

Natalya H. Hancharuk¹, Svetlana A. Gancharova²

¹natalgon@rambler.ru; ²sgancharova@gmail.com

Belarusian State University of Culture and Arts,
Minsk, Belarus

THE ESSENCE OF MULTIMEDIA TEACHING TOOLS IN THE MODERN EDUCATIONAL PROCESS

The article clarifies the importance of digital media for education. The advantages of using digital media in the educational process are considered. This study is devoted to the organization of active learning using multimedia and the organization of various levels of interactivity. Finally, the paper provides recommendations for future researchers in this field.

Keywords: multimedia, teaching tools, media education, learning process, information technology in education, pedagogy.

Н. Г. Гончарик¹, С. А. Гончарова²

¹natalgon@rambler.ru; ²sgancharova@gmail.com

Белорусский государственный университет культуры и искусств,
Минск, Беларусь

СУЩНОСТЬ МУЛЬТИМЕДИЙНЫХ СРЕДСТВ ОБУЧЕНИЯ В СОВРЕМЕННОМ ОБРАЗОВАТЕЛЬНОМ ПРОЦЕССЕ

В статье уточняется значение цифровых медиа для образования. Рассматриваются преимущества использования цифровых медиа в учебном процессе. Исследование посвящено организации активного обучения с помощью средств мультимедиа и организации различных уровней интерактивности. Даются рекомендации для будущих исследований в этой области.

Ключевые слова: мультимедиа, средства обучения, образование, медиаобразование, информационные технологии в образовании, педагогика.

Nowadays effective teaching and learning are impossible without the use of various techniques based on Modern Information and Communication Technologies (ICTs) and innovations of the so-called ‘digital’ pedagogy. Within an information-educational environment, multimedia is one of the powerful tools that assist teachers to enhance their professional capacity and helps students to achieve their educational goals. Moreover, modern multimedia combined with social networks and open educational resources contribute to the achievement of one of the goals – to make quality education more accessible to all.

Recently, some significant trends have emerged as a result of the rapid development of the Internet as an information delivery system, some significant

trends have emerged. Educators have begun to experiment with new ways of using digital, multimedia from interactive teaching and learning tools.

With the advent of media, it became possible to talk about expanding the usual scheme of the communication process. Marshall McLuhan viewed the media as an extension of a person. Modern society is characterized by a multi-channel system for obtaining information. The peculiarity of the information society is that it creates a new InfoSphere. Today, screen interactions have become dominant in terms of human impact. A generation has already grown up for which the computer is included in the household environment, which forms consciousness from birth. Naturally, non-verbal language has become the main tool of the struggle for influence over the consciousness and intellect of a person.

There is such a direction as media education in pedagogy. United Nations Educational Scientific And Cultural Organization (UNESCO) explains that media education is connected with all types of media (print and graphic, sound, screen, etc.) and various technologies; it enables people to understand how mass communication is used in their societies, help to master the ability to use media in communication with other people; provides a person with knowledge of how: 1) analyze, critically comprehend and create media texts; 2) determine the sources of media texts, their political, social, commercial and/or cultural interests, their context; 3) interpret media texts and values disseminated by the media; 4) select the appropriate media to create and distribute their own media texts and gain an audience interested in them; 5) get free access to media, both for perception and for products [1].

One of the most important areas of application of information and computer technologies in education is the use of multimedia computer capabilities. The usage of multimedia teaching tools allows you to activate the learning process by making it clear and combining logical and imaginative ways of learning information. The interactivity of multimedia technologies provides a wide range of opportunities for implementing personality-oriented learning models.

Multimedia can be considered as a combination of various communication channels built into a coherent communicative experience, where the combination of various channels acquires unification as a medium. Multimedia as the integration of several multimedia elements (audio, video, graphics, text, animation, etc.) into a single synergistic and symbiotic whole gives the end-user more advantages than any of the multimedia elements individually.

From the point of view of systems theory, this also tells us that the overall efficiency of multimedia is better than any other component of it. The term “interactive multimedia” is a universal phrase to describe the new wave of computer software, which is mainly engaged in providing information. The “multimedia” component is characterized by the presence of text, images, sound, animation and video. Some or all of them are organized into some coherent program. The “interactive” component refers to the process of enabling the user to control the environment, usually using a computer.

Organizations prefer online training, given that using this method, employees can learn in less time, at less cost and more efficiently than using other methods. It has been found that integrating multimedia into course delivery certainly adds to the advantages.

