

INFOGRAPHICS AS A TECHNOLOGY FOR VISUALIZATION OF EDUCATIONAL CONTENT

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ABSTRACT

Generation Z¹ receives information in a visual form. In order to increase the effectiveness of educational activities, it is necessary to use innovative technologies of visualization of educational material. One such technology is infographics. The didactic effect of using infographics in the lesson is explained by the fact that the cognitive and communicative activity of the participants of the educational process has a symbolic character. Infographics is a graphic method of communicating information and knowledge, its task is to present complex information in a convenient and understandable way. The article analyzes the possibilities of infographics within the framework of visualization of educational content, describes the types and functions of infographics.

Keywords: online services, higher education, digital learning environment, critical thinking, generation Z, visualization.

INTRODUCTION

The introduction of modern electronic technologies into the educational process is one of the priorities of the development of the modern education system. Computers, online services and multimedia tools are used in learning any subject. Generation Z perceives information in a visual form, which is common in the modern world. The information society is characterized by a high rate of updating new knowledge. Information is presented in various forms - video, photos, audio materials, chats, forums, infographics. Infographics transform something that can be read into something that can be seen, that is, by converting text symbols into graphic symbols or combining them into a whole. Infographics are a way to talk about complex things easily. It makes the incomprehensible convenient, corrects the confusion.

Appeared on the pages of foreign mass periodicals in the early 90s. In the conditions of oversaturation of information, there is a need to display a large amount of data in the most accurate and fast way. This is also helped by the "screen" culture that has arisen in a person who lives in sync with the times. Generally, people want to get information as quickly as possible, and infographics are a great solution for this need. Our brain can process visual information 60,000 times faster than text. 90% of the

¹ Generation Z is the term used for the generation of people born around the world from 1997 to 2012. // Wikipedia, 2013. Access: <http://ru.wikipedia.org>

information transmitted to the brain is visual information, 70% of sensory receptors are located in the human eye, 50% of the brain is involved in visual information processing, visual effects reach 40% of people quickly [1, p. 578].

LITERATURE ANALYSIS AND METHODS

Critical thinking, visual presentation of information, creative approach to solving any problem and ability to communicate with other people are skills of the 21st century [2, p. 166].

Visual culture covers the personal sphere of culture that develops the ability to perceive, analyze, evaluate, present information and create unique artistic images. There is a concept of visual thinking, that is, thinking through visual operations. Visual images do not illustrate the thoughts of the author, but embody the final result of thinking [3, p. 328]. In order to increase the effectiveness of educational activities, it is necessary to use innovative tools for visualizing educational material. One such technology is infographics.

have a positive effect on the formation of cognitive interest in the younger generation . As a result of using infographics, students prepare for independent information-educational activities, learn to act on literary information sources, think critically and analyze data, develop the skills of presenting the results of educational activities [4, p. 25].

The didactic effect of using infographics in the lesson is explained by the fact that the cognitive and communicative activity of the participants of the educational process has a symbolic character. Visual images are stronger than verbal images, so they are better stored in memory [5, p. 249]. Accordingly , we can talk about the expediency of transferring information from verbal form to visual form in the process of organizing the educational process . Each of the mental operations is based on the simplest operations of visual perception of information and is impossible without them. According to the above rules , it is important to explore the potential of infographics in visualizing educational content. As a result of the implementation of the considered technology, students should acquire the methods of interpretation of the images used.

In recent years, special attention has been paid to the study of infographics in the educational process. The authors analyze different approaches to learning this technology and suggest different forms of its use in the educational process .

Her works, VV Pustovalova calls infographics one of the types of visualization and emphasizes that it has the ability not only to accurately and quickly convey the essence of information in the existing format, but also to convey to the reader the attitude of the creator of the infographic. The author says that infographics are the most understandable and convenient form of data presentation. One of the primary functions of visualizing the educational material is the cognitive function, which allows to integrate the content of the educational material. Visualization is a means of systematizing information and mastering interdisciplinary concepts [6, p. 224].

Infographics is a modern teaching method that helps to absorb information, develop search activity and form positional thinking. Application of the considered technology to teaching allows to organize joint work in the lesson.

