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THE TEACHER'S ELECTRONIC CARTOGRAPHIC ONLINE PLATFORM AS A MODERN TOOL AND RESOURCE FOR STUDYING GEOGRAPHY

Abstract. This article examines the use of information and communication technologies in teaching and learning geography. The realities of modern educational process in Ukraine, in particular distance learning and military events, force Ukrainian teachers to look for opportunities for remote interaction between teachers and students. Taking into account that teachers are increasingly turning to the electronic form of providing educational material to students, an example of the application of an innovative approach to the study of geography, namely the use of WEB-mapping capabilities, is given. Attention is focused on the use of a new type of a learning tool to help all participants of the educational process − an online platform for studying geography and history. In order to provide students with high-quality electronic content in a cartographic form, it is proposed to create a so-called "Teacher's Electronic Cartographic Online Platform". The staff of the State Research and Production Enterprise "Cartography", on the resources of which the "Teacher's Electronic Cartographic Online Platform" functions, managed to initiate the process of its creation and lay the foundations for the functioning of these types of electronic educational resources. The teacher's cartographic online platform is presented as a set of modern electronic educational cartographic guides, posters and interactive maps. The presented online platform was approved, tested and received numerous subscribers in the time of the global pandemic and war. The purpose of this publication is a detailed analysis of the content and description of the principles of functioning of the teacher's electronic cartographic online platform, a study of its advantages over traditional manuals in organizing and conducting geography education. Pedagogical possibilities and methods of studying geography based on the presented online platform are revealed. The general features of the design of electronic materials in such platform are described. This publication also visualizes the interface of the online platform being created and gives an example of designing interactive maps in it. Prospects for the development of the teacher's electronic cartographic online platform and filling it with new content are given.

Keywords: teacher's electronic cartographic online platform; interactive map; educational electronic guide; study of geography; distance learning.

1. INTRODUCTION

A competency-based approach to the study of sciences as a basis for the formation and development of key and subject-specific competencies of an individual is one of the trends of modern education. Information and communication competence belongs to the central pedagogical phenomena of the new millennium. Information and communication technologies have been gaining ground in the educational process over recent decades, and their use continues to be a relevant direction in the development of modern education. This was also reflected in the Concept of the New Ukrainian School [1], which was launched in 2018, and in the 2022-23 academic year it will already cross the threshold of the secondary school.

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Currently, in Ukraine, the regulatory and legal basis for the introduction of the latest technologies into the educational process of general secondary education institutions has been formed. An example is the order of the Cabinet of Ministers of Ukraine "On the approval of the Concept of implementation of state policy in the field of reforming general secondary education "New Ukrainian School" for the period until 2029" and the approval of the plan of measures for 2017-2029 for its implementation. Also, the orders of the Ministry of Education and Science, Youth and Sports of Ukraine "On measures to implement electronic educational content", "On approval of the Regulations on electronic textbook" have been implemented [2].

Preparing students for life in the information society, as one of the competencies that must be acquired during education, requires that teachers use various innovative technologies in the organization of education. This trend will continue in the future. Innovations in education are not only the use of the latest information technologies, computer training programmes, and electronic manuals. Innovative technologies in education are based on the use of such a methodological system, which is based on active learning methods. They ensure the formation of students' personally, professionally and socially significant qualities through interaction in specially created conditions of the educational environment. Interactive learning technologies are introduced not only for better perception and assimilation of information, but also its use, which gives the possibility to form a complete system of knowledge in a discipline and to integrate it in the student's mind.

It should be noted that in Ukraine, information and communication technologies are rather slowly entering the educational environment and therefore have an ambiguous effect. According to N. Olkhova, this happens as a result of their rapid development and the influence of a number of factors of financial, material and technical, regulatory nature, as well as the influence of the stereotypical tradition of teaching in universities and in schools [1]. Though information and communication technologies provide additional learning benefits, especially when other factors inhibit learning, traditional classes such as lectures still continue to be highly valued by learners [3].

The problem statement. The recent years of education during the pandemic and military events in Ukraine added new challenges for educators and formed questions that still have no answers: What should be the ideal school kit of a student and teacher of an online school? Who should develop it and under what conditions can access to it be granted? When will a comprehensive online platform appear for schools? What resources should it be filled with? It is impossible to implement online education in the current conditions without the introduction of information and communication technologies and gaining experience in their use.

