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METHODS OF TECHNOLOGY TEACHING IN PRIMARY EDUCATION

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ABSTRACT:

The simplest experiments and tests performed by pupils in primary school technology lessons are based on the simultaneous integrated use of all analyzers, which increases their educational value. Simple experiments are carried out in the primary grades to investigate the properties of those materials which the younger pupils process in the working education lessons (paper and cardboard, fibrous, plastic, natural and waste materials). This article reveals such didactic approaches to technology in order to develop young people's creative thinking.

KEYWORD: pedagogy, psychology, technology, education, methods

INTRODUCTION:

In technology lessons, children are involved in two types of activity at the same time: work and learning. Each of these activities has its own motivation and purpose, its own regularities, a specific structure and organization. In the lesson, these activities are closely linked, forming a complex set of learning and work activities and operations and mutually influencing one another. At different stages of a technology lesson, one or another type of activity may play a dominant role. The most important for the student is to prepare the workplace for the work to be done: prepare the tools in a comfortable and safe way, choose the right materials, etc.

The main focus of the student's attention and energy is on studying the properties of the material to be worked on, or on being told about a technological process by the teacher, or on doing the necessary calculations [6].

By constantly switching from one activity to another, the pupil must not lose the overall thread of his work in the lesson, its logic, moving sequentially towards the goal. This is quite a difficult task for a young pupil. Taking all this into account, we can say that the activity in which children are involved at the technology lesson integrates properties and qualities of two quite different kinds of activity, and it can be justifiably called a complex educational-working activity. This predetermines all other peculiarities and specific features of a technology lesson [15].

2. Children's working in a lesson is not the same working as that used by adults. The teacher includes children in the working process at the lesson, i.e., it is a learning-working process. Each type of activity in this process is aimed at its final result, which is the purpose of the activity. For the work activity, this is a concrete product of work: that product which the children are engaged in making, or a service of some kind. Obtaining this product is the final goal of their work activity in a given lesson.

The learning activity has a different goal - acquiring a certain amount of knowledge, both polytechnic and general, directly connected with the content of children's working; acquiring complex and simple working skills; consolidating some skills and bringing them to the level of a skill [9].

It is impossible to determine which of these goals is more important. For children the result of their working activity (a concrete

product of working) is more attractive and, therefore, more meaningful.

It motivates their working and learning activity to a greater extent, contributing to the dominant motives of this complex activity, especially if the work product is interesting, unusual, vivid, entertaining, and beautiful; if the child knows where and how he/she will use the product, what is the benefit of his/her work. This is due to the fact that thinking of younger schoolchildren is visual-imaginative [5]. A concrete object of work is initially clearer, more interesting and attractive to them than the abstract theoretical knowledge associated with it. Intellectual and practical skills, which are formed in the process of working activities, are not perceived by younger pupils as important components of learning activities to be acquired in a purposeful way. For children, they are just a means by which they can do a useful thing.

The teacher, on the other hand, sees in the product of the children's working, in the working process itself, first of all, the means and ways of solving numerous educational tasks of a technology lesson. For him, the educational, educational and developmental result of the children's work activity is more significant and important. This is a fundamental difference in the understanding of the purpose and meaning of a technology lesson by students and a teacher [4]. All this is directly reflected in the teacher's activity in the technology lesson, making it much more complicated, which is manifested in the following feature.

The use of such experiments and observations allows younger pupils to answer questions about the properties of different materials (soft - hard, light - heavy, smooth - rough, dense - porous; strong, brittle, elastic, rigid, transparent, white, colored, mottled, etc.), as well as about the features of resistance of each material when processing it with tools, more precisely for solving practical problems with each lesson. The knowledge and skills that pupils accumulate through observation and experimentation form an important basis for children's knowledge and skills in product design.

An important aim of lessons involving observation and experimentation is to develop the ability of younger pupils not only to observe carefully, but also to see. This skill has to be taught to pupils continuously and systematically. To be able to see means to be able to distinguish in the observed object, phenomenon, process the main, essential, characteristic or new. The better, for example, a student learns individual properties of materials, the better he/she can use the knowledge of these properties at technology lessons, other lessons and in life in general [16].

MAIN PART:

The teacher should organize experiments, tests and observations according to certain principles:

Accessibility (gradual increase in complexity of the content, volume and workload of the experiments should not go beyond the content of the curriculum accessible to primary school pupils, should be concrete and understandable);

Scientificity (the teacher uses only verified information and formulates conclusions from a scientific point of view)

Consistency and sequence (repetition of the same experiments with complications in different grades, in the study of different topics and sections of the curriculum)

Connection between theory and practice (once students have carried out the experiments, they immediately use the findings and are convinced that this helps them to achieve the best possible results)

Engagement of all students (organizing investigations stimulates the interest of every student in the class)

Safety (the teacher should be sure to follow the safety rules and require the students to follow them rigorously).

