ПЕДАГОГІКА

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INTERNALIZATION OF INFORMATION FLOW USING TECHNIQUES OF VISUALIZATION IN THE PROCESS OF FUTURE PHILOLOGISTS' PROFESSIONAL TRAINING

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Abstract. *The academic paper deals with the mechanisms of internalization of information flow using techniques of visualization. Information competence is an integral part of a foreign language teacher's professional competence and translator's and interpreter's professional competences. Any information is divided into two types: according to the presentation form and the method of obtaining information. Knowledge, that has passed the stage of personal appropriation (internalization), is especially important. The classification of visualization techniques includes: Mindmap, Timeline, Infographics, Scribing. Each type of visualization has its own peculiarities and advantages. Mind maps represent the process of thinking through schemes. Timelines help students understand and memorize quickly the temporal relationships of events. Infographics in the form of interactive posters, tag clouds, visual organizers present information logically, quickly and clearly. Scribing is the latest technique to introduce new information. It is a dynamic, simultaneous process of information presentation and its visual display in real time. Visualization acts as an intermediate link between the educational material and the learning outcomes. It develops a number of professional sub-competences. These innovative techniques help students simplify and optimize processes of perception and cognition.*

Keywords: *internalization, information flow, techniques of visualization, classification of visualization, future philologists' professional training*

Introduction. One of the main conditions for ensuring the quality of higher education in accordance with the system of internal quality standards of ESG (European quality assurance standards and guidelines) is to increase the Information Competence of scientific and pedagogical staff.

Education is a mirror of social relations that exist objectively in any society. Therefore, it should reflect adequately the needs of the society. Today's labor market requires trained competitive graduates, who are able to study constantly, adapt to market transformations, have the 21st century skills and improve them. A list of skills, which the labor market will need in the near future, has been presented at one of the World Economic Forums in Davos. It focuses on the development of the following skills: complex problem solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, judgment and deci-

sion-making, service orientation, negotiation, cognitive flexibility. The approbation of innovative teaching methods contributes to the realization of these objectives.

Recent research and publications. The principle of visibility has been one of the fundamental principles of learning since the time of Y. A. Comenius. Any visualization makes easier the process of knowledge appropriation. However, nowadays special attention is paid to those types of visualization that enable students to be involved into the active "discovery" of new knowledge. So, a term "facilitation" (from the English. facilitate – to help, guide, facilitate) comes into being. It means a few meanings: a process, a number of skills and techniques that help organize training effectively.

Psychological and pedagogical studies on the competency-based approach aiming at teachers' training for activities in a modern computerized school environment are analyzed and systematized in the studies by N. Belyavskaya, A. Borovkov, L. Bocharova, T. Gudkova, Yu. Doroshenko, A. Ivanova, E. Kykot M. Spodarets, S. Litvinova, A. Ovcharuk, S. Rakova, O. Shcholok, O. Shestopaliuk, N. Soroko, A. Spivakovsky, M. Tsvetkova and in a number of national and foreign publications.

The purpose of this academic paper is to highlight the internalization of information flow through techniques of visualization in the process of future philologists' professional training.

A number of general scientific **methods** such as induction, deduction, analysis are used to reach the objectives of the study.

Results. At the National university of life and environmental sciences of Ukraine the process of future philologists' training aims at forming a foreign language teacher's professional competence (Bachelor's degree program) and translator's and interpreter's professional competences (Master's program).

There are different approaches to interpretation of a foreign language teacher professional competence (FLTPC). Here's one of them. FLTPC consists of theoretical-methodological competence (TMC) and professional-methodological competence (PMC). TMC includes scientific-theoretical competence; psychological-pedagogical competence; linguistic, cultural, social, cultural, communicative competences; *information competence.* These types of TMC are constituents of professional-methodological competence (PMC). In practice they are realized through a number of activities, methods and learning tools. The translator's/interpreter's professional competences include five constituents: bilingual, extralingual, translation/interpretation, personal and strategic competences [5, c. 177]. *Information sub-competence* is an integral part of translation and interpretation competences.

In general, *information competence* is understood as the ability of the individual to navigate the flow of information, to work with different types of information, find the necessary material, classify and summarize it. It is a major component of the information culture and a part of the general personality's culture. It is one of the goals of teacher's training.

Any information can be divided into two types: according to the presentation form (numerical, textual, graphic, sound, multimedia, interactive) and the method of obtaining information: (visual, sound, olfactory, taste, tactile). Knowledge, that has passed the stage of personal appropriation (internalization), is especially important. For personal and professional socialization of a person, new methods of working with information are a great demand, be-

cause it is necessary to get an information maximum for a unit of time, otherwise we can get lost in this “sea of information” [1, c.60].