Her research, KS Lebedeva states that the use of infographics in the educational process makes it easier to learn complex topics. At the first stage of creating an infographic, students are invited to use notes that reflect the main points of the topic being studied. After that , you should represent each concept

graphically on a piece of paper. It is important to explain to students that the concepts described should reflect the essence of the material being studied without describing the terms being introduced. A picture can show the relationship between concepts and words . Currently, the learning material is codified, which allows students to be the subjects of their own learning, where they act as creators. As the author noted, the use of infographics in the educational process helps to increase students' interest in the studied material, strengthens basic concepts, develops analytical skills and critical thinking, reveals creativity and the ability to express one's point of view. KS Lebedeva summarizes the effectiveness of using infographics in working with students [7, p. 38].

RESULTS

The following types of infographics can be used in education[8, p. 7]:

- **Dynamic infographics.** This is an infographic with animated elements. The main types of dynamic infographics are video infographics, animated images, presentations.
- **Statistical infographic.** It is a graphic product that displays certain statistical data. Statistics make you wonder about a problem or a solution. This allows the teacher to strongly stimulate students' thinking .
- **Information infographic.** It's perfect if you want to introduce new learning material or give an overview of a big topic coming up.
- **Construction infographics.** Shows the structure and components of an object or the mechanism of an event, sometimes - the chronology and causes of a historical event .
- **Time table.** This is a timeline of events drawn in chronological order. Most often, a timeline is a horizontal line with markers for years (or periods) that show what happened at a given time. Visual effects such as lines, icons, photos and labels help emphasize and explain points in a timely manner .
- **Process.** An infographic of the process. Used to describe loops or sequences of steps in a process. Step numbering is required to follow the process logic .
- **Geographical infographic.** A method of presenting geographic information. In these infographics, maps are used as a base on which to place various types of data charts.
- **Comparative infographic.** This is a very effective infographic for comparing several options of events, events, persons. Students can make their own conclusions and give preference.
- **List.** If you want to list the causes of an event or event, you can include a list of facts, examples.

And teachers of higher education institutions about the relevance of using infographics in the educational process and popular services that enable the active use of infographics in teaching. A total of 187 respondents participated in the survey . On a scale from 1 to 10, teachers had to identify positive criteria for introducing infographics into the educational process. Analysis of the results showed that , first of all, teachers emphasize the need for infographics due to the fact that they attract students' attention to the subject of the lesson (67%). Teachers also emphasize the potential of infographics in developing educational activities and forming the information culture of students (64%). Infographics help interdisciplinary integration (55%). The ability to create an information model of processes and events and to predict results is formed when using infographics during the educational process (42%) . The rest of the respondents emphasized such skills as remote working, compromise and the ability to listen to the interlocutor (11%).

DISCUSSION

Teachers were asked to identify popular online services for creating infographics in the educational process. The obtained results are as follows : Elementary teachers often use Piktochart in their practice, which offers a lot of easy-to-understand templates. In the service, you can enter the necessary information and configure the selected procedure. Visme includes an extensive library of ready-made resources . The service can be used to prepare presentations and create animated infographics. This infographic creation tool allows you to record voice messages, upload audio and video materials , and place free images and stickers. Canva Infographic Tool is an easy-to-use tool for creating infographics. On the portal you can find a large number of ready-made images, fonts and functions. Google Charts allows you to implement infographics on your website. You can use this service online. Infogram offers an automatic infographic customization feature.

It is recommended to use Calltouch analytics to analyze the activity of students in the educational process using infographics. The system generates reports on convenient control panels and allows to evaluate the participation of students in the educational process .

CONCLUSION

Infographics play an important role in the process of organizing educational activities . The capabilities of infographics are aimed at visual perception and reinforcement of images. Infographic elements help students develop visual and associative memory. Using infographics, you can display complex processes, digital and other information. The online environment is an innovative assistant in organizing and introducing infographics into the educational process. All types of information platforms have a lot of functions for the preparation and visualization of high-quality content .

When visualizing educational content, the teacher 's task is to develop positive emotions in students, encourage them and draw attention to actual problems. Students will conduct their own research, analyze data, and draw conclusions while working on infographics . Working on infographics helps to deepen the learning content and develops thinking and critical thinking in students .

Due to the rapid expansion of the capabilities of the digital learning environment, it has been found that infographics are being developed independently based on human needs. Due to its unique characteristics, the virtual environment allows creating colorful and effective intellectual infographic products. Active use of infographics for visualization of educational material helps to increase the quality and efficiency of educational results.

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