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USING INFOGRAPHICS IN HEI CLASSES AS A MEANS OF ENHANCING TEACHING EFFECTIVENESS

The article describes the definition of the concept Infographics are used in various educational environments, and specialised courses are emerging that teach students how to create their own infographics using a variety of tools, thereby facilitating learning and improving conceptual understanding. The study emphasises the urgent scientific need to develop more effective ways of presenting educational information to students within the framework of competence-based and informatised education. It has been determined that infographics have didactic potential, developing critical thinking, facilitating the organisation and analysis of information, and combining knowledge from different academic disciplines. It has been found that infographics as one of the methods of visualising educational information can be used in lectures, laboratory and practical classes to create problem situations and organise effective search activities. It is characterized characterised that as a visual representation of information, infographics serves as a modern tool for instant and clear communication of complex ideas. The article identifies different types of infographics, namely static, dynamic and interactive, and their respective functions. The importance of infographics for attracting attention, understanding and assimilation of information is emphasised, thereby improving the learning process. The study identifies nine key elements of effective teaching, including visualisation of information, strategies for attracting attention, and development of multimedia skills. A template example of the use of infographics in the educational environment, which consists of four stages, is presented. In addition, the article discusses infographic creation platforms and applications such as Canva, Piktochart, Venngage, and Adobe Spark, and outlines avenues for further research, including specialised studies of course effectiveness. The study confirms that in today's information society, the ability to create and analyse infographics is essential for understanding complex concepts and subsequent success. The study calls for the widespread integration of infographics into the educational process, emphasising its transformative potential in enriching the teaching and learning experience.
Key words: infographics, HEI student, teaching effectiveness, way of teaching, visual ways of teaching, teaching methodology.

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ВИКОРИСТАННЯ ІНФОГРАФІКИ НА ЗАНЯТТЯХ ЗІ СТУДЕНТАМИ ЗВО ЯК ЗАСІБ ПІДВИЩЕННЯ ЕФЕКТИВНОСТІ НАВЧАННЯ

У статті охарактеризовано дефініція поняття «інфографіка», визначено її основні характеристики та різновиди. Метою дослідження є вивчення інтеграції інфографіки в навчальний процес вищих навчальних

закладів (ВНЗ) для підвищення ефективності викладання. Завдання дослідження включають визначення поняття інфографіки та аналіз методів підвищення ефективності викладання за допомогою її використання. У статті підкреслено, що інфографіка знаходить застосування в різних освітніх середовищах, з'являються спеціалізовані курси, які навчають студентів створювати власну інфографіку з використанням різноманітних інструментів, тим самим сприяючи навчанню і покращуючи концептуальне розуміння. Дослідження підкреслює нагальну наукову потребу в рамках компетентнісно-орієнтованої та інформатизованої освіти розробляти більш ефективні способи представлення навчальної інформації студентам. Визначено, що інфографіка має дидактичний потенціал, розвиваючи критичне мислення, полегшуючи організацію та аналіз інформації, а також об'єднуючи знання з різних академічних дисциплін. Виявлено, що інфографіка як один із методів візуалізації навчальної інформації може використовуватися на лекційних, лабораторних і практичних заняттях для створення проблемних ситуацій та організації ефективної пошукової діяльності. Схарактеризовано, що як візуальне представлення інформації, інфографіка слугує сучасним інструментом для миттєвого та чіткого донесення складних ідей. У статті виокремлено різні типи інфографіки, а саме: статичну, динамічну та інтерактивну - та їхні відповідні функції. Підкреслено важливість інфографіки для привернення уваги, розуміння та засвоєння інформації, тим самим покращуючи навчальний процес. У процесі дослідженні виокремлено дев'ять ключових елементів ефективного викладання, серед яких візуалізація інформації, стратегії привернення уваги та розвиток навичок роботи з мультимедіа. Наведено шаблонний приклад використання інфографіки у освітньому середовищі, який складається з чотирьох етапів. Крім того, у статті розглядаються платформи та застосунки для створення інфографіки, такі як Canva, Piktochart, Venngage та Adobe Spark, а також окреслюються шляхи для подальших досліджень, включаючи спеціалізовані дослідження ефективності курсів. Дослідження підтверджує, що у сучасному інформаційному суспільстві вміння створювати та аналізувати інфографіку є важливим для розуміння складних концепцій та подальшого успіху. Дослідження закликає до широкої інтеграції інфографіки в освітній процес, підкреслюючи її трансформаційний потенціал у збагаченні досвіду викладання і навчання.

Ключові слова: інфографіка, студент ЗВО, ефективність навчання, засіб навчання, візуальні засоби навчання, методика викладання.

