



Statistical Analysis of The Use of Electronic Learning Guides in Higher Education Institutions.

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ABSTRACT

This the article presents the statistics of the increase in educational efficiency when teaching using electronic textbooks in higher education institutions

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Enter. The development of modern computer technologies makes it possible to introduce multimedia teaching aids for teaching subjects into the educational process. Such manuals do not replace books, but they have a number of advantages: they are organized, controlled and adapted to the individual characteristics of the student.

Modern education cannot be imagined without computers and the Internet, which are used by many teachers and students. Multimedia tools have great potential because of advantages such as visual presentation of material, rapid feedback, and the ability to regularly revise the textbook as new information becomes available.[1]

The use of the latest information technologies is becoming more and more important in various aspects of human activity, including in the field of education. Both in our country and abroad, the computerization of the educational process is considered as one of the actual factors of organizing the teaching of a particular subject.

Materials and methods. An electronic resource consists of computer-controlled materials, including materials that require the use of a peripheral device attached to a computer (such as a CD-ROM player); objects may or may not be used interactively. There are two types of electronic resources: data (information in the form of numbers, letters, graphics, images, and sounds, or a combination thereof) and programs (instructions or procedures for performing certain tasks, including data and software processing (for example, online services, interactive multimedia).[2]

Electronic resources are becoming very important today as they are more relevant and can be accessed from anywhere, crossing all geographical boundaries. Such resources add value to research and development. Types of electronic resources and services available in libraries:

- Electronic magazines
- Scientific databases

- Electronic books
- electronic training manuals
- OPAC (Online Catalog for Public Access)
- CD-ROMs
- Email and bulletin board
- Hybrid digital collections
- Internet gateways and search engines

The role of electronic resources and services in the dissemination of knowledge.

The role of electronic resources and services is to disseminate knowledge for a specific purpose. They excel at providing information of current value and interest to the user community. Today, resources are the most important component of the information communication process. A strong e-book/e-journal database meets the requirements of maximum users. Efficiency is essential in the management of e-resources and services, without which the highest level of benefits cannot be achieved. Thus, in order to improve the level of profit from journals and scientific articles, it is desirable to organize and more effectively manage the department of electronic resources and services.

Discussion. The nature and effectiveness of the educational process largely depends on the selection of technical education resources.

Multimedia electronic textbooks are considered as one of the forms of organizing individual work of students. Currently, many computer programs are used in the educational process and teaching.

Educational multimedia programs support the expanded structure of the content of the educational material, the listener's independent selection and transition of full or shortened educational options.

education is a product and a powerful accelerator of scientific and technical progress, so the urgency of introducing innovations into education undoubtedly increases the quality and efficiency of the educational process in education.

many experts, new information and educational technologies based on computer tools can increase the effectiveness of the lesson by 20-30%. The introduction of computers into the field of education marked the beginning of a revolutionary change in traditional teaching methods and technologies and the entire education industry. Communication technologies played an important role at this stage: telephone communications, television, space communications, which were mainly used to manage the educational process and additional education systems. The choice of reasonable and optimal solutions for the integration of information and educational technologies from a systematic point of view is primarily based on the analysis of the effectiveness of teaching or learning based on the new integrated technology, that is, the interaction between the teacher and students based on the evaluation of the effectiveness of the relationship.

of this interaction is the creative activity of the teacher and students both in the educational process and in the educational process, which largely affects not only the professional skills of the teacher and the knowledge of students, but also also depends on emotional mood.

The main goal is the competent use of innovative information technologies to present various types of information (graphics, sound, video animation, etc.) that are of general subject matter importance and are being gradually implemented for effective operation. [3]

Results. Educational efficiency increases by 20-30% through multimedia tools. Based on the above ideas, we created an electronic multimedia training manual on "computer support" in higher education institutions and conducted pilot tests. Through pilot studies, we have achieved an increase in educational efficiency.

Experimental test work during the 2022-2023 academic year to increase the effectiveness of the knowledge levels of the 2nd group students studying "5110100-Mathematics and Informatics" at the Faculty of Physics and Mathematics of the Kokand State Pedagogical Institute in the subject "Computer supply" was carried out according to

At the second stage, the groups that need to be tested were determined. The students' knowledge and skills of computer equipment were studied using test questions, oral questions and answers, using various methods, and groups with almost equal levels of knowledge were separated.

06.21-MI and 04.21-MI groups were selected for experimental work, based on the scores of the students in the lectures on "Computer maintenance".

