaching) must be followed by observing the following conditions:

- setting a pleasant psychological environment;

- create motivation (motivation, enthusiasm, aspiration) for students to acquire knowledge;
- successful orientation of learners of knowledge;
- understanding the process of knowledge acquisition as a communicative process and applying joint actions[5].

Interactive learning focuses on the process of learning the main focus, how to "learn" and "through what methods". The goal is to develop students' self-knowledge through interacting activities, in their search and development. Students are not prepared as a "blank sheet of paper" and they prepare their own ideas and comments on the subject, and then create a system of proofs, debates, listen to other opinions and take into account alternative approaches. In other words, the discipline forms the necessary skills for every person in life. After classes, the student develops that knowledge independently.

That's why interactive learning students should be prepared to do the following:

- cognitive, communicative, socially active;
- initiative,
- feedback;
- joint work;
- problem solving, decision making.

In interactive learning, learners are always active and self-centered, able to convey their thoughts, to prove their arguments, to debate, to listen to others, to respect and to think. There is no single correct answer in such lessons, as the main problem is not the finding of the right answer, but rather the self-study process, based on the student's personal experience.

Interactive learning is carried out in higher education institutions through the following activities:

- joint work (group, group, whole audience);
- individual and joint research;
- role and business games;
- debates;
- work with different sources of information (books, lectures, internet, documents, museums, etc.)
- creative works,
- Case Study,
- presentations,
- computer training programs,
- trainings,
- interview,
- questionnaire, etc.

Because interactive learning is a part of learning, it is important to emphasize the importance of collaborative teamwork: they are an effective tool for recognizing self and others, shaping their outlook, self-development, and understanding others' actions and their causes. Group work provides an active participation of all learners in the work. In this work, students use their communicative skills (listening, shared decision-making, conflict resolution) practically, and they themselves "play"[6].

Education should help each person to define his own world, define his values and principles. Through this, a person learns his inner world and learns how to manage it. Traditional education in the system of yesterday is explained by the level of its intellectual development, and today it is related to the individual

reflection of the person (his / her own personality of the surrounding, being studied, his / her values, reasons and consequences, meaning).

The purpose of general higher education in mathematical education is to have a well-known mathematical system of knowledge in the modern society that is capable of applying economic, market-oriented, new thinking, political climate, and cultural personality.

Education and learning in all the fields of education is a necessity for continuous work, laziness, perseverance and endurance, completeness of the beginning of the work, carefulness and purity, conclusions, conclusions, fairness and accuracy, morality, so that you can enjoy the results and find pleasure, vision and search for ways to reach new high altitudes and so on.

When developing creative thinking of students, self-employment, creative readiness is possible only on the basis of systematic reporting. Reporting is a key tool in solving students' logical thinking, imagining space, and developing their own abilities. Obligations to control students' knowledge, skills and abilities are often the responsibility of reporting. Formation of students' qualifications during the reporting process is one of the most difficult issues in the pedagogical problem.

Nowadays, students are not able to express their opinions because of the inadequacy of language abilities due to the fact that the results of the schools are tested. Theorems have not been proven. In higher education, the hour was also reduced because of the credit system. But there are ways to attract students intensively using the latest technology. Conducting workshop sessions through an interactive method of communication, dialogue and dialogue. The role of a teacher in an interactive lesson is to provide the listener with the ultimate goal of learning. Interactive methods are widely used in all educational institutions today. For example, creativity, work in pairs, work with small groups, aquarium, role-playing, debate and more [7].

A qualified specialist should always be on the lookout, professional and spiritual growth of the current flow of information. It should be based on the foundation of a future specialist in the university. So, today the main task facing the university is to bring up a highly educated, active citizen, qualified specialist, who has a specific opinion. It is important and complicated to develop the mind-set of young people, to increase their autonomy and freedom of expression, to increase their eagerness to learn, to apply it to new situations in their own experience, i.e to develop their skills[8].

The value of mathematics in general education, as well as its scientific theoretical research, is widely used in the scope of its practical applications. There is no doubt that mathematics is not only a means of growth of knowledge, but also a means of prosperity for all mankind because mathematics develops the logical thinking ability of all the professions.

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СТУДЕНТТЕРДІ ЖАҢА ИННОВАЦИЯЛЫҚ ӘДІСТЕР НЕГІЗІНДЕ МАТЕМАТИКАДАН ДАЙЫНДАУ

METHODS

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Түйін

Бұл жұмыста математикалық білім беруді заманауи тұрғыда, инновациялық тәсілдерді пайдалану арқылы оқыту қарастырылған. Біздің негізгі мақсатымыз – бүгінгі қоғамдағы кәсіби мамандығына қажет белгілі математикалық білім жүйесі бар, оны қолдана білетін, экономикалық,

нарықтық қатынасты түсінетін, саяси ахуалды, мәдениетті тұлғаны қалыптастыру.

Жас маман дайындау барысында математика ғылымына оқыту және оқып білудің өзі үздіксіз еңбек етуге, бірлесіп жұмыс жасауға, танымдық, коммуникативтік, әлеуметтік тұрғыдан белсенділік танытуға, проблеманы шешуге, өз бетінше шешім қабылдауға баулитындығы қарастырылған.

Дәстүрлі оқыту тәсілдері мен кредиттік оқыту технологиясы арасындағы айырмашылық келтірілген.

Сапалы маман қазіргі ақпарат ағымының көшінде үнемі өзі ізденіп, кәсіби және рухани өсу үстінде бола білуі қажет.

Кілттік сөздер: *білім жүйесі, математика, инновациялық тәсілдер, дәстүрлі оқыту технологиясы, кредиттік оқыту технологиясы, ақпараттық-коммуникациялық технологиялар, био-нанотехнологиялар.*

ПОДГОТОВКА СТУДЕНТОВ ПО МАТЕМАТИКЕ ПО НОВОЙ ИННОВАЦИОННОЙ МЕТОДИКЕ

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Аннотация

В работе рассматривается обеспечение математического образования при использовании современных инновационных подходов. Наша главная цель - создание известной математической системы знаний в современном обществе, которая может быть использована, понимая экономические, рыночные отношения, формируя политический климат и личность.

При подготовке молодого специалиста преподавание и изучение математических наук предполагает непрерывную работу, сотрудничество, познавательное, коммуникативное, социально активное, решение проблем и самоопределение.

Существует разница между традиционными методами обучения и кредитными технологиями.

Квалифицированный специалист всегда должен следить за профессиональным и духовным ростом текущего потока информации.

Ключевые слова: система образования, математика, инновационные подходы, традиционные технологии обучения, кредитные технологии, информационные и коммуникационные технологии, био-нанотехнологии.