

USE OF SOFTWARE IN PHYSICS LEARNING PROCESS

Farmonov Utkir Mirzaqobilovich, Isoqov Shohrux

A.Qodiriy nomidagi Jizzax Davlat pedagogika instituti, Jizzax, O'zbekiston.

e-mail: farmonov-81@mail.ru

Annotation: *This article describes the content of the organization of educational processes in the field of physics and astronomy on the basis of modern software. Opportunities to increase student creativity on the basis of modern tools have been identified.*

Keywords: *Virtual stand, Application package, MS Access program, information technology, hypertext applications*

Аннотация: *В статье раскрыто содержание организации учебного процесса в области физики и астрономии на базе современного программного обеспечения. Определены возможности повышения творческих способностей студентов на основе современных инструментов.*

Ключевые слова: *виртуальный стенд, пакет приложений, программа MS Access, информационные технологии, гипертекстовые приложения.*

Annotatsiya: *Ushbu maqolada fizika va astronomiya fanlari bo'yicha o'quv jarayonlarini zamonaviy dasturiy ta'minot asosida tashkil etish mazmuni yoritilgan. Zamonaviy vositalar asosida o'quvchilar ijodiyotini oshirish imkoniyatlari belgilandi.*

Kalit so'zlar: *Virtual stend, Ilovalar to'plami, MS Access dasturi, axborot texnologiyalari, gipermatnli ilovalar*

Today, computer technology has created a wider range of opportunities for the introduction of modern methods, techniques and software tools of innovative technologies in the education system.

One of the most pressing issues is that all students studying in higher education institutions should be able to master, master and apply computer and information technologies.

Especially in the course of the lesson, linking the subjects together makes it easier to understand and master the topic covered. Any innovation in the field of science, design and production network cannot be done without complex mathematical calculations. Facilitate such calculations

Many modern and universally integrated systems, ie a package of applications are being created. The application package includes a wide range of software developments aimed at improving the practical level of computers through their use in conjunction with application and system software.

Modern software tools Physics and astronomy play a special role in the formation of students' knowledge, worldview, imagination in the educational

process. Because the direction of Physics and Astronomy is focused on the study of many subjects, the mastery of new techniques and technologies, the media.

At present, computer and information technology tools are widely used in general and specialized sciences. Computer and information technology tools allow to better master and master the learning materials, to remember their content for a long time, to consolidate knowledge, to increase students' interest in the subject.

Any innovation in the field of science, design and production network can not be realized without complex technological processes. In order to facilitate such processes, many modern and universal integrated systems, ie a package of applications are being created. The application package includes a wide range of software developments aimed at improving the practical level of computers through the use of both application and system software.

At present, virtual stands are successfully used in higher education institutions. What is a virtual stand and what is its role in increasing the effectiveness of education? The question naturally arises.

A virtual stand is a practical stand or training workshop, a tool of educational information technology that helps to strengthen the theoretical knowledge of students, to develop the necessary skills in a particular direction through computer programs and technologies. Virtual stands in the field of Technology allow each student to "teach" their own introductory indicators on technology, to control their knowledge. In particular, in the conduct of laboratory work, the problem of wasting time in understanding it in the necessary order, etc., is eliminated at the expense of computer efficiency.

It is especially important to save financial resources. Physics and astronomy specialties and specialty sciences can place dozens, sometimes hundreds, of laboratory work on a modern simple compact disc in laboratory work. Now it is not difficult to calculate how cheap such a virtual laboratory stand will cost. In addition, along with them, it is possible to provide general education institutions. Having an Internet connection gives even better results.

As a result of the introduction of virtual stands in the educational process, a higher quality of the educational process in the training of specialists than traditional education will be ensured. This is achieved through the use of automated instructors and test takers, systems, test assignments and specialized training manuals consisting of questions for self-examination, rapid updating of the methodological framework of the educational process.

In addition, many programs are currently being developed to create hypertext applications. For example: HelpWrirer is a constructor running Windows. MS Access program for Windows. These programs include the control

of the current mastering of students, the distribution of the workload of teachers on the department, and so on. The process of creating electronic educational publications is becoming a leading area of activity of the university in the field of education. The creation of e-learning publications involves complex didactic requirements, but modern information technology offers a wide range of possibilities in solving this problem. It is necessary to pay attention to the following requirements:

- Demonstration of the course in the department;
- full access to content sections;
- use of various types of information;
- flexibility of the learning material in terms of learning features.

Typically, e-learning publications consist of a set of training, control, modeling and other programs that are placed on the memory devices of personal computers and reflect the main methodological content of the subject. E-learning publications complement simple textbooks and are more effective in the following situations.

- instant feedback;
- allows you to quickly find information that is difficult to find in ordinary textbooks;
- Significantly saves time when repeatedly referring to hypertext comments;
- Demonstrates, narrates, models, etc. together with short text;
- allows you to quickly check the knowledge on a particular topic.

In conclusion, it should be noted that the use of programmed teaching aids in the educational process of Physics and Technology education, based on the above interpretations: teaches the order of educational processes, develops creative skills and performing supervisory functions.

With the help of computer training software, students are able to acquire new knowledge in accordance with the level of knowledge they have acquired. The use of computer drawings in the process of developing creative skills in them serves as a tool to facilitate the development of technological documentation for the creation of products that describe the technical solutions of creative inventions.