Statement of the problem in general form. In a world that is flooded with information, it is crucial to be able to present data in a form that is understandable and attractive.

The modern education system in Ukraine has undergone significant changes in recent years. The challenges posed by the COVID-19 pandemic and the ongoing hostilities in Ukraine have significantly influenced the introduction of new approaches to learning, especially for teachers. One of the most effective tools used to improve the learning process is infographics. Infographics provide an opportunity to visualise complex information and make it more understandable for students. Through the use of infographics, educators can present key concepts, statistics, and other important aspects of learning material in the form of attractive and easily digestible graphic images. This helps to stimulate students' interest in the subject, improves their understanding of the material and promotes retention of information. Infographics are a powerful tool that help make information more accessible and memorable. In classes with students of higher education institutions, the use of infographics can be an effective tool for both teachers and students. Thus, infographics play an important role in introducing new approaches to learning in the modern educational system of Ukraine.

Analysis of recent research and publications. The use of infographics in education is based on the principle of visualisation developed by J. Comenius, I. Pestalozzi, K. Ushinsky. The theoretical and meth-odological foundations of educational information visualisation are devoted to the theoretical and methodological principles of visualisation of educational information are studied by M. Minsky, O. Asmolov, A. Verbytskyi, V. Davydov, P. Erdniev. The basics of visualisation are considered in the scientific studies of J. Mitchell, E. Tufty, N. Holmes, etc.

Infographics are used in a variety of educational settings. Specially designed courses are being created to teach students how to create their own infographics using a variety of tools that can encourage classroom learning and promote a better understanding of the concepts that the graphics represent (MacQuarrie, 2012).

Nevertherless, the analysis of scientific sources (Dunlap, 2016; Kibar, 2017; Martix, 2014; Sancho, 2001) and the authors' own experience allows us to state that in Ukraine computer infographics are not sufficiently used in the field of higher education.

The purpose of the study is to investigate the utilization of infographics in higher education institution (HEI) classes as a method to improve teaching effectiveness.

To achieve this goal, it is necessary to solve the following tasks:

1. To define the concept of infographics.

2. To analyse ways of improving teaching effectiveness though infographics.

Presentation of the main material of the study. In the terms of higher education organisation on the basis of competence-based approach and infor-

matisation of education, the desire to develop more effective ways of presenting educational information to students is an urgent scientific task.

The creation of visualised content has a wide range of didactic possibilities, including the development of critical thinking, promoting the correct organisation and analysis of a large amount of information, combining information obtained from studying various academic disciplines into one holistic picture, etc. (Карташова, 2022: 124).

Examples of visibility and visualisation have always been widely used in education: reference charts and tables, operational schemes of actions, semantic and frame models, didactic visual aids, "pedagogical drawing" on the blackboard, metaplans etc. That's why the use of such visual aids as infographics becomes crucial part of today's educational process.

According to the French scientist Jean Marie-Chappet, the terms "infographics" and "infographics" appeared in the early 1980s from the combination of two American words "Information" and "Graphics" into the abbreviation "Infographics". This can be interpreted as a "graphic representation of information" (Гід Журналіста, 2003: 87).

The researcher Sancho V identifies infographics as information unit created with the help of images and typographic elements that allows you to understand or significantly facilitate the understanding of events, actions or any important aspects and accompanies or replaces textual information (Sancho, 2001: 31).

An infographic is a form of visual presentation that uses graphical elements such as charts, graphs, pictures, and text to organise, arrange, and communicate data, information, or concepts in a clear and attractive way. Infographics can be used for a variety of purposes, from explaining complex concepts to visualising statistical data.

The main purpose of infographics is to make information more accessible and understandable to the audience. It allows for faster and more efficient comprehension of large amounts of data, as it uses visual elements that complement text and numbers.

Infographics are made of two types of components, i.e. content (texts, facts, data and knowledge) and visual elements (graphics, colors, icons and signs) (Клепар, 2021: 23).

Infographics can be used in a variety of industries, including journalism, research, education, marketing, and others. It helps to stand out among the abundance of information that surrounds us every day and provides a quick and effective way to understand key points.

Infographics technology is based on the fact that images make data more attractive for perception, con-

tribute to their effective memorisation, and increase their persuasiveness. Visual communication tools, such as infographics, are natural to use when you need to present a large amount of information in a compact and logical way, as people perceive up to 90% of information visually. There are several types of infographics: static, dynamic and interactive, and by the type of source (analytical, economic, news, event update infographics, etc.) (Шахіна, 2015: 60).