Thus, in pedagogy the definition of multimedia can be considered as a means of teaching and communication and, most importantly, as a tool for building learning. In educational situations, multimedia products and online services can be used creatively and reflexively.

In some studies, multimedia interactivity has been considered as a means of teaching and visualization to simplify complex educational materials. Studies of blended learning have shown that student engagement and satisfaction are higher in courses that combine traditional classroom activities with online tools. Researchers argue that the process of choosing what to present is just as important as how it is presented” since students learn in different ways, should provide a variety of educational activities from which the learner can choose [3].

The effectiveness of using interactive multimedia in teaching is explained by theories: Constructivism Theory and Sensory Stimulation Theory and The concept of learning to learn. Constructivism Theory holds that learning is an interactive process in which learners adapt their mental frameworks to accommodate new information. Sensory Stimulation Theory suggests that learning should be based on a multisensory experience and that visual learning is often most effective. Sensory stimulation theory encourages the use of multimedia content to engage learners with a single topic in different ways [3].

It should be borne in mind that Learning in order to learn requires that a person knows and understands their preferred learning strategies, the strengths and weaknesses of their skills and qualifications, and is also able to look for opportunities for training and professional training, as well as recommendations and support available for organizing their own training, including through effective time and information management, both individually and in groups.

Dr. Ramesh C. Sharma and Dr. Sanjaya Mishra in their research consider that multimedia in connection with the main pedagogical tasks and organizational realities. They emphasize that the successful implementation of multimedia in training includes organizational changes, which is reflected in the costs associated with the acquisition of appropriate technologies and human resources.

The researchers present seven principles of multimedia design: Individuals learn, retain, and transfer information better:

1. When the instructional environment involves words and pictures rather than words or pictures alone (multimedia principle);
2. When the instructional environment involves auditory narration and animation rather than on-screen text and animation (modality principle);
3. When the instructional environment involves narration and animation rather than on-screen text, narration, and animation (redundancy principle);
4. When the instructional environment is free of extraneous words, pictures, and sounds (coherence principle);

5. When the instructional environment involves cues, or signals, that guide an individual's attention and processing during a multimedia presentation (signaling principle);

6. Where words or narration and pictures or narration are presented simultaneously in time and space (contiguity principle);

7. Where individuals experience concurrent narration and animation, in short, user-controlled segments, rather than as a long continuous presentation (segmentation principle) [2].

Speaking about interactivity in the educational process, first of all, it is necessary to understand what exactly is meant by interactive learning technologies. In modern pedagogical literature, the concept of interactivity occurs in two versions. On the one hand, an interactive method is considered as a type of active learning.

The first classification of teaching methods by activity degree was proposed by E. Golant in 1957 [4]. Teaching methods were divided into passive – most often listening to theoretical information with feedback through surveys, independent work – and active a– a form of relationship between learners and teachers, in which participants in the educational process interact during the lesson and learners are no longer as passive listeners, but as active participants. Interactive methods involve a deeper interaction between the teacher and the trainees, as well as between the trainees. Sometimes the teacher formulates a task, and students come to achieve the result themselves in an active dialogue mode. Currently, the educational process at all stages of training uses a variety of interactive learning technologies: team games, case technologies, training, discussions, art technologies, brainstorming technologies, project training, etc.

On the other hand, interactivity is often interpreted as a property of software products. Interactivity in the context of an information system is the ability of an information and communication system to respond differently to any user actions in active mode. Information technologies are a prerequisite for the functioning of a highly effective learning model, the main purpose of which is to actively involve each of the students in the educational and research processes. Therefore, when discussing the issue of interactive technologies in education, associations arise with this concept of interactivity, primarily with interactive systems and complexes. There is or can be created by the teacher software that simulates non-computer interactive methods-case technologies, role-playing and business games. Virtual laboratories, virtual tours and virtual excursions can also be successfully used in the educational process due to their accessibility and visibility. For independent work, students can use various interactive programs that allow them to study the material in a playful way, easily and with interest. Many modern textbooks are accompanied by disks with a set of programs for independent work at home or in the classroom. Multimedia interactivity allows users to customize and create their own individual paths using tools that provide content in multimedia formats and promote active interaction. The student's contextual understanding of the subject is improved due to

nonlinear trajectory control, a large level of interactive interaction with the course content and multimedia presentation of the subject.

Thus, multimedia in the modern educational process can be defined as a didactic multi-channel means of organizing an active personality-oriented educational environment.

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