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Methodology of using Developing Educational Technologies

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ANNOTATION: In the article, the author describes the content of solving some practical topics in labor and vocational education in school technology education, such as mathematics, physics, biology, as well as practical problems in the field of agriculture and technology.

KEY WORDS: school, educator, student, education, upbringing, technology, method, developmental education, practice, problem, skill, profession, efficiency.

Technology classes also provide students with an understanding of mechanisms. Such lessons can be organized using trainings as follows. The teacher begins the lesson with a brainstorming session: "What is the detail?" Students' answers are written on a piece of paper, underlined, and general rules are developed: "Integral parts of machines and mechanisms that are not divided into other components are called details." The teacher then divides the participants into three small groups: the first group is "What is a bullet?", The second group is "What is a shaft?", And the third group is "What is a spindle?" Ask them to answer the questions for 2 minutes and have one student from each group speak. After the students have answered, the teacher uses the machine and drawings to provide detailed information about the bullet, shaft, and spindle.

There will be a game in between to keep the students from getting tired. The teacher throws the ball to the students and asks them the meaning of something, and the student has to answer immediately and throw the ball back. For example, "What is a typical detail?", "What is a special detail?", "What is a bullet?" and h. At the end of the game, "What is the mechanism?" and takes the unanswered ball and starts the next exercise.

The teacher asks the students, "What do you mean by a mechanism?" The answers are written on a piece of paper and a generalized definition is developed: "Mechanical devices consisting of guiding and guiding links and transmitting motion are called mechanisms" [4].

Then the second part of the lesson begins. The teacher divides the participants into two groups and asks, "What do you mean by a car?" And "What are the parts of a car?" asks them to answer questions such as: When the groups are ready, the answers are discussed, and the teacher corrects the students' mistakes, makes additions, and concludes the lesson.

The method of determining the forecast on the basis of available data. It helps to visualize the future appearance of a product, mechanism, or machine, and to determine how it will work and be used, based on historical and current information. For example, you can use tables in the following forms:

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Forename	There was, there was (historical information)	Available now	Future status
Pen	Sticks, feathers, ink pens	Ball pens	Electronic pens
Clock	Sand, mechanical, electronic	Mechanical, electronic	?
Television	Light bulbs	Microcircuits	?
Computer monitor	Electron beam	Electron beam, plasma	?
...	...	...	?

"If I ..." method. It's about how students, as professionals, can solve problems in this area are asked to comment. For example, "If I were a car designer I would have created a car" (If I were a car designer, I would have created a car that can walk in the mountains. To do this, I would use a helicopter to drive a car). "If I were an aircraft designer ... I would build an airplane" [7] and so on. The advantage of this method is that it quickly develops students' imagination, comparison and imagination.

The subject of "Technology" in general secondary schools, the solution of practical mathematical problems in the lessons of vocational education in vocational colleges is one of the factors that ensure the rapid and easy mastery of this subject by students. Especially when some topics related to labor and vocational education are linked to subjects such as mathematics, physics, biology, as well as to the solution of problems in the field of agriculture and technology. Convenient opportunities will be created for them to learn. To this end, we recommend the following few issues.

Issue -1. What is the minimum cross-section of the wood, ie the diameter or length of the circle, to make a square beam with sides of 15 cm? (Figure 4).

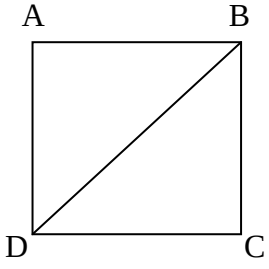
Given: AB=BC=CD=DA=15sm.

Need to find: BD=d=?

Solution: According to the

Pythagorean theorem***:*** $d=\sqrt{a^2+a^2}=a\sqrt{2}$

Here a=15 sm.



Putting it in place: $d=15\times1.41=21,15\sim21,2$ 4- picture.

This means that in order to make a square beam with a side of 15 cm, the diameter of the timber must be at least 21.2 cm. But usually the diameter of the wood is not the same along the length. Therefore, to determine the required diameter, it is necessary to find the circumference C of the wood. In this case, the formula C = 2 R is used. In this circle chetlarini, 4-rasmdagidek B, D nuqtalardan o‘tadi deb faraz qilsak, u holda BD kesma aylananing diametriga aylanadi. Shundan kelib chiqib, raqamlarni o‘rniga qo‘ysak C=66,5 sm ekanligi ma’lum bo‘ladi. Demak, aylana uzunligi 66,5 sm bo‘lgan yog‘ochdan tomoni 15 sm bo‘lgan kvadrat ko‘rinishidagi to‘sin tayyorlash mumkin ekan. Bu masalani 8-sinfdagi geometriya va 7-8-sinflardagi texnologiya fani darslarida qo‘llash mumkin.

Here are some practical questions.

Issue - 2. A board 3 cm thick was brought. How many planks will be needed to floor a room with sides 4m 5m = 20 sqm? When processing wood, keep in mind that an average of 5 mm will be cut into pieces (6th grade math, 8th grade geometry, 5th-7th grade labor education).

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Issue - 3. How much electricity does a 100 watt light bulb use for 2 hours? Calculate this for a month and a year. How much electricity would it take if ten light bulbs were on for so long? If the average cost of 1 kW of electricity is 143 soums, how much will be paid for the above electricity consumption? (5th grade mathematics, 6th grade physics, 5-6-7th grade technology science).

Issue - 4. How can a piece of material with dimensions of 3m 3m = 9 sq.m be divided into four pieces to form three equal squares (Grades 5-6 Mathematics, Technology)?

Issue-5. The average yield of cotton is 3 quintals per hectare. How many acres of cotton should be planted to produce a ton of "white gold"? 20; 25; 30; Find the answer to the problem for 35 cases (grades 5-6; basics of agriculture).