Static infographic is a fixed image that does not contain any interaction or modification options. The user can only view the information presented in a static infographic, without the ability to interact with it. Dynamic infographics have animation or motion elements that allow you to communicate information more effectively and understand the relationships between data. It can include elements that change over time or in response to user actions. Interactive infographic provides the user with the ability to interact with the content, usually by clicking, dragging, or other actions. The user can change metrics, filter data, view additional details, and interact with other elements of the infographic. Thus, the main difference is the level of interaction that the user can have with the visual information. From static to interactive infographics, the user's ability to interact with the content and actively absorb information increases.

Infographics deliver the maximum amount of content in the least amount of space while still being precise and clear (Dunlap, 2016: 44).

Modern infographics combine visual graphic images with text, and thus become popular. It is closely related to the dissemination of knowledge and information using graphic symbols. Infographics is a visual representation of information, a kind of modern visual design, used where information needs to be conveyed instantly and clearly. The graphic means of infographics are aimed at revealing the essence of information in an original and expressive form that is quickly remembered (Черемський: 128)

The three main characteristics that ensure the effectiveness of any visual communication methods are formulated by D. Lankau:

– attention: communication should attract the audience;

– understanding: communication should effectively transmit knowledge, promote a clear understanding of the information. This means that the reader should be able to easily perceive the information presented;

– assimilation: communication should provide knowledge that is memorable. This means that the user should easily remember the information presented in the form of infographics (Graphic organisers).

On the basis of the analysis of scientific sources and the authors' own experience 9 Key elements for effective teaching is described below:

1. Visualisation of Information

Students learn better when information is presented in a way they can understand. Infographics can be used to visualise complex concepts, vocabulary and grammar rules. For example, graphs, charts, and tables can help explain the use of new words or grammatical structures, making the learning process more effective.

2. Attracting attention

Modern learners are used to a lot of visual stimuli in their daily lives. The use of colours, illustrations and graphic elements in infographics can grab their attention and keep them interested in English.

3. Increase memorisation

Students retain information better when it is presented visually. Infographics help to create associations between words, concepts and graphs, making them easier to remember and use in the future.

4. Stimulate discussion

Infographics can be a starting point for discussions on a variety of topics and issues. It can spark interest and encourage students to express their opinions and points of view.

5. Developing Multimedia Skills

In a world where multimedia plays a key role, it is important to teach students how to analyse and understand information presented in different formats. Using infographics in the English classroom helps to develop these important skills.

6. Use of Interactive Infographics: One way to capture students' attention is to use interactive infographics. These can be websites or apps where students can interact with the information by completing tasks, answering questions and solving problems related to the information presented. This approach promotes active learning and comprehension.

7. Support for Multimedia Perception: For students with different types of information perception, infographics can be particularly useful. For those who perceive visual information better, infographics allow them to understand and remember the material more easily and quickly.

8. Connection with Modern Trends: Using infographics in the English language classroom helps students develop skills that are useful in the digital world. In today's information society, the ability to create and analyse infographics is essential for understanding complex concepts and further success.

9. Integration with Multimedia Resources: Infographics can be part of a larger multimedia presentation or learning material. It can be combined with video, audio, illustrations, and other resources to create a richer and more engaging learning experience.

Infographics have different types, each of which is used to visualise different types of data and information. Traditionally, the simplest infographics include tables, graphs, maps, pie charts, and logic diagrams. More complex infographics can combine text blocks, photographs, maps, tables, charts, even comics, anything that can help create a full-fledged graphic story. It helps in spreading ideas and attracting attention. (Методика використання: 9)

Charts: Charts are used to display numerical data and the relationships between them. It can be a line graph, bar graph, pie chart, etc.

Graphs: Graphs are often used to show trends, changes over time, and comparisons between different metrics. For example, a graph can show temperature changes over the course of a year.

Cartograms: Cartograms use geographical maps to visualise data. For example, a world map can show the distribution of population by country or the level of economic development.

Playback infographics: This type of infographic uses various symbols and illustrations to recreate complex concepts, processes, or historical events.

Timelines: Timelines show a sequence of events over time. They are often used for historical events, technology development, or product lifecycles.

Interactive infographics: This type of infographic allows users to interact with the data and select information according to their needs. It can include animations, transitions, and other elements that make complex information easier to understand.

These types of infographics are used to present different types of data and information in a more accessible and understandable way. The choice of a particular type of infographic depends on the purpose of the visualisation and the specifics of the data to be conveyed.

Infographics as one of the methods of visualisation of educational information can be used in lecture, laboratory and practical classes to create problem situations and organise effective search activities.

Let's look at the basic example of the infographics application method in a practical class for HEI students (complied by the authors).

