Theoretical Foundations of the Evolution of the Use of Multimedia Technologies in Modern IT Education in Ukraine

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Summary
The article used a complex system of research methods: observation of the course of the educational process, analysis of literature on pedagogy, teaching methods, modern pedagogical technologies; analysis of the experience of using multimedia in the study of disciplines.
The theoretical significance of the article: the definition of multimedia programs is given, the advantages and disadvantages of using multimedia programs are revealed, the basic principles of teaching using multimedia programs are revealed.
Key words: *multimedia technologies, communication technologies, education system, educational process.*

1. Introduction

The use of multimedia presentations can provide a visualization that promotes complex perception and better memorization of the material. Indeed, presentations facilitate the display of photographs, drawings, graphs, maps, herbarium materials. In addition, using animation and inserting video fragments, it is possible to demonstrate dynamic processes. Another advantage is playing audio files. All together, this ensures the "affectivity" of the perception of information - the presented material is supported by visual images and is perceived at the level of sensations. So, information is fixed subconsciously at the level of intuition. The second advantage of multimedia presentations is the speed and convenience of reproduction of all these photos, graphs, etc. the ability to follow the progress of the presentation of the material. It is also worth putting on the slides all the keywords and incomprehensible terms. This will facilitate their perception and writing by the listeners. Of course, almost all of these advantages can be provided without a presentation, but with the help of a regular board. However, at the same time, the information will still not be so clear, it will take much more time to display diagrams, drawings and graphs, and, in addition, the records may be incomprehensible due to the handwriting. That is, to summarize, the advantages of presentations are clarity, convenience and speed.
Distinctive features of modern life are not only the presence of a rich information space to which a person has access, but also the need to own special tools that will help him navigate there. These tools are multimedia communications, or simply multimedia (MMC, MMS). Since the 1960s, UNESCO has been actively supporting the media education movement around the world.

"Media education," says UNESCO documents, "is associated 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, to master the ability to use media in communication with other people; provides a person with the 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 for the creation and distribution of their own media texts and gaining an audience interested in them;
5) get the opportunity to freely access the media, both for perception and for products.

MMS define our everyday life, but how to define this concept more precisely and how to systematize the various forms of this phenomenon? For the average teacher, this terminology often resembles insurmountable chaos. Let's try to understand these media jungles in the article.

First, everyday consciousness usually associates the term "multimedia means" with technology and its further development. It is this component of educational communications that we will designate as the technical aspect of MMS.

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Secondly, MMS is much more intensive than traditional means of communication, transmitting information to a large audience. At the same time, the source of information always has some content that requires special grammatical design. Let's designate this component of multimedia as a semantic aspect (in Ushakov's explanatory dictionary, semantics is revealed as the meaning [of a word, a turn of speech, etc.]).

Thirdly, MMS include not only the content, but also the manufacturer's goals, which, ideally, should have some impact on the user. In such interaction, producers and consumers of MMS form a special social environment. In it, the user always has his own interests and needs. From this point of view, multimedia tools serve the channels of interaction. And we will designate this function as a pragmatic aspect aimed at action and application [1-3].

For the user, this means: he must be able to maintain equipment, understand the content and use of MMS in organizing his own activities and use the media to achieve the set goals.

2. Theoretical Consideration

We divide the technical aspect into two groups, depending on the basis. The first classification is traditionally described as the structure of the MMC and is a combination of hardware and software. The hardware contains the hardware, and the software provides instructional tasks through the hardware. For example, a projector is hardware, and a video tutorial is software.

If the division is based on technical use in the lesson, then MMC cases and we follow a two-stage scheme. At the first stage of multimedia, the means are technically used only for the production of an educational product. For example, in project activities, students take photographs, prepare postcards, etc. using special computer software. Further use does not require a computer. In the second stage, both the production and use of the information produced requires technical support. For example, a telecommunications project assumes that a student's activity is impossible without computers at all stages of the project.

But for the user, this means that he not only must have these multimedia tools, but he must be able to maintain them, and this already significantly limits the possibility of their free use in a regular lesson [5-9].

The semantic aspect assumes that information, depending on the form of its presentation, must be transformed before use. Consequently, after accessing the computer memory, it is decoded by special codec programs, which makes it possible to present it to the user. In this group, we will divide MMS into static, dynamic and interactive.

