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### THE SIGNIFICANCE OF INFOGRAPHICS IN LANGUAGE LEARNING: ENHANCING COMPREHENSION, RETENTION, AND COMMUNICATION IN THE CONTEXT OF PHILOLOGY AND ESP

*The article reveals the significance of infographics as a means of visualizing information, enabling rapid insight and comprehension through the human visual system. The adoption of infographics in education is highlighted, particularly for their ability to make complex concepts accessible and comprehensible for learners. Infographics are shown to stimulate cognitive processes, aid in knowledge acquisition, and promote critical thinking skills. The article further emphasizes the relevance of infographics in language learning, specifically for philologists and ESP students. It showcases how infographics assist in understanding language structures, historical developments, and domain-specific vocabulary, while enhancing memory retention and comprehension. Infographics are praised for fostering independent learning and serving as a tool for effective communication in language acquisition. The study aims to provide a theoretical foundation for understanding the significance of infographics in language learning by exploring existing literature and research. It sheds light on the benefits and effectiveness of infographics in enhancing comprehension, retention, and communication of language-related information. The study also emphasizes the relevance of infographics in catering to diverse learning styles and needs, specifically for philologists and ESP students. The article introduces the differentiation between “concrete” and “visual” in the field of education and cognitive science. The article also discusses the cognitive-activity approach in acquiring a professionally-oriented foreign language, emphasizing the development of social cognition processes, analytical thinking, and critical thinking skills. It highlights the role of infographics in transforming textual meaning into verbal form and the influence of students’ professional knowledge and individual characteristics on text interpretation.*

**Key words:** *infographics, language learning, comprehension, retention, communication, cognitive visualization, education, pedagogy, visual aids.*

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### ЗНАЧЕННЯ ІНФОГРАФІКИ У ВИВЧЕННІ МОВ СТУДЕНТАМИ ФІЛОЛОГІЧНИХ ТА НЕФІЛОЛОГІЧНИХ СПЕЦІАЛЬНОСТЕЙ: ВДОСКОНАЛЕННЯ РОЗУМІННЯ, ЗАПАМ'ЯТОВУВАННЯ ТА КОМУНІКАЦІЇ

*Стаття розкриває значення інфографіки як засобу візуалізації інформації, що дозволяє швидко отримати уявлення та розуміння за допомогою зорової системи людини. Наголошено на використанні інфографіки в освіті, зокрема на її можливість зрозуміти складні концепції для студентів. Доведено, що інфографіка стимулює*

когнітивні процеси, допомагає засвоєнню знань та сприяє розвитку критичного мислення. Дослідження також наголошує на актуальності використання інфографіки для різних стилів та потреб навчання, зокрема для філологів та студентів-фахівців з англійської мови для спеціальних цілей (ESP) з метою сприяння загальному розумінню ролі та впливу інфографіки в освітній сфері, зокрема в галузі вивчення мови. На прикладах продемонстровано, як інфографіка допомагає зрозуміти мовні структури, історичні розвитку та спеціалізовану лексику, одночасно підвищуючи здатність до збереження і розуміння інформації. Дослідження має на меті надати теоретичну основу для розуміння значення інфографіки в процесі вивчення мови, досліджуючи наявну літературу та дослідження. Розкрито переваги та ефективність інфографіки у покращенні розуміння, запам'ятовування та комунікації інформації, пов'язаної з мовою. Автори пояснюють різницю між «конкретним» та «візуальним» у галузі освіти та когнітивної науки. Вона підкреслює реальний і практичний підхід конкретного навчання, де використовуються фізичні об'єкти або життєві приклади, та візуальну природу візуального навчання, яке використовує візуальні представлення для поліпшення розуміння. Вагомість розуміння цієї різниці підкреслюється для розробки ефективних стратегій навчання, що відповідають різним стилям навчання. Наголошено на важливості розвитку соціальних когнітивних процесів, аналітичного мислення та навичок критичного мислення для становлення особистості майбутнього спеціаліста. Доведено значення застосування інфографіки у перетворенні текстового значення на вербальну форму та вплив професійних знань студентів та їх індивідуальних особливостей на тлумачення тексту. Акцентовано увагу на областях, які потребують подальших досліджень, такі як довгострокові ефекти інфографіки, вплив індивідуальних відмінностей та оптимальні принципи дизайну. Підкреслено великий потенціал когнітивної візуалізації як засобу пізнання та інтелектуального розвитку, мотивуванні вивчення мови та розвитку рефлексивних здібностей у сучасній дидактиці мови.