But today we observe a trend that, most often, in their pedagogical practice, Ukrainian teachers use the educational content available online, and less often create their own. Unfortunately, materials from the Internet are not always reliable, they are often inconsistent with each other, do not correspond to the syllabus and age characteristics of students. That is why it is so important to create special educational Internet portals for teachers and students.

Analysis of recent studies and publications. An example of the implementation of information and communication technologies in the learning process is the development by teachers of their own pages in social networks, where a kind of academic community related to educational courses is created [4]. Social networks help to organize interaction between the participants of the educational process and respond quickly to emerging problems. Thanks to social networks, participants in the educational process follow the activities of others, better orient themselves in modern realities, learn about new scientific discoveries and events. A high level of socialization provided by social networks facilitates e-learning.

In the world, there is a steady trend towards the formation of professional blogging communities (for example, educational blogs (edublogs) on geographical education in the UK [5]). But it is worth noting that there are still few teachers in Ukraine who are able to create

their own personal forums for sharing experiences, communicating with parents, students, etc. And the reason, most likely, is the significant time spent on mastering modern computer technologies that are rapidly developing, as well as the fact that mastering them requires high professional skills. In particular, we are talking about the exchange of experience in the use of cartographic guides on a specific subject, namely geography, and the use of experience in the implementation of GIS technologies in education.

It should be noted that currently Ukraine's educational institutions pay more and more attention to computer support of learning [6]. Even before the beginning of the pandemic, educational computer software and programmes for testing knowledge in various disciplines were used in the educational process. The active development of IT technologies and WEB-mapping affected the information procurement of the educational process, and the result appeared − some stages of the educational process changed their form. More and more electronic educational publications are being created. And therefore, new requirements are being put forward to the methodological support of the educational process, which must take into account the use of interactive technologies.

In modern conditions, the so-called "cloud-oriented learning environments" are being formed, thanks to which educational mobility is strengthened, and the quality of teaching increases. The cloud-oriented learning environment is understood as an artificially built system consisting of cloud services and providing educational mobility, group cooperation of teachers and students for effective, safe achievement of didactic goals [7]. Web-based learning environments not only allow students to purposefully solve tasks, but also contain unique hints and support which facilitate the learning process itself [8]. Having analyzed the global experience of cloud-oriented educational environments, S. H. Lytvynova notes that their implementation contributes to significant cost savings and introduces innovative approaches to training [9]. An example is the Israeli project TeacherTube, which is similar to YouTube. This project gives the participants of the educational process the opportunity to use video services, to have access to a wide range of videos on various educational and social topics. In China, the educational cloud project 3Tcloud is being implemented, which is aimed at saving the budget of local governments, optimizing the distribution of resources and reducing the costs of computer maintenance [9]. In the USA, the BYOD approach is being actively introduced into the educational process, which involves students freely using their own gadgets for educational purposes. The main goal of this approach is to increase students' productivity, mobility and satisfaction, and to reduce IT costs [10].

Further we are going to analyze how the latest technologies are used in the study of geography. Until recently, teachers used only paper maps and atlases to teach geography and history, and contour maps could be used to consolidate and test knowledge. The traditional approach to creating maps assumed that a map was a final product that showed the spatial location of objects through the use of certain symbols or classifications, etc. However, the source information was not available to the users, and they could not reclassify or regroup the data, to get more information about the area being mapped [11].

The so-called electronic textbooks (e-textbooks), electronic books (e-books) [12], electronic educational guides and interactive maps (IC) are becoming effective as teachers' assistants and students' tools. In one of our previous publications, we considered the problems faced by developers when using paper maps in the creation of electronic educational guides [13].

Educational technologies in teaching modern geography are promoted by Kenneth Lynch and his co-author [14]. They provide examples of e-learning and clarify that considering best practices in educational technology will increase the universality of geography teaching in higher education institutions. Based on an overview of the pedagogical options associated with e-learning using a variety of technologies and their promotion of versatility in the use of e-learning approaches, they identify and illustrate the new spaces that have become available for teachers and learners of

geography [14]. Using interactive maps and electronic cartographic guides to study geography is a significant step forward on the way to improving the quality of education.