Stage 1: demonstrate the infographic and ask students to highlight the thesis, purpose, problem that the infograph reflects

Stage 2: assign roles (or positions) to the students: Roles can change depending on the visual information proposed for analysis.

Stage 3: ask students to analyse the infographic from the point of view of their role (position): positive or negative aspects, different points of view etc.

Stage 4: Ask students to create their own infographic in defence of their position.

It is useful for students not only to use ready-made infographics, but also to create their own infographics: drawing relationships, algorithms and schemes, inventing symbols for ideas. In the process of creating infographics, students should independently obtain the necessary information and also process it independently. Not only systematise facts, but also visualise the result of their systematization.

An important advantage of using infographic tasks is their easy checking. At a glance, it becomes clear how thoroughly the student has mastered the issue and managed to logically combine the necessary information. To create a high-quality infographic, you need to comprehensively study the content of the topic, pay attention to the logical combination of information, select visualisation material, and personify the infographic to create a graphic object that will be informative and understandable not only to the author but also to other participants in the educational process. (Яніцька та ін., 2023: 7).

Active participation of the learner in the creation of infographics and learning to analyse infographic models and diagrams is the first important aspect of using visualisation in the classroom. This tool helps a student to become an active creator of knowledge (Kibar, 2017: 32). For example, infographics can be used to work with concepts: ask students to extract the main concepts from a professional text (speech/article/video) and create a simple infographic reflecting the connections between concepts and terms.

When using this method, it is important to understand exactly what the teacher's goal is in using infographics: to evoke emotion, to entertain, to show portfolios or photos, to make an outline, etc. It is also important that teachers give students enough time to analyse and discuss the infographics, answer their questions and stimulate critical thinking when working with visual material.

The usage of infographics has positive impact as for teachers and as for students equally. Modern possibilities of creating infographics stimulate cognitive, heuristic activity of students; allow to absorb information faster and more efficiently (Клепар, 2021: 33). It also helps to develop communicative skills because of the vast amount of information that can be explained additionally. Infographics improve person`s creativity, resourcefulness, critical and innovative thinking as well as media and information literacy domains of skills.

There are two ways to create infographics: using graphic editors and online resources. There are many application packages and online resources designed to create infographics. The analysis of scientific papers shows that infographics can include a wide range of computer resources, namely: online data visualisation sources, word cloud tools, data visualisation software, online infographic design tools, graphic editors, presentation software, mapping tools, data sources data sources, free image, icon and resume visualisation repositories (Ved, 2022: 3).

Canva (Canva): Canva is a web-based platform that allows you to create a variety of graphic designs, including infographics. Canva offers a large number of ready-made templates for creating infographics on a variety of topics, including educational materials for use in English classes.

Piktochart (Infographic Maker): This platform also offers tools for creating infographics, presentations and other visuals. It has a large number of ready-made templates and tools to personalise your infographics to suit your style and needs.

Venngage (Venngage): Another popular platform for creating infographics and visuals. Venngage offers many tools for creating charts, graphs, maps and other interactive infographics that can be useful in English classes.

Adobe Spark (Adobe Express Level Up): This is a free tool that allows you to create visuals, including infographics, videos, and web pages. Adobe Spark has an intuitive interface and many features for creating professional-looking infographics.

These platforms provide not only tools for creating infographics, but also a wide range of ready-made templates, design ideas, and tips on how to use visuals for effective learning.

Additional information about Infographics usage may be found in scientific or research articles and studies (research and scholarly articles about pedagogical methods or the use of multimedia in education can provide valuable context on the effectiveness of infographics); educational blogs and forums (many teachers and educational professionals share their experiences and resources on education blogs and forums. Search terms such as "using infographics in the English classroom" can lead to useful information); and educational webinars and courses (some educational platforms offer courses on pedagogy or English language teaching where you can find guidance on how to use infographics).

Infographics are now actively used in various industries in various fields, from business and journalism to science and education, as it is a fairly universal means of disseminating the concept of It is a fairly universal tool for disseminating conceptual information.

In today's world, where information is too voluminous and fast-paced, infographics have become an important tool for communication and understanding complex issues. Its use allows us to create informative and attractive visuals that attract attention and facilitate the perception of information.

Conclusions from the study and prospects in its direction. The use of infographics in the classroom with university students is an effective way to improve the quality of learning and engage students in the learning process. It helps to visualise information, attract attention, increase memorisation and develop multimedia skills. Infographics open up new opportunities for quality learning and contribute to the effective acquisition of the learning material.

The prospect of the study is to research the effectiveness of infographics in specialized courses.

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