Issue- 6. There are 75,000 cotton seedlings per hectare. If one gram of cotton is not harvested in each bush, how much cotton is left on 200 hectares? (Grades 5-6 Mathematics; Fundamentals of Agriculture).

Issue-7. It is known that when cotton is processed, it produces cotton fiber, seeds and cotton wool. The mass of cotton fiber obtained is the mass of cotton 35.5-36%, and the seed mass is 60-61.5%. One ton of cotton can produce 300 meters of yarn, 100-110 kg of vegetable oil, 200-250 kg of cotton. Based on this information, complete the table below (Grades 5-6 Mathematics; Basics of Agriculture).

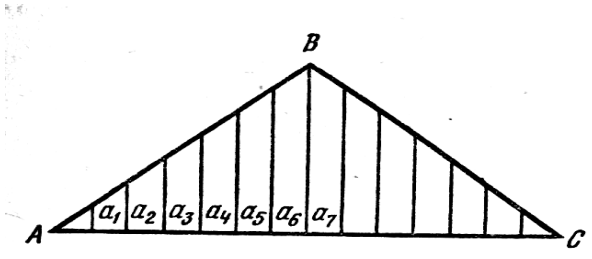
Amount,	Filament (kg)	Chigit (kg)	Yarn (m)	Vegetable oil (kg)	Kunjara (kg)
1 t.	355-360	600-610	300	100-110	200-250
5 t.					
100 t.					
1000 t.					
1000000 t.					
3000000 t.					

Issue- 8. According to agro-technical requirements, for long-term storage of grain, its moisture (condensation state) should be 14%. If the moisture content of freshly harvested grain is 22%, what is the percentage decrease in mass when it is dried to the state of condensation (Grades 5-6; Basics of Agriculture, Technology)?

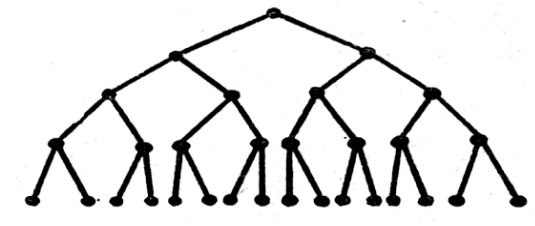
Issue -9. How much should be taken from plants with 80% and 35% moisture to produce a blue mass with a moisture content of 75% during silage pressing (Grades 5-6; Basics of Agriculture, Technology)?

Issue- 10. The rod length of the metal truss is 5 dm, with each rod extending by 2 dm. Find the lengths of the 7 rods (Fig. 5. 9th grade algebra; technique, technology science)?

Issue- 11. Under favorable conditions, one bacterium multiplies by two per minute. What is the number of bacteria in 7 minutes (Figure 6. Grade 9 algebra; biology, technology)?



5- picture.



6- picture.

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Issue -12. As you know, the cutting speed on a lathe is calculated by the formula. In this case, D is the diameter of the surface to be machined (in mm), n is the number of revolutions per minute of the part. Construct a connection graph for a lathe-revolver, assuming that the variable n is a constant.

Assume that D = 70 mm and draw a graph for the cases where Figure 6 is n = 70, 105, 158, 220, 330, 494 (Grades 8-9 Algebra and Vocational Education).

There are many such issues. By using them regularly in labor and vocational education classes, it is possible to increase students' interest in science and professions, and to convincingly demonstrate how different disciplines are applied in life and technology.

From the above, it is clear that teaching and educating students is a difficult task. One of the most difficult tasks of a teacher is to make all students active in the classroom, taking into account the individual characteristics of each student. It is important to remember that the student's activity does not increase by itself, but is the result of a conscious attitude. Since activism is the result of consciousness, it requires the coordination of the content, form of organization, methods and means of implementation of educational work. The teacher must consciously increase the students' interest in reading.

"Human life is like a journey from one place to another. This road is flat, smooth, and has a lot of ups and downs. We are the fastest growing people in the world today. The mountain road requires courage, bravery and great vigilance, ”[5] - said one of our favorite poets, Hero of Uzbekistan E.Vakhidov. In the same way, educating students and guiding them to choose a profession is a difficult task

It should be noted that, unlike other disciplines in secondary schools, there is a great opportunity to develop students' understanding of the field of production by increasing the activity of students in the subject of "Technology". Because in the course of "Technology" theoretical education is inseparably linked with practical education. This allows students to work independently and demonstrate their abilities to the best of their ability. During the lesson, students enjoy seeing their own creations, comparing them with those of their peers, being proud of their achievements, and correcting any shortcomings. This will be the first step in helping students become independent. In organizing such activities, it is important that the teacher's skills, in particular, the form and methods of teaching, depending on the nature of the lesson.

Recently, great changes have taken place in the field of education in our country. This can be seen in the directives for reforming the education system, educational standards, curricula and literature being created, and in the example of new educational institutions being built.

However, there are some issues that need to be addressed. One of them is to develop and implement more effective forms and methods of teaching students to activate their cognitive activity, independent thinking and ability to work in the classroom.

Improving the content of education, using a variety of active teaching methods has become a requirement of the times. The outcome of a teacher's work in the educational process largely depends on the activity of the students. To do this, the teacher must look for innovations, show examples of initiative and creativity. Therefore, it is important to improve the lessons of "Technology", to activate the theoretical and practical activities of students, to develop in them the skills of active work.

Based on the above, it can be concluded that there are great opportunities in Technology classes to introduce students to the main links and areas of production, to prepare them for independent living and to guide them in choosing different professions. Therefore, it is the professional duty of every

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teacher of "Technology" to achieve a thorough organizational, methodological, scientific, technical, ideological and political aspects of the lessons of "Technology".

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