**Ключові слова:** інфографіки, когнітивна візуалізація, вивчення іноземної мови, візуалізація, освіта, пізнання, рефлексивні здібності.

**Urgency of the research.** Our surroundings are undergoing a transformation as the Information Age has brought about a fundamental shift in our thinking and communication methods. Presently, we exist in a culture that flourishes through continuous learning and sharing, a phenomenon largely facilitated by the widespread presence of social media platforms. The influx of information necessitates the adoption of novel communication methods in order to effectively consume and process it. The concept of designing information is not a recent development. Throughout history, dating back to ancient cave paintings, humans have consistently employed visual representations as a means of conveying information, culminating in the contemporary practice of data visualization. Infographics, in their various formats, play a pivotal role in this emerging paradigm. By visualizing information, they empower us to rapidly and effectively gain insight and comprehension, leveraging the remarkable processing capabilities of the human visual system. Harnessing this power is not only valuable but also indispensable as we navigate the immense volumes of data that confront us on a daily basis.

The utilization of infographics for educational purposes holds significant importance. Infographics provide a visually engaging and concise way to present information, making complex concepts more accessible and comprehensible for learners. By combining visuals, text, and data, infographics facilitate efficient information processing and retention. They stimulate cognitive processes such as pattern recognition and spatial understanding, aiding in knowledge acquisition and critical thinking skills (Jaleniauskiene, 2023).

Moreover, infographics appeal to different learning styles, accommodating visual learners who benefit from visual aids. They promote engagement and motivation, as students are more likely to be captivated by visually appealing and interactive content. Infographics also enable students to organize and synthesize information effectively, fostering their ability to communicate ideas clearly and succinctly. Overall, the use of infographics in education enhances learning outcomes by promoting understanding, retention, and effective communication of knowledge. The efficiency of utilizing infographics for language learning, particularly for philologists and ESP students, is noteworthy. Infographics offer a concise and visually appealing way to present language-related information, such as vocabulary, grammar rules, or language-specific concepts (Coon, 2022). For philologists, infographics aid in comprehending the intricacies of language structures and historical language developments, enabling them to visualize and grasp complex linguistic concepts more easily. In the case of ESP students, infographics can be tailored to their specific field of study, providing a focused and efficient means of acquiring domain-specific vocabulary and knowledge. The visual nature of infographics enhances memory retention and comprehension, allowing learners to make connections and associations between language elements more effectively. Additionally, infographics foster independent learning as students can revisit and review the presented information at their own pace. With their ability to condense and present information in a visually engaging manner, infographics serve as a valuable tool for enhancing language learning

outcomes for philologists and ESP students as well. The transformations in higher education, driven by the processes of digitization across various spheres of human activity in contemporary society, undoubtedly impact the methodology of teaching foreign languages in the university context.

**The research objective.** The aim of this study is to provide a theoretical foundation for understanding the significance of utilizing infographics in language learning. By exploring the existing literature and research, this article aims to shed light on the benefits and effectiveness of infographics as a tool for language acquisition. It seeks to highlight the cognitive and pedagogical advantages of infographics in enhancing comprehension, retention, and communication of language-related information. Additionally, this study aims to emphasize the relevance of infographics in catering to the diverse learning styles and needs of language learners, particularly in the context of philologists and ESP students. Ultimately, the goal is to contribute to the broader understanding of the role and impact of infographics in the educational landscape, specifically in the realm of language learning.

