

Methodological conditions for the organization of field practice through information technology

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Abstract

The article describes the methodological aspects of the organization of theoretical knowledge of students in industrial practice using modern information and communication technologies. Students will have the opportunity to directly observe natural phenomena in the field practice, such as the distribution of animals, feeding, caring for offspring, as well as the struggle for survival, which is actively supported by modern information and communication technologies.

Keywords: computer, camera, practice, presentation, excursion, technology, video,

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Today, we use an audio, a video, telecommunications and information technology, developed on the basis of the latest achievements of science and technology in education, is of great importance. Therefore, they are getting acquainted with their didactic potential and learning to use them in the classroom will be a great help for future teachers in their future activities.

The use of information and communication technologies in field practice can be effective. Modern computer technologies are different for students to obtain information (visual aids such as static, dynamic, accelerate the process of obtaining information during the internship, making it much easier); the role of information and communication technologies in the performance of standardized control functions is very important in the teaching of biology¹.

The use of cameras in field practice and the display of photographs taken during field trips include color photographs. They can be used in different stages and situations of the training period, using different technological methods. For example, in preparing presentations and explaining the study material, it is enriched with photos of plants and animals on the itineraries, which makes it more interesting for students. In particular, it is very meaningful in explaining biological species and their differences from each other. When you show the photos taken during the internship in the evening classes through a multimedia projector, you will be able to show not only the whole picture, but also individual parts of it. However, the teacher can use the POWER POINT program to mark the pictures, cut out some of the pictures or, conversely, create a combination of photos from several of them.

Field practice can also be used to reinforce the knowledge gained from evening presentations with the help of pictures. These photos may have been removed from the previous ones only with captions and comments. In this case, the captions in the photos will be rewritten and reviewed by the students. This work helps to strengthen students' knowledge and control. Students can also take advantage of these photo opportunities to compare materials on one or more topics.

At the same time, shaping students' experience working with photographs gives them the experience of using visual presentations in lectures, abstracts, reports and project work. In this case, students choose the pictures to display and once again demonstrate their creativity. The purpose of such classes is to develop students' skills such as speaking, quick thinking, composing an abstract on a topic, and preparing visual material on a topic. The development of such skills among students also shapes their ability to analyze similar performances in students in their group.

The use of videotapes in field practice as well as visual aids in biology teaching, especially videotapes, allows students to master the material more deeply and robustly through polysensory activity. The combination of text and video makes it much easier for students to master the information in the curriculum. The integration of video technology with computer technology takes them to a whole new level, including: the ability to pause, copy the frame, enlarge the frame, move the frame with the text, read on a frame-by-frame basis. Features such as creating z objects allow them to be used in different directions. Videos shot directly in the wild are very important in the learning process. Along the guided tours, students and the instructor can observe the number of sparrows visiting the nest, the butterflies landing on the flowers, the swallows coming to the nest, and feeding the chicks, and videotaping the process.

¹ Джураев Р. Х., Цой М.Н., Данияров Б.Х., Гайер Т.В. Интерактивный комплекс в образовательном процессе//Под ред Р.Х.Джураева. Монография. –Т.: Шарк, 2011. –268 с.



Students are very well remembered these videos, analyzed and they help their visualize real life.

Teachers are used illustrations to reinforce the material during the lesson and in the creation of presentations.

In field practice, animations are often used to illustrate biological and dynamic processes. The animations are shown at the same time as the descriptions of the process. Therefore, animation can be used to explain new material and for students to study independently.

In the animation series, the scenes are divided into several parts, so you can view each scene separately and revisit it by pausing at key points. During the animation, the teacher can conduct additional explanatory work at the stop, ask students about the frame, and write the necessary information in their diaries. There is a mute function in the animation process, which is very useful for repetition and consolidation of students' knowledge. By turning off the sound while the animation is going on, students explain the animation process themselves.

In addition, animation can be used to perform computer-assisted tasks in lecture halls with varying degrees of difficulty. In this case, different forms of task performance are used for students; you can explain the process, answer questions about the animation, prepare questions for the animation on display, or write a basic synopsis using it.