Visualization as a way of developing educational, cognitive and informational competences gives enormous prospects for students-philologists’ professional competence development. Any technique for creating images, diagrams, or animations to convey a message refers to this innovation. Visualization through visual imagery has been an effective way to convey both abstract and concrete ideas since the dawn of humanity. The ability to create the interactive content and present information using visual images is useful, in particular, during international round tables, conferences, teleconferences, webinars, as well as in project and research activities.

According to UNESCO research, only 12 % of information is absorbed by the ear, with the help of sight – about 25 %, and in the process of audio-visual perception – up to 65 % . Visualization of information deals with both coding and decoding of the verbal and imagery sphere. Basic elements of the visual image can contribute to the process of information coding into a visual image [4, c.143].

Gestalt psychology contributed a lot into the description of the characteristics of human perception. It is a school of psychology created by Max Wertheimer, Wolfgang Köhler, and Kurt Koffka. The school emerged in Austria and Germany in the early twentieth century after Wertheimer's discovery of the phi phenomenon which focused on the illusion of motion. This approach is based on human nature being inclined to understand objects as an entire structure rather than the sum of their parts. Wertheimer defined a few principles to explain the ways humans perceive objects. These principles are based on *similarity, proximity, continuity* [7]. They are the following. *Law of proximity*: Objects near each other tend to be grouped together. *Law of similarity:* Items, that are similar, tend to be grouped together. *Law of closure:* Objects grouped together are seen as a whole. We tend to ignore gaps and complete contour lines. *Law of Continuity:* Lines are seen as the smoothest path. *Figure-ground* perception refers to the tendency of the visual system to simplify a scene into the main object that we are looking at (the figure) and everything else that forms the background (or ground) [6]. *Five fundamental principles of Gestalt* are illustrated in Figure1.

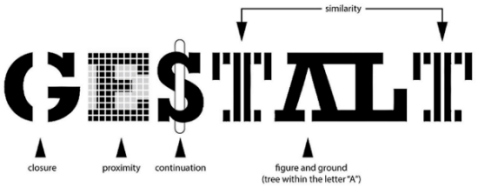

Figure 1.Five Fundamental Principles of Gestalt

The history of information visualization has begun long before the writing since 40-20 millennia BC. It is represented as a series of relatively independent stages, at each of which we find new elements: from primitive drawings that reproduce the life of ancient people, the first geographical maps, to modern types of digital infographics,

Attempts to visualize educational information have been undertaken by innovative educators before. For example, V. Shatalov’s technology of summary notes is widely known. The honorary doctor of the National Academy of Pedagogical Sciences of Ukraine developed a system, which is based on reference signals, interconnected keywords, conventional signs, figures and formulas with a brief conclusion at the end.

The contemporary classification of visualization techniques in educational activities includes the following [3, c. 18]:

1. Mindmap, or intelligence cards;
2. Timeline, or time tapes;
3. Infographics;
4. Scribing.

Mindmap, or intellect cards, is a connection diagram, also known as an intel card, mindmap, or associative card, a way of depicting the process of general systemic thinking using circuits. It can also be considered as a convenient alternative recording.

The following online mind map template services can be recommended: https://www.lucidchart.com/pages/landing/mind_mapping;https://venngage.com/blog/mind-map-templates/; https://www.imindq.com/mind-map-templates.

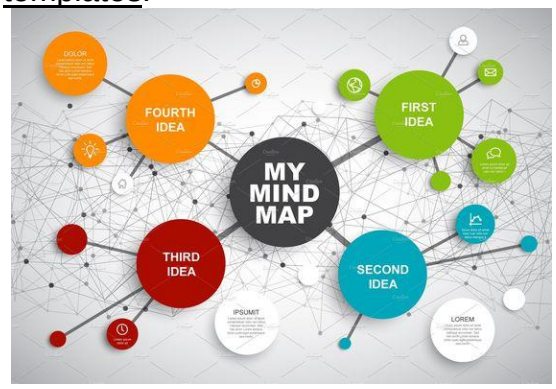

Figure 2. Mind map template

A *timeline* is the presentation of a chronological sequence of events along a drawn line. It enables a viewer to understand temporal relationships quickly and in a logical way [6].