**Scientific researchers and issue analysis.** In recent years, the use of infographics as a tool for language learning has gained considerable attention in educational research that explores the effectiveness of infographics in language acquisition. Scholars have extensively researched and applied the use of infographics for teaching English, revealing its potential benefits in language learning. Bicen H. and Demir B. in their article state that there are two of the most handled items of technological advances in education today are. These two elements “augmented reality and infographic usage” are actively used in learning environments today and the importance of these two elements is increasing in academic studies. Lee conducted a study focusing on teaching academic vocabulary to EFL students using infographics. The results demonstrated that infographics effectively enhanced students’ retention of academic vocabulary. Similarly, Aguilar and Flores explored the use of infographics in teaching ESP to business students, finding that infographics improved student engagement and comprehension of complex business topics. Junaidi investigated the impact of infographics on vocabulary acquisition for EFL students, revealing that infographics positively influenced vocabulary learning and retention. Sari and Prasetyo conducted a study on the effectiveness of infographics in teaching ESP to engineering students, highlighting the increased motivation and comprehension among students exposed to infographics. Shams and Alavi, in their comprehensive review, highlighted the positive impact of infographics on student motivation, engagement, and learning outcomes in language teaching and learning. Furthermore, Nikolaienko O. investigated the use of infographics in teaching English

for environmental designers and architects, revealing that infographics facilitated better understanding of technical information and terminology. Tarkhova L. improves the effectiveness of the educational process by using infographic content that allows to create interactive infographics with the application of the original markup method. The importance of complex graphic information in the information processes of modern society, the need to know the tools for its creation, rules and techniques of development, as well as the skills of posting infographic information as an integral part of specialists’ competence were shown. The paper describes in detail the features of using infographics when creating presentations, mnemonic diagrams, instructions, as well as in the process of searching for information on the Internet. Jaleniauskiene E. analyzes the application of infographics in higher education. The author conducts a scoping review of the scientific articles to analyze the use of infographics across a variety of university subjects. The findings reveal that the most frequent educational practices are those that merge both ready-made infographics and students’ hands-on experience in creating their own infographics. Such learning activities facilitate the learning of the subject-related material and help students advance with the creation of this popular form of modern communication. The tasks including infographics also represented an enhanced mission of higher education as students are given opportunities to develop a number of personal and career readiness skills and capabilities simultaneously, such as digital, visual and information literacy, critical thinking, creativity, communication and collaboration skills (Bicen, 2020), (Tarkhova, 2020), (Jaleniauskiene, 2023).

Collectively, these studies demonstrate the wide-ranging benefits of infographics in language education, supporting its effective integration as a valuable pedagogical tool. These are just a few examples of scholars who have researched, reviewed, and applied infographics for teaching English. There is a growing body of research in this area, which suggests that infographics can be an effective tool for improving student learning outcomes and engagement in ESP classrooms.

**The statement of basic materials.** Today, scientists are attempting to differentiate between two terms “concrete” and “visual”. The term “concrete” has always meant demonstrative, indicating that during the teaching process, the teacher shows or demonstrates a finished object, process, or phenomenon. Meanwhile, «visual» implies representation in the form of an image. In the field of education and cognitive science, the distinction between «concrete» and «visual» has become increasingly important. While both terms involve the use of visual elements in learning, they differ in their underlying principles and applications.

The term «concrete» refers to the tangible, hands-on approach to teaching where physical objects, manipulatives, or real-life examples are used to facilitate understanding. In this context, the emphasis is on providing direct sensory experiences to learners, allowing them to interact with and manipulate objects or observe real-life demonstrations. This approach is particularly effective in subjects such as mathematics, science, and vocational training, where practical application and experiential learning play a crucial role. On the other hand, «visual» pertains to the use of visual representations, such as images, diagrams, charts, or infographics, to convey information and enhance comprehension. Unlike the tangible nature of concrete learning, visual learning primarily focuses on the visual presentation of information. Visual aids are employed to simplify complex concepts, organize information spatially, and stimulate visual thinking processes. Visual learning is prevalent in disciplines like language acquisition, art, geography, and history, where visual stimuli can significantly aid in comprehension and retention. While the terms «concrete» and «visual» may overlap to some extent, their distinction lies in the level of direct interaction and sensory engagement involved. Concrete learning emphasizes physical manipulation and direct experiences, while visual learning relies on visual representations to convey information. Understanding this differentiation is vital for educators and researchers to design effective teaching strategies that cater to different learning styles and optimize knowledge acquisition (Tarkhova, 2023).