Experiments and observations usually have two complementary objectives: on the one hand, by observing phenomena or results, pupils are led to conclusions and draw conclusions directly relevant to the practical work they do; on the other hand, by knowing the conclusions beforehand, they learn to confirm their knowledge in the experimental work; and this knowledge becomes more solid and meaningful [1].

The techniques of observation and experimentation, however simple, cannot be mastered without constantly improving students' ability to mobilize attention, reflect, analyze, record and self-monitor. From simple, brief, sometimes fleeting observations, younger pupils gradually move on to organised and purposeful experiments with predetermined tasks. By observing their own work and the work of their classmates, pupils compare, contrast, and evaluate design solutions, methods and quality of work, finish of completed products. Such indicators as simplicity, convenience and ease of performance of auxiliary and processing operations, work techniques, the amount of time spent on work are not left out of students' sight [2]. The result of such work of students in technology lessons is their increasingly independent identification of new features and properties of the studied objects and phenomena, the formulation of conclusions that become more accurate, clear and systematic with each lesson.

The experiments help the younger pupils to put their knowledge into a system and to link it with that acquired in other subjects. It should be noted that in this work it is important not only to enrich knowledge, but also to constantly improve the very ability to purposefully observe, analyse, compare and generalise. And without mastering these skills it is impossible to study well and to work meaningfully, purposefully and productively in the future.

MAKING COLLECTIONS IN TECHNOLOGY LESSONS:

The gradual expansion of the materials handled by children in technology lessons requires students to thoroughly learn about their properties. And it encourages more conscious use of the knowledge in their practical activities. The quality of pupils' knowledge of material properties and processing techniques is improved when this knowledge is systematised. An excellent means of such systematisation is for pupils to collect and design collections. In general, working with collections is of great benefit for the development of primary school students [12]. Younger pupils make collections of paper, fabric, thread, artificial materials, etc.

The collection of any collection is subject to certain requirements:

Scientificity (scientificity is determined by a good classification, which sometimes needs to be invented and justified by the students themselves. The samples are signed with correct scientific names);

Practicality (the specimens are on sturdy sheets and placed in folders or boxes. Each specimen must be accessible for viewing and tactile examination. Therefore it is unacceptable to put specimens in polyethylene files);

Aesthetics (nice arrangement of the samples, their neat cutting and attachment, neat inscriptions).

Collections of any material or object involve the purposeful selection, processing, systematization and assembling of materials or

objects. The specimens in a collection are arranged in a logical order that gives a clear idea of the accepted classification. Each collection has a title page with a description of the contents. A brief description may be provided for sections of the collection and individual specimens. A collection may additionally include photos related to the history and technology of production [10].

It is important to note that the first collections are compiled with the help of a teacher. Selection of samples for the collection is carried out beforehand. Pupils select the samples, put the selected samples in order. The teacher warns the students in advance that sloppy specimens should not be included in the collection. When all the material is collected, the teacher carefully looks through the samples, as often the students make mistakes in classification, in naming (for example, together with natural fabrics the students bring artificial or mixed fabrics by mistake) [14]. The teacher suggests or advises to consult reference books, the Internet and experts.

In subsequent technology lessons, sometime should be allocated to looking at and analysing collections, which will help consolidate knowledge of the materials and help orient them to the properties. Without consolidating the knowledge gained, the work involved in collecting materials, preparing and mounting the collection will not produce the desired results [13].

Collections can look like projects (both individual and group). It is advisable to use long-term projects in this case, as the collection can be expanded and augmented. Such a collection-project can contain both theoretical information from history, modern production, material science, and practical results (made crafts).

CONCLUSION:

The teacher has two main functions in the technology lesson: organizational and constructive. When organising the labour process of the children in the lesson, the teacher is primarily concerned with its clarity, logic, coherence, rhythm, safety and completeness. The teacher should be well aware of the general structure of the labour process, its main components, peculiarities of the technology of making a certain product from certain materials and on this basis rationally organise the work of the children. In this case his activity is more similar to that of a technologist. The teacher acts as a supervisor of "production".

On the other hand, he teaches children not only to work properly, but also to acquire necessary knowledge and skills in the process of work; expands their horizons; encourages them to reason, prove, explore; increases their creative and cognitive activity, independence and responsibility. Through work activities the teacher encourages the children to acquire a constant habit of mental and physical effort, diligence, responsibility, determination, accuracy, a sense of comradeship and mutual assistance; in other words he fosters socially important character traits and personal qualities. The teacher shall strive not only to organise working process but also to develop all the cognitive processes: feeling, perception, attention, imagination, memory, thinking and speech. In this way, he or she addresses a whole range of educational and developmental tasks in the work activity, implementing the basic functions of the educational process in the primary school.

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