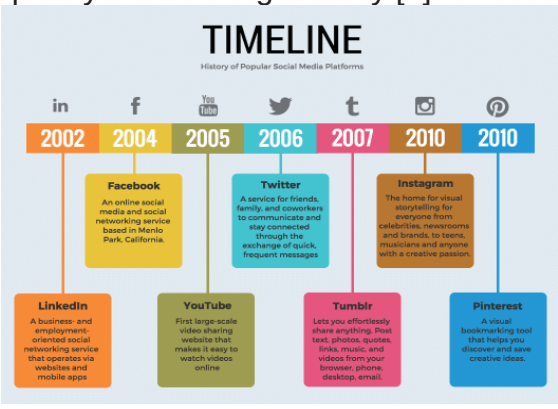

Figure 3. Timeline “History of popular social media platforms”

Free resources to create timelines are the following: http://www.time-toast.com; https://www.tiki-toki.com; http://when-intime.com/, etc.

Infographics (a clipped compound of “information” and “graphics”) are graphic visual representations of information, data, or knowledge intended to present information quickly and clearly [7]. Educational infographics are graphic visual representations of information, data. These include an e-placard, a tag cloud (words), and visual organizers.

Figure 4. Tag cloud

There are many modern information technologies for creating infographics: MS Office software (Microsoft Power Point, Microsoft Word) and the AdobeFlash package; Internet services (Prezi, Glogster, Thinglink, LIno it, Padlet, Cacoo), WordArt.com (before Tagul.com), ImageChef etc.

Scribing (from English Scribe for sketching or drawing) is the latest material presentation technique invented by British artist Andrew Park. This is a dynamic, simultaneous process of visual display of information, key ideas, results, in real time during the process, activities.

The first person to use scribing at school was the American teacher Paul Bogush, although in pedagogy there have already been technologies similar to scribing. These are V.F. Shatalov’s summary notes, Tony Buchan's intelligence cards. All three technologies are related to the fact that information is encoded in the form of associative images

– pictograms, schemes, drawings. However, scribing has a fundamental difference – it is closer to animation, comics, rather than the scheme. The function of scribing is to present information “effectively”, making it attractive, to help remember and absorb it better, involving two receptors at once in the data processing – vision and hearing [2, c.11].There are varieties of scribing according to the didactic goals, performance techniques. We emphasize the following advantages of scribing such as universality, efficiency, variability, interactivity, visual means for the development of memory.

Conclusions and prospects for further research. Thus, we can emphasize that internalization of information flow through techniques of visualization in the process of future philologists’ professional training is topical and popular among students. The basis for the visualization of the content of educational material is the conscious and purposeful use of educational “images”, which are specially designed and organized to stimulate and intensify mental processes. Visualization acts as an intermediate link between the educational material and the learning outcomes. These innovative techniques help students get rid of minor details, simplify and optimize cognition processes.

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ІНТЕРІОРИЗАЦІЯ ІНФОРМАЦІЙНОГО ПОТОКУ ЗА ДОПОМОГОЮ ТЕХНІК ВІЗУАЛІЗАЦІЇ В ПРОЦЕСІ ФАХОВОЇ ПІДГОТОВКИ СТУДЕНТІВ-ФІЛОЛОГІВ

Бабенко О.В.

Анотація. *У статті розглянуто механізми інтеріоризації інформаційного потоку з використанням методів візуалізації. Інформаційна компетенція є невід'ємною частиною професійної компетентності вчителя іноземної мови та фахової компетентності перекладача. Будь-яка інформація поділяється на два типи: відповідно до форми подання та способів отримання. Особливо важливі знання, які пройшли стадію особистісного присвоєння (інтеріоризації). Класифікація методів візуалізації включає в себе: інтелект-карти, стрічки часу, інфографіку, скрайбінг. Кожен вид візуалізації має свої особливості та переваги. Інтелект-карти зображують процес мислення, використовуючи схеми. Стрічки часу дозволяють студентам швидко зрозуміти та запам'ятати тимчасові відносини подій. Інфографіка у вигляді інтерактивних плакатів, хмар тегів, візуальних організаторів висвітлює інформацію логічно, швидко та чітко. Скрайбінг – новітня техніка подачі матеріалу, динамічний, одночасний процес презентації інформації та її візуального відображення в режимі реального часу. Візуалізація є проміжною ланкою між навчальним матеріалом і результатом навчання, розвиває навчально-пізнавальні та інформаційні субкомпетенції. Техніки візуалізації допомагають студентам спрощувати та оптимізувати процеси сприйняття і пізнання.*

Ключові слова: *інтеріоризація, інформаційний потік, методи візуалізації, класифікація візуалізації, професійна підготовка майбутніх філологів.*