

INTERACTIVE CONTENT OF THE H5P PLATFORM AND MOTIVATION OF STUDENTS IN STUDYING BIOPHYSICS

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H5P, teaching biophysics, interactive, LMS, motivation, HTML5, independent work of students.

H5P (HTML 5 package) is a plugin for web browsers and web platforms, in particular LMS Moodle (learning management system, virtual learning environment), which allows you to create interactive content and assignments based on presentations, videos, audio, texts, images, games and quizzes, etc. The purpose of this work is to consider the functionality of H5P and observe the implementation of H5P tools in teaching the subject of biophysics for independent (asynchronous) work of students. The paper examines the relationship between the use of H5P in the teaching process, student motivation and the development of their skills in the subject of biophysics. The study is based on a survey of master's program students in a university context and an analysis of the effectiveness of their studies. The results show that the use of H5P in biophysics teaching had a relative impact on students' motivation and has the potential to influence the effectiveness of their biophysics skill development. In the course of the work, it was formulated that within the framework of synchronous and asynchronous teaching of biophysics, the use of H5P provides students and teachers with endless opportunities to study the subject in a fun, interactive, attentive and positive way.

Introduction Teaching medical students biophysics is challenging in the context of transformational learning. The main problems are not in the biophysics science, but the entrance exams are effective in the training of different level groups of students in chemistry and biology, at great time and energy costs in planning classes, and in evaluating results.

That the teaching context has changed rapidly over the past two years, this is to both face-to-face and online teaching. it's having a huge impact: today we all live in an unexpectedly digital environment and can't do it. Imagine teaching without the Internet,

Thetas is developing virtual learning platforms (LMSs), teaching methods are becoming increasingly diverse, and students' independent work is increasingly integrating traditional classroom or extracurricular and digital work patterns

The focus of teachers and listeners is on maximizing interactivity. In addition to the effectiveness of the learning process and technology use, teachers around the world are expected to continue to use technology in everyday teaching, whether they are ready or not.

Students constantly need the oil grade to stimulate their internal motivation and maintain their external motivation. Effective teaching of biophysics using technologies is not easy as teachers need to visualize and implement educational design and teaching matrix, opinion feedback assessment approaches, etc. Communication in online learning (via web conference

programs) happens "live," the teacher has the opportunity to communicate with students using self-proven models in classroom teaching, and also encourages students more. . At the same time, there is a question of how to provide interactivity in an asynchronous format, when students are doing their homework or engaging in independent learning, how much is the need for interactivity in such cases and whether it helps to increase students' motivation. The purpose of this work is to analyze ways for students to maintain their interest in studying biophysics using interactive learning materials and digital tools during their independent extracurricular work, because the number of classroom hours in science is much more limited in bachelor's programs in Biophysics. Thinking about how many tools will be in the teaching process today is that students will tire out, both when there are no changes in the use of interactive elements and when the elements are actively diverse, digital literacy or students' attention has been observed to be unable to cope. The teacher's task is to use a variety of digital devices to teach H5P (HTML5 package) (H5P. Get started URL: <https://h5p.org/getting-started>) free and open source software that can be used to create interactive content for the Internet. Moodle, which is used by many European countries and many Russian Federation universities to provide multimedia support for the learning process, is integrated into the Education Management System (LMS) and brings together a broad spectrum of simple education in one place. to encourage students to learn outside the classroom, use tools that have the functions of monitoring and evaluating the learning process and can be used as an addition to classroom teaching. H5P product set presentations, interactive videos, games for teachers with no programming knowledge allows you to easily create interesting educational content such as tests, quizzes, etc. In addition, H5P is defined as innovative, practical and easy-to-use software that teachers and students can use to teach and study biophysics. Different forms of interfaith education offer different opportunities and opportunities not only for teachers but also for students.