Essentially, the cognitive-activity approach in acquiring a professionally-oriented foreign language entails the development of social cognition processes and analytical thinking through the examination and analysis of source reading material for the purpose of understanding textual meaning or extracting specific information. The learner constructs a mental representation that correlates comprehension of cohesive text with the intended meaning of the author. Another important factor is that students typically possess a certain background of professional knowledge in their field, which helps them identify connections between text elements and generate new ideas while gathering subject-specific information. As a result, elements of the text are actualized and subsequently transformed into verbal form, combining the presumed authorial meaning with the reader's mode of comprehension influenced by both extralinguistic and linguistic factors, including textual information, such as the organization of the text through sentences and connectors. Thus, the interpretation of texts within a specific field is determined by the level of students' professional preparation and their individual characteristics, including the speed and depth of cognitive processes and varying levels of developed critical thinking abilities. Critical thinking skills are

associated with analyzing information, processing it, interpreting it, and constructing arguments. There are three types of infographics:

- static infographics – this type of infographic is often a single slide without any animated elements. It is the simplest and most commonly used form of infographics;
- interactive infographics – these infographics contain animated elements, and users can interact with dynamic data to some extent. This type of infographic allows for the visualization of a larger amount of information within a single interface;
- video infographics or short videos that combine visual representations of data, illustrations, and dynamic text.

When applying this method, it is crucial to have a clear understanding of the goal the teacher aims to achieve through the use of infographics. Whether it is to evoke emotions, entertain, showcase a portfolio or photos, create a summary, etc. It is important to ensure that the infographics align precisely with the content being presented. When using different types of infographics, it is advisable not to overload the material excessively. This can distract the students' attention and hinder the comprehension of the main points. Before starting the work, it is essential to create a prototype of the intended infographic. The layout of the elements can be sketched by hand (Bicen, 2020).

In order to enhance the learning experience and engage students, incorporating infographics into lessons can be highly effective. The teacher can encourage student participation by asking questions, initiating discussions, and prompting students to analyze the connections and significance of the presented events and information. Here is an example how infographics can be incorporated into the lesson plan.

The aim of the lesson is to develop students' study skills and understanding of how to be productive. As a lead-in part you can ask students to think about how productive they are each day and what they could do to be more productive and get more done. For a while-reading stage you can ask students to study the infographic and choose one tip from each of the seven threads they think would help them. Then you can ask the students to discuss and share the ones they chose on groups, and, after the discussion ask the students to identify the seven worst tips. For a post-reading, particularly productive, stage you can ask students which of the seven threads they need to work on most and ask them to discuss what they would do with one extra hour each day.

This interactive approach stimulates critical thinking skills and helps students develop a deeper understanding of the subject matter. By effectively utilizing an infographic, teachers can create an engaging and immersive learning environment that promotes active student involvement and comprehension of complex concepts.

**Uninvestigated parts of general matters.** While there has been significant research on the use of

infographics for learning languages, there are still certain aspects that have received limited investigation from scholars. Many studies have focused on short-term learning outcomes immediately after using infographics. However, there is a need for more research examining the long-term effects of infographics on language acquisition. Understanding how well the knowledge and skills acquired through infographics are retained over time would provide valuable insights into the sustainability and effectiveness of this approach. Scholarly investigations often treat learners as a homogeneous group, neglecting the potential impact of individual differences on the effectiveness of using infographics. Factors such as prior language proficiency, cognitive abilities, learning styles, and cultural backgrounds may influence how learners engage with and benefit from infographics. Further research is needed to explore how these individual differences interact with the use of infographics in language learning. While some studies have touched upon design considerations for infographics in language learning, there is still room for further investigation into the optimal design principles. This includes exploring the ideal balance between visuals

and text, the appropriate level of complexity, the use of interactive elements, and the integration of culturally diverse representations. Identifying the key design elements that maximize comprehension and engagement would greatly enhance the effectiveness of infographics in language learning.

**Conclusions.** In conclusion it should be said that cognitive visualization is inherently similar to the principle of concreteness in education, but it possesses an advantage by not only being an illustration but also a means of cognition and intellectual development. It serves as a product of learning rather than just a teaching tool. The technology of cognitive visualization contributes to solving a range of pedagogical tasks, including optimizing learning processes, motivating language learning, and fostering reflective abilities. Integrating various forms of cognitive visualization into language education directs learners' consciousness towards action, thus providing them with an important cognitive tool necessary for continuous self-education. Creating educational materials and resources that incorporate elements of cognitive visualization is one of the pressing challenges in contemporary language didactics.

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