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PRACTICAL –ORIENTED LEARNING ON SCHOOL PHYSICS ITS REALIZATION OF MAIN PURPOSES OF EDUCATION

To date, the quality of education in the eyes of the Kazakh education system there are problems of increasing competition, adapting to real life milestones, after all, a person makes the right decisions in society related to various life problems high professionalism and intellectual activity are required for admission life and service in accordance with the requirements of the time.

In this regard, the education of fifteen-year-olds in the country Kazakhstan PISA-2009 international for the first time, the study was conducted to determine the quality of education of 15-year-olds in order to obtain reliable information. For our country, this is control and valuation system of education for participation in the program a number of factors necessary for the reform of Kazakhstan's education the main reason was the integration of the system into the world educational space. Testing using the PISA methodology is common among schoolchildren it is fundamentally different from exams and tests. Research on this scale the level of assimilation of the school curriculum

Key words: *practical-oriented problems, reflection, PISA, natural science literacy.*

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БИЛИМ БЕРҮҮНҮН НЕГИЗГИ МАКСАТТАРЫН ИШКЕ АШЫРУУ ҮЧҮН МЕКТЕП ФИЗИКАСЫН ПРАКТИКАЛЫК БАГЫТТА ОКУТУУ

Бүгүнкү күндө казакстандык билим берүү системасынын алдында билим берүүнүн сапатын жогорулатуу, атаандаштыкка жөндөмдүүлүктү жогорулатуу, жашоонун чыныгы этаптарына көнүү маселелери турат, анткени коомдо адам ар кандай турмуштук көйгөйлөр менен байланышкан туура чечимдерди кабыл алууда, аларды чечүү үчүн заманбап талаптарга жооп берген шарттарда жогорку кесипкөйлүк жана интеллектуалдык ишмердүүлүк зарыл.

Ушуга байланыштуу, табигый-илимий циклдин дисциплиналары боюнча практикалык багыттагы көндүмдөрдү өздөштүрүү актуалдуу болуп турат. Ошондой эле Казакстан эл аралык PISA системасына катышып жатат, анда окуу иш-аракеттеринин практикалуулугу билимдин сапатын баалоодо негизги фактор болуп саналат. Биздин өлкө үчүн бул программага катышууга билим берүүнүн көзөмөлдүк-баалоо системасы, казакстандык билим берүүнү реформалоо үчүн зарыл болгон бир катар факторлор, системанын дүйнөлүк билим берүү мейкиндигине интеграцияланышы негизги себеп болду.

Методика боюнча тестилөө окуучуларга арналган экзамендерден жана тесттерден кескин айырмаланат. Бул мектеп программасын өздөштүрүү боюнча масштабдуу изилдөө болуп саналат, анын жүрүшүндө билим сапаты аныкталат.

Өзөктүү сөздөр: *практикалык багыттагы тапшырмалар, ой жүгүртүү, PISA, табигый-илимий циклдеги дисциплиналардын сабаттуулугу.*

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ПРАКТИКО–ОРИЕНТИРОВАННОЕ ОБУЧЕНИЕ ШКОЛЬНОЙ ФИЗИКЕ ДЛЯ РЕАЛИЗАЦИИ ОСНОВНЫХ ЦЕЛЕЙ ОБРАЗОВАНИЯ

На сегодняшний день перед казахстанской системой образования стоит задача повышения качества образования, проблемы повышения конкурентоспособности, адаптации к реальным жизненным этапам, ведь человек в обществе принимает правильные решения, связанные с различными жизненными проблемами для решения которых необходимы высокий профессионализм и интеллектуальная деятельность в условиях, отвечающих современным требованиям.

В связи с этим освоение практико-ориентированных навыков по дисциплинам естественно-научного цикла является актуальной. Также Казахстан участвует в международной системе PISA в которой практико-ориентированность учебной деятельности является основным фактором при оценивании качества знания. Для нашей страны это контрольно-оценочной системы образования на участие в программе ряд факторов, необходимых для реформирования казахстанского образования основной причиной стала интеграция системы в мировое образовательное пространство.

Тестирование по методике PISA предназначено школьникам и кардинально отличается от экзаменов и тестов. Это масштабное исследование - уровень освоения школьной программы, в ходе которой определяется качество знания.

