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## Application of Advanced Information Technologies of Training at Drafting Lessons

**Key words:** *drawings, drafting, structures, image of subjects, primitive and conditional sketches, modern projective drawings, graphic preparation, didactic materials, didactic games and computer technologies.*

**Annotation:** *drafting is such subject at which studying pupils get acquainted with a wide range of technical concepts. Knowledge of drafting facilitates studying of many other things general techniques subjects. Conditions of successful mastering by technical knowledge are ability to read drawings and knowledge of rules of performance and registration of drawings. The drawing is one of the main carriers of the technical information without which any manufacture does not manage.*

Requirement to represent subjects were appeared to people very much long time ago. In an antiquity people represented on stones of wild animals, hunting, etc. Later similar images were appeared on household goods - vessels, vases and on other utensils. So there were first images of subjects and the phenomena which the person observed in surrounding his life.

In the course of labor activity of the person there was necessity to represent subjects not existing yet and structures. Such problem became, for example, before architects at construction of temples, theatres and palaces.

Drawings of plans and facades of buildings were known in Ancient Egypt to what the images which reached us of constructions on papyrus testifies. However, the big period of time before separate images of the plan and subject facade were united in system of two kinds, i.e. the subject drawing in modern understanding of this word was required.

Ways of the image of subjects on plane developed the ways from primitive and conditional sketches, to more perfect, coming nearer to modern projective drawings.

Improvement of quality of graphic preparation of pupils in the big degree is promoted by the accurate, purposeful and methodically thought over system of a statement of knowledge at hours of studies. In educational process it is necessary to introduce new, most perfect methods of teaching and training, it is reasonable to involve training means. Increase of learning efficiency to plotting in many respects depends on using at lessons of didactic materials, didactic games and *computer technologies*.

Process of information of modern society demands from each person the ability of using personal computer (personal computer).

If to use computer technologies of training (WHO) at drafting lessons, training process becomes more active;

- Skills of work with computer are formed;
- Abilities to use information technologies in a daily life are formed;

- Ability to use information resources of mankind is formed;
- Economy of time of lesson;
- Possibility of increase in volume of new material at lesson and reduction of time for its explanation;
- Time for preparation for lesson is reduced;
- Possibility of performance of virtual demonstration displays with using of the inaccessible equipment is created.

Computer technologies, in particular presentations as visual aids, help teacher to state teaching material, develop skills of supervision and analysis of the form of subjects, providing strong mastering by pupils of knowledge, raise interest to subject.

Specific appointment is got by presentations at all stages of lesson, at performance of graphic and practical works. The Slide Film allows showing on one slide condition of an offered problem, on other - the decision (its stage-by-stage performance). It allows to reduce time at check of homework, repetition, statement of new material, fastening and to take away more time for performance of practical and graphic works, correctly to understand the purpose and a course of forthcoming work, to warn many graphic errors, to accelerate process of performance of tasks. Shown slides will serve as samples for correct graphic execution of work.

*What is presentation?* On change to filmstrips, slides appeared, but already in a new appearance and under the new name - "slides" was come.

Presentation (from English "presentation" - representation) is a set of color pictures-slides on a certain theme. On each slide it is possible to place any text and graphic information.

At schools and institutes by means of programs of type MS PowerPoint, entering into package Office, it is possible to create and show educational and help slide films, to tell about work of circles, sections, etc.

In the course of creation of presentations, the teacher can prove both as a script writer, and as the director, both as the artist, and as the executor.

*How to show presentations.* To show slides it is possible both means of the "main" appendix - PowerPoint, and means of the simple program-demonstrator (PowerPoint Viewer). For display of slides in an audience use the special projector connected to the computer and the screen. The teacher operates presentation from the keyboard.

Possibility of several modes of demonstration (change of slides manually - in a direct and return direction - accompanying each shot explanatory, automatic display) allows the teacher to return to lesson material (*to slides* - to visual aids) at its any stage.

Microsoft application PowerPoint gives the chance:

- to design a lesson, changing an order of display of slides, their quantity (to hide material for profound studying of material) differentiating material depending on level of readiness of pupils, even on a course of its carrying out;
- to supply each slide with additional visual effects (slide construction, transition of a slide, etc.), that allows to recover a slide at demonstration;

- to supply a slide (slides) with additional properties (to hide, installation of an order and time of demonstration, etc.).

Using of presentations opens more opportunities for creative teaching, both drafting, and other subjects, provides the polytechnic principle of the training which differentiated and has been personal-focused (at lesson carrying out in a computer science office) approaches in training.

Applications of computer technologies are on drafting lessons.

The purpose of methodical working out – is to acquaint with system of a statement of teaching material, to show, where and how it is possible to apply the developed slides at lesson.

The purpose of using of computer technologies - is to promote an intensification of educational process, to raise motivation of the doctrine, that is to raise mental activity of pupils, to clear up their creative abilities.