Education based on information and communication technologies supports traditional teaching strategies and methods. In particular, in studying subjects with practical workshops, it is necessary to expand the study of practical skills outside the scope of bio-science classes. Encourage students to study at home according to the program. H5P's rich functionality is designed to encourage students to learn both online and offline, where teachers are helped by digital technology students can evaluate their understanding of course materials or create a digital, interactive alternative to traditional classroom and homework. If the learning process is interesting, it encourages students to participate actively in it and allows them to participate actively, in turn, to develop skills in biophysics. The primary purpose of use in digital media training and teaching is to increase students' motivation, as mentioned above. Teaching biophysics in medical education also applies to the use of H5P: the use of this platform is expected to increase students' motivation and involvement in study, and an increase in motivation, in turn, can improve students' results in learning knowledge. Students in biophysics achieve good results in mastering practical skills in biophysics, but students with low motivation can also achieve good results.

H5P "users" evaluate the technology and define the possibilities and limitations of applying it in the teaching context. The main objectives of this work:

- 1) H5P platform tools review.
- 2) the use of H5P in performing homework, monitoring the link between student motivation and their results.
- 3) describe the possibilities and limitations of the introduction of interactive technologies in asynchronous education.

The concept of a biophysics course at a bachelor's degree in medicine universities shows that during the course, students read, analyze, analyze the results obtained on the subject. Current topics of medical science of students and information in medicine much attention will be paid to their practical work in technology. Course materials for classroom (synchronous) and home (asynchronous) work were uploaded to the Moodle system.

This study explored the quality: the diverse tools and functions available in H5P, the use of H5P in biophysics training, the nature of the connection between information technology and student motivation in medicine, as well as students' achievements in mastering practical skills. from the perspective of opportunities and restrictions to improve the effectiveness of the teaching process. In terms of functionality, H5P provides an innovative solution for teachers who seek to create an active learning environment for students and can be used to create and develop any learning material that depends on the educational goals in science. In addition, materials on H5P are convenient and available to teachers and students on computers and mobile devices at any time of the day provides access outside the university at any time. Columnar presentation of information - similar materials or types of content with a common theme are combined to ensure a consistent learning process; almost all available H5P tools/content types can be combined; Network scenario: dilemmas, independent learning scenarios and other types of adapted learning, including the creation of many H5P tools for all types of content; Interactive book: small courses, books or tests that combine large volumes of interactive content on several pages such as interactive videos, questions, course presentations, and more; At the end of the book is a summary of the student's points received throughout the book. Technological content tools: Virtual travel simple images create an interactive environment that can be enriched with interactive elements such as text, videos, audio and H5P questions; Users will have the impression of moving between environments or different perspectives in the same environment; AR Scavenger (extended reality): Extended reality with 3D models or H5P exercises; Markers similar to QR codes are specified, students can scan using a camera on their devices, and these markers will launch 3D models and interactions with them. 1.2. In the courses, the modern information and communication technologies for masters and biophysics for bachelor's degrees have become convenient and consistent with the objectives of the course, based on text content, H5P tasks, game content, video and audio content.

Scientific text - to work with research articles, assignments with text content were used, where you can define certain linguistic units (set words), comment on the text (essay, structure line), write review (Cornel notes, summary), analyze text structure (sort paragraphs).

Audio content of game type assignments (flesh, crossword, drag and drop, memory game) to expand vocabulary, teach course vocabulary, and freely memorize was aimed at facilitating. In addition, grammatical practice has been preserved in this way. Video tasks (interactive video) were video episodes on course topics with established questions to understand what was being watched. These tasks were directed to expand their knowledge of the topic, teach them the ability to listen, and see and master the material from the questions installed was aimed at controlling the process. Voice assignments (audiographers) assign students the task of either detailing their opinions on the subject or analyzing orally analyzing the scientific literature they have read. 1.2. Views worth reasoning from the point of view of observations about the use of H5P interactive for independent work, the relationship between student motivation and academic activities appeared. The advantages of using H5P in independent work of masters and bachelor's degrees in modern information and communication technologies and biophysics courses by masters and students were: attracting the attention of students, maintaining their interest, assimilation, assisting in consolidation, memorabilia material and monitoring function by the teacher we can additionally note. If the size of all students is in the same place as homework and is carried out at least according to certain quality standards. According to the survey, it turned out that 85% of the students were interested in testing their land H5P tools. Similar results are recorded in attracting students' attention to homework and classes in general. Synchronize In classroom or evening online education, the material provided as a homework as a homework assignment is not taken into account on the students' side if it is distracted by daily anxiety and academics moods using interfaith content as a means of attracting the attention of all students from the land during the course, as a rule, beyond the classroom because of training, he neglected homework.