The use of high-quality teaching aids in the teacher's work is a guarantee and one of the important conditions for the successful study of geography. The formation of the products for the electronic study of geography requires the interaction of specialists from three different specialties: geography, education, and informatics. Philip Rees and others express the opinion that limiting access to geography study materials, their hermeticity, significantly simplifies the perception of the world. Therefore, geography teachers usually want their students to work with web-based materials, using a wide range of digital resources in cyberspace that inform them about the world. They want to guide students through the resources and their use, empowering them to do their own research in the future [15]. However, the free choice of materials for learning on the Internet requires certain skills and competencies from those seeking education. Certain recommendations regarding the choice of initial materials by students and teachers when studying geography are given in the work of I. Magdaș et al. [16]. The authors of this work emphasize the fact that it is necessary to master certain competencies, for example, designing a method of using digital visual materials in the electronic study of geography. This competence can be realized thanks to the use of modern electronic cartographic materials. Leading specialists in distance learning methods, teachers and methodologists have come to the conclusion that a textbook or atlas scanned or translated into electronic format cannot be considered an electronic teaching aid, since the basic principles of development of traditional and electronic cartographic manuals are significantly different. The topic of the methodology of creating these manuals remains relevant.

Stefania Palmentieri in her research [17] thoroughly analyzes the new perspectives and possibilities of e-learning geography, which have arisen with the advent of distance learning and which will arise in the post-pandemic period. She emphasizes the importance of using modern geo-information technologies, which contribute to SMART-learning (when there is independent, motivated, adaptive learning, enriched with resources and integrated technologies) and improve teachers' qualification.

In Ukraine, the development of modern electronic cartographic materials began only recently. Currently, the State Research and Production Enterprise (SRPE) "Cartography" and the Private Joint-Stock Company "Institute of Advanced Technologies" (IAT) are engaged in the creation of electronic training manuals. In the field of electronic publications, the IAT has created geography atlases, which are also presented in a certain educational online platform, but they are only copies of paper publications. The SRPE "Cartography" has created electronic teaching guides in geography, which are so far the only electronic manuals for general educational institutions in Ukraine in terms of their capabilities and content. All manuals have been approved by the Ministry of Science and Education of Ukraine. They were also awarded abroad. For example, the electronic educational guide "Ukraine − Physical Geography of Ukraine. The 8th grade" won the 2nd prize in the Digital products category at the 26th International Cartographic Conference in Dresden in 2013.

A very effective solution for the implementation of information and communication technologies in education is the use of existing network services, for example, Google, Amazon, Office 365 from Microsoft. With their help, the so-called "teacher's electronic cartographic online platform" (TECOP) began to be created [18, 19]. Considering the specificity of such educational subjects as geography and history, there is a need for high-quality content to fill such electronic classrooms. Currently, we are only at the stage of accumulating experience in their creation and use. The lack of methods for creating such online platforms is currently an urgent problem and needs to be worked out.

The research goals. The purpose of the publication is a detailed analysis of the content and functioning of the teacher's electronic cartographic online platform, a study of its advantages over

traditional manuals in organizing and conducting geography education; presentation of pedagogical possibilities and methods of studying geography on the basis of such online platform. Of course, the achievement of the research goal correlates with the study of the experience of using various educational platforms, software products, and geography study technologies.

2. THE THEORETICAL BACKGROUNDS

Based on the developments of H. Prastiyono et al. [20], who believe that electronic learning models are able to transform students into 21st century learning agents, we can highlight their following advantages:

- simplified access to materials;
- the possibility of passing an electronic test with automated verification, which facilitates the work of a teacher or lecturer;
- attractive design of educational materials;
- access to online tools at any time, in any place and under any conditions;
- availability of navigation keys for access to materials, their editing.

The creation of an electronic teacher online platform as a component of the education system is currently an objective necessity and provides the necessary conditions for the constant and continuous education of teachers [1]. The development of such facilities for geography teachers gives the teachers an opportunity to develop their own technology for studying geography, which is extremely important in the context of modern trends in education.

The teacher's electronic cartographic online platform (the TECOP) is a platform that contains electronic content in the form of electronic map guides, interactive maps and posters, intended for use by teachers when teaching certain subjects.