06.21-MI was selected for the experimental group, and 04.21-MI was selected for the control group.

The main goal of our experimental work is to increase the learning efficiency of students as a result of the use of educational and electronic multimedia instructional manuals in the teaching of computer science, to improve the efficiency of the lesson and independent study during the course of the lesson and through independent use. is to achieve higher learning efficiency.

As a result of the evaluation of the knowledge of the students of Kokan State Pedagogical Institute in the field of computer support, the following results were achieved:

Groups	Number of students	Evaluation criteria		
		5	4	3
Experimental group	28	9	11	8
Control group	28	5	11	12

Statistical reports according to these results:

Mean value in experimental and control groups:

$$\bar{X}_T = \frac{1}{28} [9 * 5 + 11 * 4 + 8 * 3] = \frac{1}{28} (45 + 44 + 24) = \frac{113}{28} = 4.03$$

$$\bar{X}_H = \frac{1}{28} [5 * 5 + 11 * 4 + 12 * 3] = \frac{1}{28} (25 + 44 + 36) = \frac{105}{28} = 3.75$$

Efficiency coefficient:

$$\eta = \frac{4.03}{3.75} = 1.07$$

Statistical reports were obtained according to these results. It was confirmed by statistical methods that our method is more effective than the method used in the control groups.

Criteria	Types of control	Experimental group	Control group	Performance indicator
Arithmetic average value of grades	Test	$X_T^* = 4.03$	$X_H^* = 3.75$	$\eta = 1.07$

As can be seen from this diagram, the research work carried out in the experimental group is effective. It was proven using statistical methods that the efficiency index was 1.1 times higher than the control group.

Summary. Computerization of education is a necessary trend of the present time, "Should multimedia be introduced in educational institutions or not?" the question has been positively resolved for a long time.

The use of multimedia tools in the educational process allows to change the character of students' educational and cognitive activities, to activate independent work of students with various electronic tools for educational purposes. The most effective use of multimedia tools in the process of mastering basic knowledge, skills and competences by students.

Effectiveness of this training is achieved only if the teacher himself realizes and implements such educational prospects, uses modern methods and forms of education in his practice.

References.

1. Saidov, M., & Isroilov, S. (2023). To'rtinchi tartibli bir jinsli bo'lmagan tenglama uchun aralash masala. Research and implementation.
2. Isroilov, S. (2023). PEDAGOGIK FAOLIYATDA TA'LIM METODLARI VA INNOVATSION METODLARNING O'RNI VA AFZALLIK TOMONLARI. Engineering problems and innovations.
3. O'ktamovich, B. I., Oribjonovich, Q. X., Najimidin o'g, N. M. R., & Abdugoffor o'gli, X. A. (2023, April). OTM Talabalarida Pedagogik Maxoratini Rivojlantirish Masalalari. In Conference on Applied and Practical Sciences (pp. 100-104).
4. Abdullajonova, N. (2023). PYTHON DASTURLASH TILIDA CHIZIQLI REGRESSIYA TASHKIL QILISHNING SODDA USULLARI. Engineering problems and innovations.
5. Sulstonov, S. (2023). MASHINALI O'QITISH TUSHUNCHASI VA MASHINALI O'QITISH JARAYONINING UMUMIY QADAMLARI. Engineering problems and innovations.
6. Sulstonov, S. (2023). IMPORTANCE OF PYTHON PROGRAMMING LANGUAGE IN MACHINE LEARNING. International Bulletin of Engineering and Technology, 3(9), 28-30.
7. O'ktamovich, B. I., Dilshodjon, U. A., & Mirzaraxmon o'g'li, X. R. (2022). MUSTAQIL TA'LIMNI TASHKIL ETISH VA NAZORAT QILISH TEXNOLOGIYALARINI TAHLILI VA UNGA TAVSIYALAR. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 2(3), 72-74.
8. Bilolov, I. (2023). ORTA MAKTABLARDA LEARNINGAPPS. ORG DAN FOYDALANIB DARSLARNI TASHKIL ETISH. Евразийский журнал технологий и инноваций, 1(10), 163-167.
9. Абдурахмонов, С., & Билолов, И. (2018). ЗАМОНАВИЙ ЭЛЕКТРОН ТАЪЛИМ РЕСУРСЛАРИНИ ЯРАТИШ БЎЙИЧА ТАВСИЯЛАР. Scientific journal of the Fergana State University, (5), 4-4.