Virtual Conference 2020

London, U.K.

Proceedings of

Global Technovation

2nd International Multidisciplinary Scientific Conference

December, 28th 2020

Conference Theme

Technology
Science
Management
Humanities
Education
Social Sciences

Send Your Manuscripts to:
conferencepublication2020@gmail.com

www.conferencepublication.com

DIDACTIC POSSIBILITIES OF USING MULTIMEDIA SOFTWARE IN THE EDUCATIONAL PROCESS

Yusuf Jamilov
Basic doctoral student (PhD) of the Department of "Physics",
Bukhara State University

Аннотация:

Мақолада мультимедиа, мультимедиа маҳсулотлари, мультимедиа технологиялари ва мультимедиа воситалари ёрдамида муқобил энергия, муқобил энергия манбалари ва қурилмалари, улардан халқ хўжалигида фойдаланиш, таълим жараёнида муқобил энергияга оид тушунчаларни ўқитишнинг ўрни ва дидактик имкониятлари ўрганилган. Таълим олувчиларда муқобил энергияга оид компетенцияларни шакллантиришнинг педагогик асослари мазмунида мультимедиали дастурий таълим воситаларидан фойдаланиш, ўқув машғулотларини ўтказишда электрон дарсликлар, виртуал лаборатория стендлари, 3D анимациялар ва ўқув тренажорларидан фойдаланишнинг дидактик имкониятлари таҳлили келтирилган.

Таянч сўзлар:

мультимедиа, мультимедиа маҳсулотлари, мультимедиа технологиялари, мультимедиа воситалари, муқобил энергия, мультимедиали электрон дидактик восита, электрон дарслик, ўқув тренажорлари, виртуал лаборатория стендлари, 3D анимация, дастурий таълим воситалари.

Аннотация:

В статье исследуются роль и дидактические возможности обучения альтернативным источникам энергии, альтернативным источникам энергии и устройствам, их использованию в народном хозяйстве, концепция альтернативной энергетики в образовательном процессе с использованием мультимедиа, мультимедийных продуктов, мультимедийных технологий и средств мультимедиа. Анализ дидактических возможностей использования мультимедийных программных средств обучения, электронных учебников, виртуальных лабораторных стендов, 3D-анимаций и тренажеров в содержании педагогической основы формирования у студентов компетенций в области альтернативной энергетики.

Ключевые слова:

мультимедиа, мультимедийные продукты, мультимедийные технологии, мультимедийные инструменты, альтернативная энергия, мультимедийный электронный дидактический инструмент, электронный учебник, тренажеры, виртуальные лабораторные стенды, 3D-анимация, программные средства обучения.

Abstract:

The article explores the role and didactic possibilities of teaching the concept of alternative energy, alternative energy sources and devices, their use in the national economy, the concept of alternative energy in the educational process using multimedia, multimedia products, multimedia technologies and multimedia tools. The analysis of the didactic possibilities of using multimedia software teaching aids, electronic textbooks, virtual laboratory stands, 3D animations and training simulators in the content of the pedagogical basis for the formation of competencies in alternative energy in students.

Keywords:

Multimedia, multimedia products, multimedia technologies, multimedia tools, alternative energy, multimedia electronic didactic tool, electronic textbook, training simulators, virtual laboratory stands, 3D animation, software training tools.

Multimedia is the ability to work with different forms of information on a computer: color graphics, dynamic effects in text and graphics, sound output and synthesized music, animation, as well as full-length video clips, and even videos.

A multimedia product is an interactive, computer-generated product that can play music, include video clips, animations, a gallery of pictures and slides, various databases, and more.

The emergence of multimedia systems has led to the development of information technology and its widespread application in science, education, trade (business) and medicine.

Multimedia software learning tools are of particular importance in the learning process with the following most important aspects:

- organization of differential and individual learning process;
- assessment of the learning process, feedback;
- self-monitoring and self-correction;
- demonstrate the studied disciplines and their dynamic process;
- use of computer and information technologies such as animation, graphics, animation, sound in science;
- student - to develop strategic skills for students to master the subject, etc.

It also paves the way for the practical side of multimedia tools, their use in the educational process and the creation of a database and animated presentations for the future educational process in the education system.

Distinctive features of multimedia include:

