

USE OF MULTIMEDIA PROGRAMS IN TEACHING THE SUBJECT OF HISTOLOGY

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Abstract. *The use of multimedia programs in the teaching of histology is an effective teaching method. Such programs make it possible to visualize the structure and function of tissues and organs, which makes it easier for students to understand the material. There are many multimedia programs that can be used in teaching histology, including Prezi, Histology Atlas, Histology Guide, Whole Slide Imaging, and more.*

Keywords: *multimedia technologies, teaching methods, prezzi, histology atlas, histology guide, whole slide imaging.*

At present, in connection with the development of information technology, in education, more and more attention is paid to the use of virtual programs for the development of students' research skills. In this regard, the issue of improving the methodology for using virtual programs and teaching histology is relevant.

The purpose of this study is to improve the methodology for using virtual programs to develop the research skills of students in teaching histology.

To achieve this goal, it is necessary to solve the following tasks:

1. Analysis of existing methods of using virtual programs and teaching histology.
2. Determining the possibilities of virtual programs for the development of research skills of students.
3. Development of a methodology for using virtual ones to develop students' research skills in teaching histology.
4. Conducting an experimental verification of the developed methodology.
5. Analysis of the results of the experiment and evaluation of the effectiveness of the developed methodology.

In modern education, more and more attention is paid to the development of research skills of students. Research skills are essential for successful scientific and professional activities. They include the ability to formulate hypotheses, conduct experiments, analyze data, draw conclusions, etc.

The use of virtual programs in teaching histology can significantly improve the quality of education. Virtual programs can help students better understand and remember educational material, as well as develop research skills.

Each program has its own features and capabilities. However, all of them allow you to visualize the structure of tissues and organs, as well as deepen students' knowledge of histology. The method of teaching histology may vary depending on the institution and the level of students, but it is important to consider the use of multimedia technologies, the organization of lectures, practical classes, work with textbooks and knowledge testing. A combination of these approaches may be useful for effective teaching of histology.

Relevance of the topic: the use of multimedia programs in the teaching of histology is very relevant at the present time. With the development of technology and the emergence of new programs and tools, educators have the opportunity to use a variety of teaching methods to improve the effectiveness of teaching histology and make it easier for students to understand the material. Also, the use of multimedia programs allows students to learn at their own pace and in an interactive way, which contributes to a deeper understanding and memorization of the material.

In addition, due to the COVID-19 pandemic, most educational institutions have switched to online learning, which has increased the need for multimedia programs for teaching histology. In this context, the use of multimedia programs becomes even more relevant and important for the effective teaching of histology.

The use of multimedia programs in the teaching of histology has great potential to improve the effectiveness of teaching. These programs provide the ability to visualize the structure and function of tissues and organs, as well as interactive study of the material. They can be used both in lectures and in practical exercises. A variety of programs such as Prezi, Histology Atlas and Histology Guide, Whole Slide Imaging allow educators to choose the most appropriate tool for their needs.

However, it is important to remember that teaching histology should combine the use of multimedia programs with other approaches such as textbooks, lectures and practical exercises. In addition, teachers must take into account the level of students and adapt their methodology to their needs and abilities.

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The topic of using multimedia programs in teaching histology is very relevant at the present time. With the development of technology and the emergence of new programs and tools, teachers have the opportunity to use a variety of teaching methods to improve the effectiveness of teaching histology and make it easier for students to understand the material. Also, the use of multimedia programs allows students to learn at their own pace and in an interactive way, which contributes to a deeper understanding and memorization of the material.

In addition to the Prezi program, which has already been mentioned, there are other multimedia programs that can be used in the teaching of histology.

One such program is Histology Atlas, which provides access to visualization of microscopic images of various tissues and organs. The program contains more than 1000 images that can be enlarged, reduced, rotated and viewed in various modes, which allows students to study the structure of tissues in more detail. The program also contains descriptions and functions of each type of tissue and organ, making it useful for self-study.

Another program is the Histology Guide, which provides access to interactive histology training. The program contains visualizations of microscopic images of tissues and organs, and also enables students to explore their structure and function. The program also contains tests and assignments to test understanding of the material.

In general, multimedia programs such as Histology Atlas and Histology Guide, Whole Slide Imaging provide students with access to a large number of visualizations and interactive materials that can help them better understand the material and better prepare for exams. In

addition, the use of these programs can also increase students' interest in the study of histology and make the learning process more fun.

Data on the use of multimedia programs in the teaching of histology in different universities may differ depending on the particular educational institution. However, many universities are already actively using such programs as an additional tool in teaching histology.

For example, in the United States, many medical faculties such as the University of Michigan Medical School, Stanford University School of Medicine and the University of California, San Francisco School of Medicine, Whole Slide Imaging use multimedia programs as a means of teaching histology. There are also examples in Russia when multimedia programs are used in the teaching of histology in medical schools.

In addition, there are many online resources and platforms that provide access to multimedia programs and other histology educational materials. Some of them may be free, such as online courses on the Coursera platform or Khan Academy, while others may be paid, such as the Medscape platform.

Thus, the use of multimedia programs in the teaching of histology is already widespread and continues to develop in various universities and online resources around the world.

Prezi is a multimedia histology teaching program created by Anatomy.TV. It provides access to 3D models and animations of tissues and organs of the human body, as well as photographs and diagrams of microscopic preparations.

With Prezi, you can study the structure and function of tissues and organs, as well as understand the relationships between them. The program contains over 2000 images, including photographs of slides, and over 200 animations and videos that can be used to demonstrate and explain complex histology concepts.

Prezi also has a testing feature that allows you to test students' knowledge after studying the material. The program can be used both for independent study and as a supplement to traditional lectures and teaching aids.

Prezi is available for use on computers and mobile devices, and can also be integrated into distance learning systems such as Blackboard and Canvas. It is provided as part of a subscription to the Anatomy.TV platform.

The Prezi program has a number of advantages in its use in the teaching of histology:

1. Visualization. Thanks to 3D models and animations, students can better understand the structure of tissues and organs and understand their functions.

2. Interactivity. The Prezi program allows students to explore tissues and organs on their own by dragging and rotating models for better understanding.

3. Testing. The testing function allows students to test their knowledge and prepare for exams.

4. Flexibility. The program can be used both for independent study and as a supplement to traditional lectures and teaching aids.

5. Availability. The Prezi program is available for use on computers and mobile devices, allowing students to study histology at any convenient time and place.

The Prizm program is actively used in many universities around the world to teach histology. For example, in the US it is used at Harvard, Yale, Stanford, Johns Hopkins and others. In Russia, there are also universities that use this program, for example, Moscow State University. M.V. Lomonosov.

In general, the use of multimedia programs such as Prezi has great potential to improve the quality of histology teaching and student learning in this important subject in medical education.

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