The TECOP is quite effective for collective work in class and for remote lessons. It is primarily intended for teachers. However, students can also be users of electronic cartographic materials on this platform. In practice, teachers already recommend the educational content of the TECOP to students for performing practical tasks and other independent work. Currently, teachers and students have the same access to the platform, but in the future, when the platform has been filled with new electronic maps, the organization of access should take into account the interests and aspects of various subjects of the educational process. All these solutions will raise the study of geography to a higher level, especially in the conditions of distance learning.

Features of the TECOP:

- teachers' access to modern cartographic guides online (actually teachers receive data in real time);
- the possibility of organizing collective work during distance teaching and in the classroom;
- the possibility of forming the content of educational cartographic guides, managing information layers and animations.

The advantages of the teacher's electronic cartographic online platform are related to the advantages of interactive maps and electronic cartographic guides over traditional maps. Traditional paper maps have a static spatial limitation and are shown in one defined scale, they limit the display of objects and phenomena due to the spatial limitation of the paper format. Of course, it cannot be argued that everything that can be seen on a monitor is better than in a book, but by correctly using the possibilities of electronic information, it is possible to achieve significant positive results. Another shortcoming, and a very noticeable one, is that paper map guides are updated once a year, and most, especially wall maps, once every five years. This does not satisfy the requirements for the study of geography and history in the New Ukrainian School.

3. RESEARCH METHODS

The theoretical and methodological basis of our research embraces modern ideas about the role and place of geography in the knowledge of the surrounding world, the formation of information and communication competence, lifelong learning and innovativeness.

To achieve the goal of the research, the following methods and techniques were used: historical analysis (to study the experience of creating e-learning products and their tools, basic technologies of studying geography); system approach and structural-graphic modeling (when determining the main requirements for the development of an online platform for studying geography based on electronic educational cartographic guides and interactive maps); grapho-analytic techniques and technical methods of information processing (when developing the methodology for filling the teacher's electronic online platform).

The main reference and information base of our research was textual, cartographic and other resources of the cartographic reference bureau of the SRPE "Cartography", as well as materials collected personally by the authors or with their direct participation in the process of conducting research, processing and editing the electronic content, which was conducted in the editorial office of the SRPE "Cartography".

4. THE RESULTS AND DISCUSSION

The SRPE "Cartography" already has considerable experience in creating electronic educational cartographic products and is currently actively filling its TECOP with electronic content.

The principle of formation of the TECOP of the SRPE "Cartography". It is planned that the TECOP will have three classes in it: a geography class, a history class, and a primary school class. The structure of each class includes structural components in the form of electronic guides and interactive maps. Educational posters are also added to the geography office.

In figure 1, the principle of forming the teacher's online platform is presented, where the structural components are already filled. It can be seen from the note that guides that are already functioning in the online platform are shown in red, and those that are planned to be included are shown in blue. In the geography class, there are 2 electronic guides ("General geography. 6th grade", "Topographic map") and 2 interactive maps ("World", "Africa").

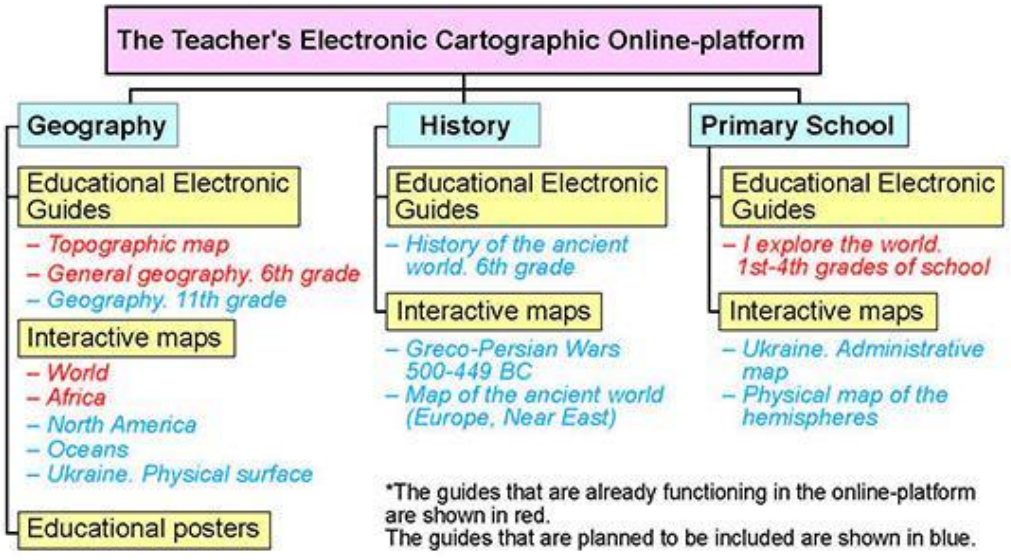

Figure 1. The principle of formation of the TECOP of the SRPE "Cartography"