The duration of perception of static MMS is initially unlimited, however, as well as viewing control. The user determines the viewing duration and detail of the object in question. How much time he will devote to the use of MMS and in what sequence he will put them together is determined only by his goals and objectives. In pedagogical practice, this type of MMS is widely used in the form of visualization (for example, an image or an article from a newspaper) [12].

In dynamic MMS, the sequence of information is specified and tied to a time factor. The author-producer defines in them a clear playback time and the playback sequence itself. In this case, the user can change these parameters by editing or scrolling back and forth. The perception of the consumer during the lesson is directly related to his readiness and ability to assimilate the information provided at a given time and time frame [13].

Interactive MMS, such as computer MMS, interactive television or virtual reality, allow you to change information in the process of its perception. The user has the ability to correct information, can select it (computer programs, databases) and determine the sequence of its presentation, and sometimes change the content during transmission (interactive television, modeling) [2-4].

It should be remembered that each multimedia tool has its own special language (or encoding). Together with him the spectrum is predetermined by his possibilities and he is always limited.

Finally, from a pragmatic point of view (communication as exchange and dissemination of knowledge and ways of doing things), IMC can be divided into three areas.
Mass media (media), which include the press, radio, film, television, as well as discs and videos. It assumes that there is a market for which the product is information. Despite various attempts to define the media, the following features can be established in a unified manner:

- Pre-technical content is always geared towards the general public.
- More often only one-way communication is used, that is, feedback is an exception to the rule.
- Producers and users are spatially separated.
- The media are designed to deliver information, thereby contributing to the formation of public opinion, helping to organize entertainment, enabling new areas of education and sometimes organizing supervision as well.

MMS for personal use, such as telephone, fax, letters, e-mail, as well as photo or video cameras used in everyday life, have the following characteristics:

- Their content is directed at an individual or a narrow circle of people.

- Between producers and recipients there is an indirect connection through public opinion, while direct feedback is often impossible.
- Manufacturers have amateur status.
- Multimedia caters to individual contacts [4-7].

Educational MMS, for example, educational video programs and films, educational portals, educational software, digital educational resources, as well as collections of texts, graphics and sound selected for these purposes, are characterized by the following qualities:

- The content is focused on a certain circle of people, and always relies on their level of education (preschool, school, professional, additional).
- Between the MMS and the students, in most cases, there is an intermediary - the teacher. Sometimes educational media take on the character of media, for example, cinema, video, educational TV, satellite channels, television broadcasts.
- These MMS are designed to acquire knowledge, skills and abilities, as well as to summarize the accumulated experience.

It must be remembered that, due to the rapid development of the MMS themselves, the proposed systematization can be perceived rather conditionally. Increasingly, the teacher in the classroom has the opportunity to use not static, but interactive teaching tools. A movie projector has long receded before a video player, and a broken overhead projector is successfully replaced by a computer monitor or multimedia projector. Global networks compete with classical media. At the same time, the Internet successfully serves both individual communications (e-mail) and solves general educational problems (school or educational network). This requires the media user to constantly expand his competencies [10-13].

Even the use of traditional teaching tools tied teachers to service (technique), understanding (semantics) and application (pragmatics) and required certain user skills, orientation towards existing experience. Now the competence of the teacher in the field of application of MMS, the so-called. ICT competencies have become essential. Only the one who owns them can professionally use the constantly growing informational range of media communications at any time.

Conclusions

In connection with the dynamic progress of information technologies in modern society, there is a need to change the educational process, clarify goals, objectives, develop new technologies, introduce more effective methods and means of teaching. Multimedia has become one of the leading educational tools today. Having studied the possibilities of multimedia in teaching university students, we can conclude that the possibilities of multimedia are through a visual representation of the situation, etc., but also to a large extent in the formation of intercultural communicative competence.

The formed paradigm consists of a fundamentally new approach to the use of multimedia in teaching university students at the present stage of informatization of the education society. We believe that, being a teaching tool, multimedia performs a one-way didactic function and is aimed at increasing the efficiency of the teaching process.

As a result of the study, we came to the following conclusions:

the introduction of multimedia programs in the educational process of the university allows you to create a variety of communicative-speech situations; provide high interactivity; expand the volume of audiovisual information; teach all types of activities; to expand the knowledge of students offered by multimedia programs; provide instant feedback, thereby achieving flexibility in managing the educational process.

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