References:

1. Farmonov, U. (2020). Teaching of physics for students of natural direction with innovation technologies. *Физико-технологического образование*, (1).
2. Farmonov, U. (2020). Geografiya yo'nalishi talabalariga fizikani o'qitish jarayonini innoyatsion texnologiyalar asosida takomillashtirish. *Физико-технологического образование*, (1).

3. Togaev, X., Doniyorov, S., Farmonov, U. M., Irmatov, F. M., & Boboqulov, Q. S. (2016). On the role of the physical concepts of the disclosure of the secrets of music. In *The Eighth International Conference on Eurasian scientific development* (pp. 184-189).
4. Bekmirzaev, R. N., Igamkulov, Z. A., Tuugalov, F. K., Khudajberdiev, G. U., Farmonov, U., Shukurov, E. K., ... & Olimov, K. (2004). Rapid distributions of protons in (d, α , C) TA-interactions at 4.2 GeV/S on nucleon; Bystrotnye raspredeleniya protonov v (d, α , C) TA-vzaimodejstviyakh pri 4.2 GEhV/S na nuklon.
5. Togaev, X., Doniyorov, S., Farmonov, U. M., Irmatov, F. M., & Boboqulov, Q. S. (2016). On the role of the physical concepts of the disclosure of the secrets of music. In *The Eighth International Conference on Eurasian scientific development* (pp. 184-189).
6. Bekmirzaev, R. N., Igamkulov, Z. A., Tuugalov, F. K., Khudajberdiev, G. U., Farmonov, U., Shukurov, E., ... & Olimov, K. (2004). Rapid distributions of protons in (d, α , C) TA-interactions at 4.2 GeV/S on nucleon.
7. Taylanov, N., Bekmirzaev, R., Hudoyberdiev, A., Samadov, M. K., Urinov, K. O., Farmonov, U., & Ibragimov, Z. K. (2015). Dynamics of magnetic flux penetration into superconductors with power law of voltage-current characteristic. *Uzbekiston Fizika Zhurnali*, 17(3), 126-130.
8. Фармонов, У. М. (2019). Методика преподавания предмета физики студентам направления естествознания. *Образование и наука в России и за рубежом*, (16), 314-318.
9. Orishev, Jamshid (2021) "Project for training professional skills for future teachers of technological education," *Mental Enlightenment Scientific-Methodological Journal*: Vol. 2021 : Iss. 2 , Article 16.
10. Orishev, J. (2020). Глобаллашув даврида педагогик масъулияти . *Научно-просветительский журнал "Наставник"*, 1(1).
11. Abdaminov, A. B., Bekmirzaev, R. N., Bekmirzaeva, X. U., & Mamatkulov, K. Z. (2019). SEARCH AND RESEARCH MULTIBARYON CLUSTERING IN HADRON-NUCLEAR COLLISION AT HIGH ENERGY. In *Труды конференции-конкурса молодых физиков* (Vol. 25, No. S2, pp. 8-10). Общество с ограниченной ответственностью Издательский дом Московского физического общества.
12. Sultanov, M. U., Nodirov, G., Xalilova, X., Aliqulov, S. S., Bekmirzaev, R. N., Joniqulov, A., & Bekmirzaeva, X. (2012). Kinematical characteristics of secondary charged particles in CC and CTa interactions at 4.2 GeV/s per nucleon.

13. Bekmirzaev, R. N., Bekmirzaeva, X. U., Khudoyberdiev, G. U., Mustafayeva, M. I., & Nabiev, B. E. (2020). Formation of Δ^0 -isobar in nC-collisions at 4.2 GeV/c. *Physics of Complex Systems*, 1(3).
14. Bekmirzaeva, X., & Xudoyberdiyev, Q. (2021). Атом тарихига бир назар. *Физико-технологического образование*, (5).
15. Sultanov, M. U., Daminov, F., Aliqulov, S. S., Bekmirzaev, R. N., Bekmirzaeva, X., & Kholbutaev, S. (2012). Dependence of formation of secondary protons and π^- -mesons in dC, α C and CC-interactions at 4.2 A·GeV/s on the degree of centrality.
16. Bekmirzaev, R., Bekmirzaeva, X., Abdaminov, A., & Mustafaeva, M. (2021). Comparative analysis of various kinematical characteristics of protons in n12c and p12c collisions at 4.2 GeV/c. *InterConf*.
17. Xursanoy, B., & Marjona, M. (2021). Comparison of some properties of charged pions in p12C and n12C collisions at 4.2 GeV/c. *Physics of Complex Systems*, 2(3), 132-138.
18. Sultanov, M. U., Daminov, F., Aliqulov, S. S., Bekmirzaev, R. N., Bekmirzaeva, X., & Kholbutaev, S. (2012). Dependence of formation of secondary protons and π^+ -mesons in dC, α C and CC-interactions at 4.2 A {center_dot} GeV/s on the degree of centrality.
19. Bekmirzaev, R., Bekmirzaeva, X., Sultanov, M., & Mustafaeva, M. (2021). Зависимость множественности протонов и пионов от их степени центральности в dc-соударениях. *Физико-технологического образование*, (2).