The electronic educational cartographic guide "Topographic map" consists of eight chapters:

- Topographic map.
- Scale (theoretical information; measurement of distances).
- Conventional signs (conventional signs for a topographic map on a scale of 1:10,000, 1:25,000, 1:50,000, 1:100,000).
- Coordinate systems (geographic coordinates; rectangular coordinates).
- Classification and nomenclature (theoretical information. determination of the nomenclature of a map sheet of a given scale).
- Orientation angles (theoretical information; practical tips; measurement of orientation angles).
- Problems that are solved on the map with the help of contour lines.
- Sketching the terrain by sight.

The electronic guide presents theoretical information and practical advice on working with a topographic map, which is an important educational and methodological component of work in geography lessons.

The electronic educational cartographic guide "General geography. 6th grade" was created based on the paper atlas-textbook "General Geography" for the 6th grade of a general education school, developed and published in print at the SRPE "Cartography". The content and structure of this electronic study guide corresponds to the current geography curriculum for the 6th grade. This guide consists of eight general chapters:

- Geographical knowledge of the earth (How people's ideas about the Earth changed; Knowledge of the Earth in ancient times and in the era of the early Middle Ages; Geographical discoveries during conquering expeditions in the New World; Greek settlements in the Northern Black Sea Coast; The Age of Great Geographical Discoveries. Geography of the New Age; Discovery and research of Antarctica; Arctic research; Domestic scientists-geographers).
- the Earth in outer space (universe, galaxies, stars and planets; solar system; types of movement of the Earth; the Moon is a satellite of the Earth; phases of the Moon; formation of tides; starry sky).
- land on the plan and map (geographical map; changing the scale; plan of the terrain; conventional signs; sketching the terrain by sight; image of land and water on the map).
- lithosphere (internal structure of the Earth; movement of the Earth's crust; relief of the Earth's surface; relief of the bottom of the world ocean).
- hydrosphere (composition of the hydrosphere; map of the oceans).
- atmosphere (structure and composition of the atmosphere; climatic zones and regions of the world; climatic map of the world).
- biosphere (natural zones of the world).
- the Earth is a planet of people (nations and population density of the world; races; religions; political map of the world; Europe; administrative map of Ukraine).

Some of the topics are divided into electronic pages that give a more complete view of the topic as a whole, placing emphasis on the main elements of the content. Maps play an important role in the electronic guides, which are an important component of geography lessons.

For a more complete picture of the area under study, all sections of the electronic guide are illustrated with slides, small informative captions to them and interesting geographical facts for the curious. All additional information contained in the photo captions is consistent with maps and diagrams.

Examples of the interface and design of the educational electronic guide by the SRPE "Cartography" are shown in figure 2.

Figure 2. An example of the content of the educational electronic guide "General Geography" for the 6th grade

In all sections of both courses, there are animations on maps, pictures, diagrams and in the texts that allow you to simulate a real geographical situation. To test knowledge on each topic, test tasks are provided. To pass the test successfully, the student must study all the topics, be able to analyze the information learned while studying the courses and freely operate with basic concepts. This enables students to self-monitor their knowledge.

The advantages of electronic educational cartographic guides in the TECOP are as follows:

- hierarchy is provided (sequence of presentation, division into sections, topics, subtopics, chapters, paragraphs, etc.);
- a simultaneous, purposeful impact on the organs of hearing and vision is carried out (this principle is fully applied in electronic guides, the only limitations are the technical capabilities of the computer);
- it is possible to use cross-references as the most effective way of presenting the material, which allows you to optimize the information "stuffing" of the guide and ensure quick and reliable assimilation of knowledge. (Links are also widely used in ordinary training manuals, but you should not overuse cross-references, because the need to frequently turn pages in order to return to the previous material impairs the perception of new material);
- it is possible to quickly and easily make various changes (modifications) and add content;
- provision of active feedback, that is, an instant response of the electronic guide to some user action. It is this feature that fully supports independent learning, while

conventional manuals provide only passive feedback (for example, exercises with answers or tests).