Ключевые слова: *практико-ориентированные задания, рефлексия, PISA, грамотность дисциплин естественно научного цикла.*

The problem of evaluation and evaluation activity is one of the most urgent problems, both in pedagogical theory and in pedagogical practice. In various periods of society's life, the measurement of the quality of education and upbringing of schoolchildren, as well as the expression of the results of these measurements have always aroused the keen interest of teachers.

The assessment can be as diverse as possible, variable depending on the types and types of educational institutions, their specifics and orientation, the tasks of each of the educational stages. The main task of the assessment (and this is its main difference from the mark) is to determine the nature of students' personal efforts; to establish the depth and scope of individual knowledge; to help adjust the motivation of a pupil comparing himself with a certain standard of a pupils, the achievements of other pupils, himself some time ago.

At the same time, the need to determine the directions of increasing of the quality of education of school requires objective information about the state of education of the country in comparison with other countries of the world, obtained on the basis of tools reflecting global priorities in the field of education. The International program for the assessment of educational Achievements of PISA pupils is an example of scientific and pedagogical research, the main task of which is to analyze the real results obtained within the framework of the objective measurements, and the extraction of scientifically sound and constructive conclusions for educational policy from them [1-3].

PISA tests natural science literacy — the ability to use natural science knowledge to select in real life situations those problems that can be investigated and solved using scientific methods, to draw conclusions based on observations and experiments necessary to understand the surrounding world and the changes that human activity makes to it, as well as to make appropriate decisions.

One of the guiding principles of didactics from the first years of the existence of this science to the present is the principle of the connection of learning with life. In modern didactics, this principle is called the principle of practical orientation of pupils' training by practice-oriented learning.

Ya.A. Komensky, emphasizing the importance of combining learning with life, believed that a student learns learning material more easily if he shows what benefits this material has in everyday life. The implementation of this principle also expands the range of possibilities and enriches the personal makes theoretical knowledge more thorough and in demand in everyday life, and not only in educational situations. This principle simultaneously performs educational and developmental

functions, proves the validity of the basic didactic laws. The essence of practice-oriented learning is to build the educational process based on the unity of the emotional-figurative and logical components of the content; the acquisition of new knowledge and the formation of practical

experience of their use in solving vital tasks and problems; emotional and cognitive saturation of students' creative search. The practice-oriented approach has great educational opportunities, since:

- there is awareness by students social and personal necessity of acquiring knowledge;
- the organization of the content of the educational material assumes an attitude towards the student as an interlocutor, a partner who has the right to make his own decision;
- the selection of practice-oriented educational material allows you to form a stable cognitive interest and ensure a solid assimilation of the studied material [8].

For the effective implementation of a practice-oriented approach in teaching physics, physical tasks have great opportunities. To begin with, let's consider the concept of a "physical task". In the scientific and methodological literature, a physical task is a situation that requires pupils to take mental and practical actions based on the laws and methods of physics aimed at mastering knowledge of physics, the ability to apply them in practice and the development of thinking [21].

There are various classifications of types of physical problems, we will adhere to the classification proposed by A.V. Usova.

We are interested in the classification of tasks by content and by the main method of solution. In our work, we pay attention to applied or practical tasks. A physical task with practical content is understood as a task aimed at identifying the physical essence of objects of nature, production and everyday life with which a person interacts in the course of his practical activity [1].

According to I.M. Shapiro, tasks with practical content are subject, along with general

requirements, to additional requirements: the reality of the situations described in the problem condition, the numerical values of the data and the result obtained;

the accessibility of non-mathematical material used in the task to students, the cognitive value of the task and its educational influence [2].

The concept of "task with practical content" is close in meaning to the concepts of "task with polytechnic content" and "task with industrial and technical content". We differentiate these concepts and then compare them.

Examples of physical practice tasks:

1. In which water is it easier to learn to swim: in lake or sea? (When studying the topic "Archimedes' Law")

2. How to determine which is north and which is south using a magnet? (When studying

the topic of "Magnetism")

3. Where is it easier to break a nut: on the seat of an armchair or on a wooden table?

(When studying the topic of "Interaction of bodies")

4. If the screw is rubbed with soap, it is easier to screw it into a tree. Why?

(When studying the topic of "Friction")

5. Why would an experienced tourist prefer to step overa fallen tree instead of stepping on it first and then jumping off? (When studying the topic "Energy") [4-6]

Mechanics

1. How to distinguish a raw egg from a hard-boiled one?

Place the raw and hard-boiled egg on a flat surface and inform them of the rotational movement. A steeply boiled egg rotates like a solid whole: noticeably faster and longer raw. The liquid content of the raw egg delays the rotational movement of the solid shell due to its inertia, so the raw egg will rotate more slowly and stop soon.