The materials collected during the practice are very useful in comparing, systematizing, and extracting information that cannot always be done by reading the text. For example, the timing of seed germination and the types of stem types can be explained by the teacher. In the above case, the tables are visual for students and can also serve as a database.

In the final part of the practice, interactive diagrams and pictures are implemented as a means of step-by-step delivery of information. At the end of the practice, a number of tables will be structured like interactive diagrams. Such schemes are characterized by the fact that the information is entered sequentially and can be used by the teacher as a basic reference in the explanation of the material. Interactive schemes are also used to structure student-taught material independently.

Pictures and photographs can also be used when using interactive schemes. This, in turn, increases the visibility of the study material and the clarity of the questions being studied².

Students can also use interactive images in the process of preparing the final report, and how this is done means that the process can work in two different systems. The first is that the "demonstration" system has three different options. The first option shows a schematic drawing of a biological object (for example, a plant root, a flower, etc.). When you move the cursor to a specific part of the image, that part of the image becomes brighter. In a number of other pictures, a brief description of the part is displayed when this action is performed. In this case, the teacher can use the picture as a reference in the explanatory work, supplementing it with his own knowledge.

In the second option, the "Show All" image is used in the same way as in the first version, with only clearly marked entries under these images. The interactive scheme in this option can be used to repeat or generalize the topic. The use of such interactive images in evening classes and in the laboratory during practice gives students good results in comparing real biological objects and data in the picture.

² Ergasheva G.S., Biologiya ta'limida axborot texnologiyalaridan foydalanish vosita va usullari. Maktabda biologiya jurnali.. 2009 yil, 4-son.Toshkent.



In the third option, the teacher can use the pictures without any notes. In this option, parts of the image are highlighted, but the information in the captions for that part does not appear. This option can be used to illustrate the picture, control and reinforce students' knowledge.

The use of a second system for working with interactive images, it called Self-Examination, is very convenient for students to use to consolidate and control their knowledge. This system consists of various variants of the picture and the texts that explain it. While the system is running, the student will need to determine the correctness of the text used to interpret the image. The correct answer appears automatically when students select one of the texts. This system can be used as a whole group or individually.

Interactive images can be used in conjunction with animations. Using a variety of images, it is possible to study the internal structure and function of a biological object.

Interesting types of interactive imagery include practicum and modeling that capture the vital activity of biological objects. In such interactive pictures, the student is given the opportunity to choose from a variety of external factors (humidity, temperature, and similar factors), resulting in the student having to determine the most favorable conditions for the object.

In the final stages of field practice, interactive test assignments play a very important role as a means of testing and monitoring students' knowledge. It is a set of questions and tests related to a topic or lesson, the answers of which are checked automatically. The instructor recommends that the generalized tests on the topic be reviewed once after each excursion, a process that is installed on students' mobile phones. In this case, these tasks are solved by students during the internship. In the evening practice classes, it is advisable to complete the interactive test assignments with the whole group. In this case, the tests are sent to the whole group through a projector and one student in the group is tested by the teacher on the topic in a mobile application. This way of organizing work forms the ability of students to work with a variety of exercises, especially tests.

If the interactive tests are used to determine the level of mastery of the topic, these tests can be taken by each student in the spare time of the internship through the mobile application on his personal phone. For use in generalized lessons, the facilitator recommends the use of interactive tests for each previous lesson. At the end of the internship, the tests consist of a set of topics covered. Field practice interactive test assignments can take many forms, such as one or more correct answers.

In conclusion, we can say that. The use of information and communication technologies in field practice provides the following opportunities:

- The use of information and communication opportunities in the field practice significantly expands the learning environment, makes the learning process more interesting and enjoyable;
- Working with a virtual laboratory helps students to acquire practical skills;
- Excursions organized using software in the field practice have a significant impact on the intellectual development of students. This is because they learn to look at and imagine natural objects independently according to the teacher's instructions. They form the basis for the formation of biological concepts and the ability to apply them in practice.

Through the use of software, students gain the ability to work independently, creatively research, and analyze events and processes.

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