The design of the educational electronic guide in the TECOP should contribute to the aesthetic and convenient presentation of the educational material for its easy assimilation. At the same time, the text material should be limited in order not to tire the student. Text characteristics, such as the type and size of the font, can significantly affect the readability of the information presented in the electronic guide. An educational electronic guide page should contain a minimum number of sharply different, contrasting fonts. Use of sans-serif fonts is recommended for the main text of the page, and decorative fonts are recommended only when necessary.

The colors in the electronic study guide should ensure a good and fatigue-free perception of information, help in aesthetic design and facilitate easy assimilation of the material. The use of light text on a dark background is permissible only if it is clearly visible, which is achieved by making the entire text bold. Pages with mostly text information should have a light background. It is recommended to make the font color standard black or dark blue. Red font is permissible only for some headings and highlighting the most important information.

Currently, there are 2 interactive maps in the teacher's online platform: "World" and "Africa".

The advantages of interactive maps in the TECOP are as follows:

- map images can be presented in a conventional scale, because they are displayed on a computer monitor or projected on a screen, and the existing scaling function allows you to change the scale of the image in an acceptable interval. This greatly expands the possibilities of using interactive maps to study geography;
- the possibility of choosing the content of the map, a successful combination of its layered presentation of information. With the simultaneous display of several layers of information on the digital map, it becomes possible to see new regularities in the placement of objects, the distribution of phenomena;
- increasing the informativeness of maps by ensuring the simplicity and ease of perception of cartographic material. Interactive maps encourage independent creative thinking and thus raise the level of teaching geography.

When studying geography and history at school, interactive maps effectively replace wall maps, offering a far better quality. They can be used both for learning new material and for correcting and testing students' knowledge, skills and abilities. At the same time, the effectiveness of the teacher's work increases significantly.

According to the traditional scheme, the teacher uses wall maps and atlases in the lesson, and formulates tasks on contour maps for homework. At the same time, checking the work done by the student at home is similar to a situation when a teacher and a student communicate "one on one". In contrast, checking the learned material with the help of interactive maps allows the teacher to carry out collective work - to immediately affect the perception of the material by many students.

A very successful approach is when any image of an interactive map is converted into monochrome, making it possible to apply color and highlight the main or necessary information.

The TECOP of the SRPE "Cartography" involves the creation and filling of the online platform with modern interactive maps. At the same time, a number of such cartographic works are already presented in it as electronic content (figure 3).