Slide film display is accompanied by explanatory (display, both with a soundtrack, and without it is possible, with explanatory of the teacher on shots or in an automatic mode of change of slides). At a following lesson the film can be used to check up the material is how much acquired. The teacher shows this or that slide on the screen and sets control questions. Answers can be both oral, and written.

Using on lessons of educational films (slide films) allows to show visually to all group correct working methods, their sequence that it is rather inconvenient to make, showing them is direct on a workplace. Pupils penetrate into dynamics of technological process, feature of performance of each operation. As the educational film can contain a material of different degree of complexity, there is a possibility to differentiate teaching material, tasks depending on readiness of this or that group of pupils to consider possibilities of each pupil. It meets the requirements of the modern personal-focused approach in training.

Programs allow to create supervising tests in any subject, consisting of ten questions with choice correct of four answers to each question. The teacher has possibility to set criteria of an estimation and time of performance of the test.

At each start the program changes alternation of questions on a way of random numbers and as ciphers the test text so, what even the "advanced" pupil not in a condition to "deceive" the computer, having peeped variants of right answers.

After performance of the test the program gives out the information on how many questions, how many right answers have been answered by pupils, on what questions right answers were given or not.

Besides, to a file of the pupil the name is appropriated, and this file automatically registers in memory of the computer that allows to work in a consequence with pupils individually and to eliminate blanks in their knowledge. Also the program grades for the executed test.

At the present stage of development of computer techniques and taking into account level of computerization of formation including school, as the basic models applied at teaching of plotting, computer models have been chosen.

The computer gives to the teacher the broadest possibilities for visualization of an explained new material, and also for the organization of independent work of pupils, the control of their knowledge and an estimation of level of mastering of material.

As the base for computer modeling and designing the system Compass is chosen, allowing to estimate correctness of choice of the given program.

The Compass is a Complex of the Automated Systems for the decision of a wide range of problems of designing, designing, manufacture preparation in various areas of mechanical engineering. It is developed by experts of the Russian firm of joint-stock company "Askon" which worked before at the enterprises of various defensive branches. One of the first domestic Sapr was the system the Cascade developed in 1986 in KB of mechanical engineering (Kolomn).

Operating experience of systems has shown the Compass, that they easily accustom the user (irrespective of age), considerably accelerate process of release of the drawing documentation and considerably raise its quality. Thus the problem of overcoming of a psychological barrier, especially at users of solid age easily enough dares, and after all they own unique knowledge and experience.

Drafting is such subject at which studying pupils get acquainted with a wide range of technical concepts. The knowledge of drafting facilitates studying of many other things of general techniques subjects.

Conditions of successful mastering by technical knowledge are ability to read drawings and knowledge of rules of performance and registration of drawings. The drawing is one of the main carriers of the technical information without which any manufacture does not manage.

Drafting is as a studying subject puts following problems:

- 1) to learn to carry out various geometrical constructions by means of drawing tools; to build images of subjects as by means of drawing tools, and by hand; to represent subjects in rectangular projections to drawings;
- 2) to learn to read drawings and independently to carry out sketches and drawings of simple details and knots; to develop spatial representation.

Value of drawings in a science and techniques is very great. According drawings builders erect apartment houses, factories, factories, roads, bridges and other engineering constructions; machine engineers under drawings produce cars, machine tools, turbines; assemblers under drawings collect and establish the equipment at factories, factories, power stations and other objects.

During the studying of many disciplines drawings are used for explaining the device of cars, knots, and elements of buildings, engineering constructions and other subjects.

Requirement to represent subjects appeared to people for a long time ago. In an antiquity people represented on stones of wild animals, hunting, etc. Later similar images appeared on household goods - vessels, vases and on other utensils. So there were first images of subjects and the phenomena which the person observed in surrounding his life.

In the course of labor activity of the person there was a necessity to represent subjects not existing yet and structures. Such problem became, for example, before architects at a construction of temples, theatres and palaces.

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Ways of the image of subjects on a plane developed the ways from primitive and conditional sketches, to more perfect, coming nearer to modern projective drawings.

Industrialization of our country, creation of domestic mechanical engineering and other manufactures, construction of new factories, factories and cities led to wider use of drawings, to working out of the design.

**References:**

1. *Methodical course book on drafting: Botvinnikov AD, Vinogradov VN, Vishnepolskiy IS. Moscow, 2006; 159.*
2. *Pavlova AA, Korzinova EI. Graphics and drafting. 7-9 classes: working writing-book № 1. Moscow, 2000.*
3. *Technology: Textbook for pupils of 8 classes of comprehensive schools: ed. VD. Simonenko. Moscow, 2001; 240.*
4. *Drafting. Educational area "Technology": Program for general education institutions: NG. Preobrazhenskiy. Moscow, 2002.*