This is a simple way to help distinguish a raw egg from a hard-boiled one, known to all housewives.

2. Which glasses are more suitable for hot tea: thick or thin?

Glasses often crack from hot water. The reason is the uneven expansion of the glass. Hot water poured into a glass does not warm up its walls immediately: the inner layer of the walls heats up first, while the outer layer does not have time to heat up yet. The heated layer of glass begins to expand and press on the less heated layers from the inside. And the thicker such a wall is, the more unevenly its layers warm up, which means that its layers expand. Therefore, thick glasses are the most fragile: they burst more often than thin ones. But thin walls warm up faster. We just need to remember that not only the walls of the glass should be thin, but also the bottom.

Based on the analysis of scientific and methodological literature devoted to the practice-oriented approach in teaching, the following conclusions can be formulated:

1 The practice-oriented approach is one of the guiding principles of didactics.

2 The practice-oriented approach has great educational opportunities, since:

- there is awareness by students social and personal necessity of acquiring knowledge;
- the organization of the content of the educational material assumes an attitude towards the student as an interlocutor, a partner who has the right to make his own decision;
- the selection of practice-oriented educational material allows you to form a stable cognitive interest and ensure a solid assimilation of the studied material [7].

3 The implementation of the principle of practical orientation is facilitated by the use of practical tasks, experimental tasks, simple experiments and "physical life hacks" by the teacher in the lesson.

2. Didactic functions of simple experiments

It is known from the methodological literature that an important goal of teaching physics is to master the methods of solving various, mainly practical physical problems by students.

N.N. Tulkibayeva identifies 10 main functions of problem solving:

1) introductory and motivational;
2) cognitive;
3) developing;
4) educating;
5) illustrative;
6) practical application of the studied physical laws and patterns;

7) formation of students' special physical skills and abilities;
8) formation of students' interdisciplinary skills and abilities;
9) formation of students' general skills and abilities;
10) control and evaluation.

These functions are of a general nature and are inherent in all physical tasks. Thus, simple experiments have the same functions. Let's take a closer look at the most important functions.

Here is an example of a description of a lesson on "Thermal conductivity (Grade 8)" developed by bringing simple experiments in physics.

Subject: Conductivity (grade 8)

1 Motivational stage (at this stage, it is necessary to create conditions for the emergence of domestic needs inclusion in the activities of the "want to", to update the requirements for student from educational activities "must" and to demonstrate that back-breaking and highly complex problems are not expected, "can": here you can apply the technique of "delayed guess", that is, before the announcement of the topic the teacher offers an unusual fact, a comment that indicates the subject of the lesson, but does not name her. For example, you can tell that not so long ago the teacher learned that it is better to use a teapot made of porcelain, not metal, to make tea. During the discussion, students should put forward their own versions of the lesson topic, and what will be discussed at all);

Stage 2 updating of knowledge on the proposed topic and the implementation of the first trial action (here it is necessary that students can remember 2 the Stage of actualization of knowledge on the proposed topic and the implementation of the first trial of the action (here you want the students to recall what they already know on this topic, try to strengthen cognitive functions such as analysis, comparison, etc.);

3 Identification of difficulties: what is the complexity of the new material that creates a problem (you can pay attention to the fact that some objects in exactly the same conditions and having the same temperature, seem to be more cold to the touch, than the rest. You can ask the guys to touch a metal cylinder, a mirror, a wooden desk, thereby putting the students in a difficult position, since they do not know how to explain this experience);

4 Development of a project, a plan to get out of the current difficulty, consideration of a variety of options, search for the optimal solution (the teacher suggests performing small experiments, recording the observed phenomena);

Conclusions

The analysis of the collections of tasks revealed that most of them are formulated in such a way that students do not have to do the experiment, i.e. what they could observe is already described in the task condition. Therefore, it is necessary to make experimental tasks distributed by topic, so that the teacher , if desired, can easily choose an experience.

3 Simple experiments perform such didactic functions as: introductory-motivational,developing,

educating, interdisciplinary skills, etc.

4 Simple experiments can be applied by the teacher at almost any stage of the lesson, can help him create a problematic situation and be the basis of project activities.

5 According to students, simple experiments help to understand the material at a deeper level, and also increase their interest in physics as an academic subject.

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