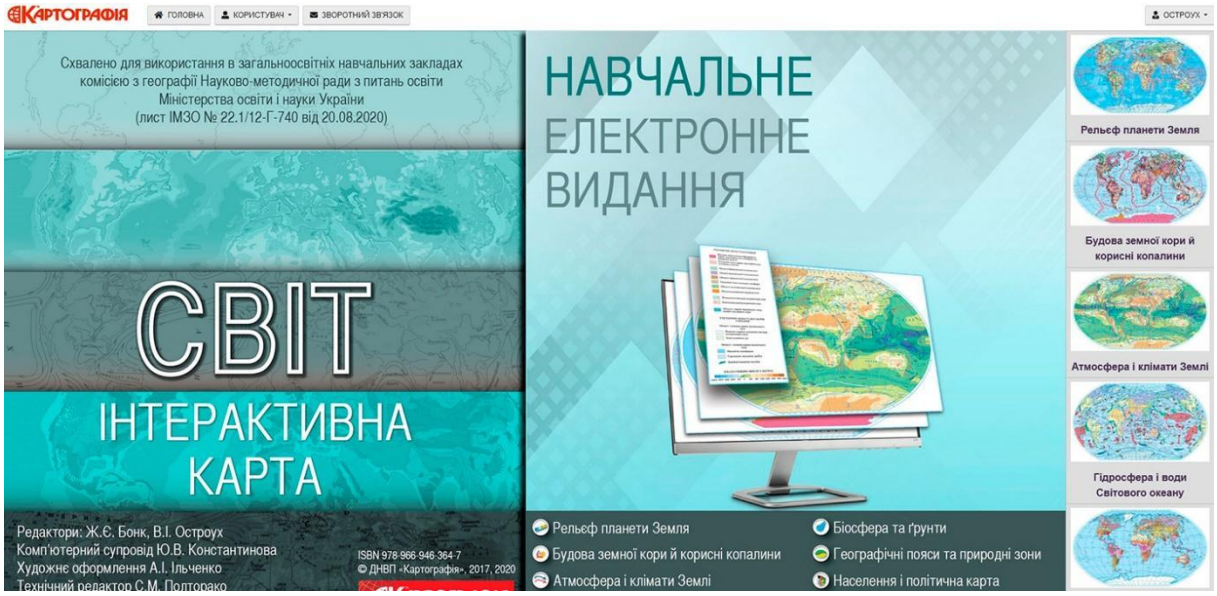

Figure 3. Interactive map of the world in the TECOP on the website of the SRPE "Cartography", https://kgf.com.ua

The TECOP of the SRPE "Cartography" provides online access for teachers to modern educational cartographic works that have the appropriate approval and recommendations of the Ministry of Education and Science of Ukraine.

Examples of the interface and content of interactive maps are shown in figure 4:

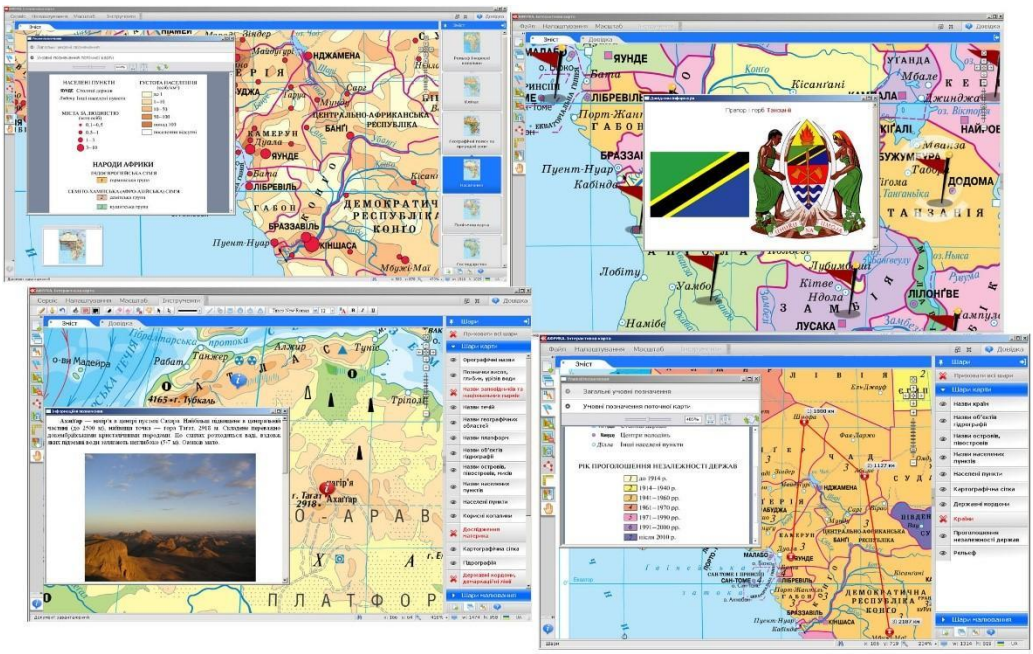

Figure 4. An example of the user interface and content of the interactive map "Africa", https://kgf.com.ua

The drawing tools, which are integrated into the interactive maps, provide an opportunity to create unique, hand-drawn, new conventional markings and place them on the map. It is advisable to do this in the editing mode. Also, we advise to create a reference library of new cartographic signs and record them in the file on the computer. The layer of new conditional

designations should be superimposed on the geographic base or on top of the thematic load of the map with the possibility of visualization and printing. Undoubtedly, the introduction of an editing mode to interactive maps does not aim at full and permanent updating of the content of maps, because this process is complex, requires specialist knowledge, skills and a lot of time. But the very idea of editing significantly expands users' capabilities, promotes the development of their creative abilities.