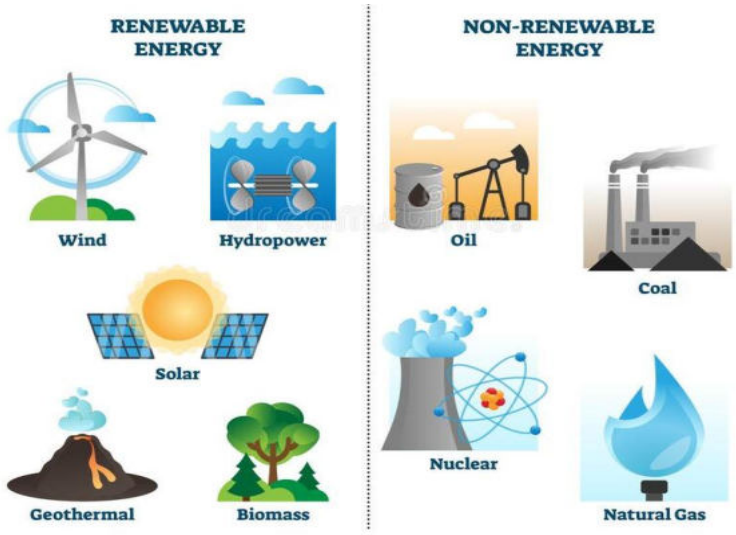
- integrates different types of information: traditional (text, tables, decorations, etc.), non-traditional (speech, music, video clips, TV footage, animation, etc.), in one software product;
- work at a certain time, unlike text and graphics, which by their nature are static, audio and video signals are considered only at certain intervals of time. Processing and displaying video and audio information on a computer requires fast CPU mobility, data bus bandwidth, RAM and video memory, large capacity external memory, volume, and approximately twice the exchange rate across computer input and output channels;
- "human-computer" is a new level of interactive communication, in which the user receives a much wider and more comprehensive information in the process of communication, which allows to improve the conditions of education, work or leisure [1].

The use of multimedia software provides a number of benefits for teachers. This is because science-themed audio programs, illustrations, animations (presentations), films made in the form of animations, animations will be interesting news for the reader, attract the reader's attention and increase the effectiveness of education.

In particular, the multimedia software educational tool plays an important role in improving the quality and efficiency of education, providing students with in-depth knowledge of alternative energy sources and devices, their use in the national economy, the importance of using alternative energy sources in maintaining ecology and environmental cleanliness.

It should be noted that there are non-renewable and renewable (alternative) energy sources in nature. Non-renewable energy sources include oil, coal, natural gas and radioactive fuels from nuclear power plants. Examples of renewable (alternative) energy sources are solar energy, wind energy, running water energy, biogas, geothermal energy and other types of alternative energy [3].

The use of multimedia software tools in the process of alternative energy education, such as e-textbooks, e-problem sets, e-learning materials, virtual laboratory stands, 3D animations, e-learning simulators and computer control systems, significantly increase the motivation of students and the quality of education serves.



Picture-1. Renewable and non-renewable energy sources.

Practice shows that teaching students based on multimedia software learning tools is twice as effective and time-saving. Up to 30% of time can be saved by acquiring knowledge on the basis of multimedia software learning tools, and the acquired knowledge will be stored in memory for a long time. If students receive the given materials on a visual basis, the retention of information will increase by 25-30%. In addition, when learning materials are presented in an audio, video, and graphical form, the retention of materials increases by 75%.

References

1. Bent B.Andresen and Katja van den Brink. Multimedia in Education. UNESCO Institute for Information Technologis in Education. 2013. ISBN 978-5-7777-0556-3.
2. Tay Vaughan. Multimedia: Making It Work. Chapter 1: What Is Multimedia? 2011. ISBN: 978-0-07-174850-6/p.15.
3. H.O.Jurayev. Ways of Using Educational Materials on Alternative Energy Sources at Physics Lessons. Eastern European Scientific Journal. –Dusseldorf, 2017. № 2. –P. 83-86.
4. Жураев А.Р., Рауфова Н.Р. Методика использования программы Flash при обучении предмета технологии по направлению “Технология и дизайн” // “Academy” научно–методический журнал № 6 (33) / Россия, Москва. 2018. – С. 79 – 80.
5. Zhuraev A.R. Using Electronic Teaching Materials for Training Future Teachers // “Eastern European Scientific Journal”. Auris Kommunikations – und Verlagsgesellschaft mbH. Journal ausbage 1 – 2019. Germany. Pg, 432-435.
6. Жураев А.Р., Махсудова М.Д. Педагогические основы обеспечения непрерывности при обучении предмету технологии. “Проблемы педагогики” научно–методический журнал № 3 (35) / 2018 г. Россия, Москва с 25 – 27.
7. Zhuraev A.R. Types of education and importance of ensuring the coherence of education content in terms of subject. “Science and world” International scientific journal. № 7 (35) / 2016, Russia Volgograd. Pg, 67-69.
8. Sayfullayeva D.A., Juraev A.R., ToshevYu.N. Innovative project of preparation of students for professional activity. Научно-методический журнал «Вестник науки и образования». Москва, 2020 - г. № 19 (97). Часть 2. С 48 – 51.
9. Sayfullayeva D.A., Mirdjanova N.N., Saidova Z.Kh. Развитие профессиональных компетенций и творческих способностей студентов высших учебных заведений // Научно-методический журнал вестник науки и образования № 2020.19 (97). Часть 2.С.55
10. С.К. Каххоров, Ю.Ю. Жамилов “Формирование компетенций в области альтернативной энергетики с помощью программных средств обучения физическому воспитанию” // Роль