As for motivation, it should be noted that performing the y in the auditorium or online mode with the instructions of the teacher is a supportive chase for his technic assistance and process, as well as arousing sincere interest and greater participation in a group of students. But in the opinion of the students, according to the implementation of similar tasks did not significantly contribute to increasing their internal or jealous motivation. For greater motivation, 48% of all students received good or excellent grades for the course. However, it turned out to be difficult to control whether the form of extracurricular assignments directly affects the results of the study. This aspect requires further research. In conclusion, however, H5P has a positive impact on the effectiveness of students in the learning process as a whole and the involvement of them in the learning process. Additional advantages of using H5P in teaching biophysics sciences for modern information and communication technologies and bachelor's degrees were the adaptation and ease of use of the course to goals and tasks. 1.2. Course research participants focused on the possibilities of using H5P and restrictions on asynchronous education. There are a lot of opportunities listed by students, and students have expressed interest in this matter.

H5P platform tasks for self-study and self-development with cute, dynamic, motivational, playful, innovative, meaningful, feedback. Students positively assess the clarity of the material, visualize, work with texts if necessary, and create written materials; return to assignments and revise them, modify them, and use them as references; variety versatility of tools for educational tasks.

It is possible to note the direction of attention by teachers as additional opportunities; convenient formation of tasks and goals; novelty; versatile for synchronous and asynchronous learning; diversity of types of work.

However, some limitations were found in tracking the use of H5P. First of all assignments should be given within a specified period of time at the appropriate time, with initial instructions, and, best of all, with a demonstration of the assignment in the classroom or during a web conference. Students note that despite all the intuitiveness of completing tasks, the teacher's review and detailed description of the execution algorithm really focus on the task without thinking about the form of performance to focus on performance. Secondly, it is important to take into account that all activities in H5P depend on Internet access, so not only for the teacher, but also for the students, adequate Internet communication is a prerequisite for students to participate in completing assignments and achieving successful results. Data analysis revealed that students were faced with difficulties due to internet connectivity, and when the system freezes, their results of work were not always saved. Being forced to perform the same task again due to internet connectivity can reduce students' interest and affect their outcomes can do it. Third, H5P tools should not be used much (it is important to take into account how many are not "many" in each individual class), because students do not feel comfortable with the technical part of completing assignments. Fourth, part of the students complained about the inconvenience of performing tasks on a smartphone, and some were different from using computer technology in the learning process basically, they preferred to carry out tasks on paper. The abstract. H5P interactive content tools integrated into LMS Moodle have sufficient didactic flexibility because this application has a large library of content types that cover almost all the different tasks that can be invented for educational purposes - now more than forty. Features available in H5P diversity makes the teaching and teaching process less monotone and encourages teachers and students to be more creative in learning.

There are many benefits to using H5P in the training process. One is to stimulate students' cognitive activity without cognitive overload. In addition, interactive learning materials can generate students' interest due to the diversity of resources provided. The use of H5P also promotes students' independence in mastering the program. H5P helps to increase students' interest in science and draws their attention to the material being taught, master the program and remember the material discussed will help you stay. The results of the data analysis show that the use of H5P in teaching modern information and communication technologies for masters and

biophysics courses for bachelor's degrees has an impact on student motivation and the results of pirated students mastering practical skills in courses showed. However, this conclusion requires further research and evidence.

Generally speaking, using H5P for homework is a positive option for making students' extracurricular activities more attractive through interface. On the other hand, the integration of digital resources from the outside, interfaith assignments in junior high school to a modern English course because of the inadequate skills and skills of teachers in integration, classroom training is inadequate and does not appear to be fully implemented. Because there is currently little research on H5P in the context of the university, this work can be an incentive for further research, especially media didactics - how to develop multimedia tasks, from which in the learning environment how to simplify usage, formulate problematic statements and structure the learning process, how to evaluate and effectiveness of tasks. Thus, the presence of a technical framework in the LMS Moodle and/or H5P view does not have a stable, successful positive effect on direct learning, although they are necessary conditions for successful use of Web 2.0 tools.

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