It was at the time of global challenges brought about by a pandemic and war that the TECOP from the SRPE "Cartography" passed approval, and gained about 3,500 subscribers, of which 2,590 are teachers (as of March 2022) and all this in one academic year. Teachers send positive feedback and suggest ways to expand the platform, add guides for different grade levels, and suggest curriculum topics that should be included in the TECOP. Such cooperation with geography teachers and methodologists is very useful. Unlike cartographers, teachers have a better understanding of which parts of the curriculum need to be reinforced with cartographic material in order to present them in the TECOP.

5. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

Thus, the formation of educational information resources based on the combination of knowledge bases with systematized knowledge by subjects and educational materials created by teachers is a trend of modern education. Such a model of the educational process is an integral part of the teacher training system. This significantly increases teachers' motivation and activity, stimulates the virtualization of thinking, develops readiness for group work, and the ability to access various sources of information. The use of informational educational resources to study geography at school is a significant step forward on the way to improving the quality of education.

Today we can talk about the formation of a completely different type of educational platform − the Teacher's Electronic Cartographic Online Platform.

The teacher's electronic cartographic online platform opens up new prospects in teaching geography and history. It has a number of undoubted positive properties that favorably distinguish it from traditional educational environments:

- teachers' access to modern cartographic manuals online (receiving data in real time);
- the possibility of organizing collective work during online and offline training;
- the possibility of forming the content of educational cartographic guides, managing information layers and animations.

Due to the diversity of the presentation of the material and interactivity, it can be argued that the TECOP is oriented towards multi-vector application. In the future, educational platforms will be developed by increasing their functionality (with more GIS analysis functions in them), improving the interface and implementing online help functions.

In the future, the SRPE "Cartography" envisages expanding the content of the TECOP. First of all, an electronic educational map guide for the 11th grade will be added (in order to prepare students for external independent assessment in geography) and a number of interactive maps, such as "North America", "Oceans", "Ukraine. Physical surface". Another promising direction of the TECOP development is the presentation of a number of wall maps in it. Work is currently underway to make a number of wall maps in interactive mode.

Based on all of the above, it can be concluded that the Teacher's Electronic Cartographic Online Platform is a promising direction of informatization of education, and we believe that its involvement in the study of geography will only increase in the future.

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ЕЛЕКТРОННИЙ КАБІНЕТ УЧИТЕЛЯ ЯК СУЧАСНИЙ ІНСТРУМЕНТ І РЕСУРС ДЛЯ ВИВЧЕННЯ ГЕОГРАФІЇ

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Анотація. У статті розглядаються тенденції і новації сучасної освіти, зокрема використання інформаційно-комунікативних технологій. Реалії сучасного навчального процесу в нашій країні, зокрема дистанційне навчання та воєнні події, змушують шукати можливості для взаємодії між педагогами та учнями віддалено. Враховуючи, що педагоги все частіше звертаються до електронної форми подачі навчального матеріалу учням, дається приклад застосування інноваційного підходу у вивченні географії, а саме використання можливостей ВЕБ-картографування. Увага зосереджена на використанні нового виду методичного матеріалу для допомоги всім учасникам навчального процесу – онлайн-платформи для

вивчення географії та історії. Для подання учням якісного електронний контенту в картографічній формі пропонується створення так званих «Електронних кабінетів учителя». Колективу Державного науково-виробничого підприємства «Картографія», на ресурсах якого функціонує «Електронний кабінет учителя», вдалося започаткувати процес створення та закласти основи функціонування цих видів електронного навчального ресурсу. Кабінет учителя представлено як набір сучасних електронних навчальних картографічних посібників, плакатів та інтерактивних карт. Саме в часи глобальних викликів у вигляді пандемії та війни представлена онлайн-платформа схвалена, пройшла апробацію і отримала численних підписників. Метою даної публікації є детальний аналіз наповнення та опис принципів функціонування електронного кабінету вчителя, дослідження його переваг перед традиційними посібниками в організації та проведенні навчання з географії. Розкриваються педагогічні можливості та прийоми вивчення географії на базі представленої онлайн-платформи. Описуються загальні особливості оформлення електронних матеріалів у такому кабінеті вчителя. У даній публікації також унаочнено інтерфейс створюваної онлайн-платформи та дається приклад оформлення інтерактивних карт у ній. Даються перспективи щодо розвитку висвітлених питань та наповнення електронного кабінету вчителя новим контентом.

Ключові слова: електронний кабінет учителя; інтерактивна карта; електронний навчальний посібник; вивчення географії; дистанційне навчання**.**

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