Traditional and Interactive Ways to Effectively Organize Cartography Classes

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Abstract: This article covers the topic "methodology for improving cartographic competencies on the basis of a step-by-step teaching model as an pedagogical scientist" from a scientific-theoretical point of view. Cartographic competencies occupy an important place in the modern educational system, as they allow students to effectively apply geoinformational technologies and analyze geographic data. The author, analyzing the basic principles of the step-by-step teaching model as an pedagogical scientist, shows the importance of this methodology in the development of cartographic competencies. Through the results of the research presented in the article, it is scientifically substantiated how the step-by-step teaching model can be effectively used in the formation of students ' cartographic skills. Recommendations and practical examples intended for teachers are provided, and the tools and methods necessary for the practical application of this methodology are provided. The article also reveals the role of innovative pedagogical technologies in the development of cartographic competencies. The results of this study serve to encourage active student participation and enhance their critical thinking skills by innovating in the educational process.

Introduction: Cartography classes are one of the most basic sections of geography education, which forms a number of important skills in students, such as spatial thinking, competence in working with harita, source analysis, visual representation of information. In traditional methods, cartography is generally limited to practical activities expressed in paper maps and textbooks. However, the use of digital technologies, interactive methods, online platforms and interactive activities in the modern educational process provides an opportunity to enrich the old traditional approach, make classes more interesting and effective. In an era of increasing globalization, the need for spatial analysis of economic and social processes, the formation of spatial thinking, map perception and practical skills has an important place in students. Thanks to the enrichment of traditional methods with digital-interactive methods, it will be possible to take cartographic literacy to a new level, improve the quality of education and develop the necessary competencies for the future activities of young people. In this scientific article, "traditional and interactive methods of effective organization of cartography lessons" is analyzed in detail. It considers, first of all, certain advantages and limitations of traditional teaching methods. Then the integration of modern interactive methods, digital platforms and printing and digital tools, methods of effective implementation in the course of the lesson are explained through examples. The article also provides experimental research, Foreign experiments, methodological recommendations and scientific conclusions.

METHODOLOGY

Traditional methods in geography and, in particular, cartography lessons primarily imply a direct explanation of the teacher through a textbook, lecture, classroom whiteboard and paper maps, atlases, wall posters. In this approach, the teacher tries to strengthen knowledge by delivering ready-made knowledge to students and through their Q & A [1]. Printed textbooks and atlases are the main source of information, and independent practical work also takes

the form of more drawing, finding a scale, measuring distance, writing annotations.

The main features of the traditional approach: a lesson in the center of the teacher: will be mainly in the form of a lecture, explanation or question and answer. The main tool is printed maps: atlas, mural cartouches, pictures in textbooks. Assignments: often drawing on a board in a class, changing the scale, lowering the climatic indicators given in the table in a simple graphical form, etc.k. Form of work: solo or frontal [2].

Advantages of traditional methods. Convenience and familiarity: many teachers are accustomed to this method, there are textbooks and paper maps. Also, the technical base is minimal-no special computer, interactive whiteboard, digital applications are required. Order and control: it is easy for the teacher to manage the class in one format, establish order, take lessons in a pre-planned scenario. Exhibitionism: mural maps, color atlases are also specific visual tools, and robust printed haritas shape the reader's Spatial Perception at a basic level [3]. Understandable theoretical basis: through a lecture-pedagogical method, the teacher can consistently explain theoretical concepts, prevent errors.

Limitations of traditional methods. Passive pupil: in the lesson, the student is often in the role of listener, viewer. Active participation, creative approach, cooperation develop less. Limited practical interactivity: adding or deleting different layers on printed maps, updating information in real time, animation or 3D view, GIS analysis is not possible. Lagging behind technological progress: in the current digital age, only printed materials are limited to meet the needs of the reader, with little access to independent research, online resource use, distance learning [4].

Lack of sufficient motivation: due to the lack of active participation, group project, interactive competitions or digital visual aids, students ' interest sometimes decreases. Thus, traditional methods are distinguished by a certain advantage and simplicity, but cannot fully satisfy the requirements of modern education. Therefore, the need for enrichment with interactive methods, digital technologies is emerging.

Interactive methods and modern digital technologies: application in cartography lessons. Interactive methods are advanced pedagogical technologies that refer to the active participation of students in the lesson, cooperation, creativity and elements such as research, question and answer, solving problem situations. They ensure that education is organized in a "student center" rather than a "teacher Center" [4]. Instead of a traditional lecture or oral explanation, interactive techniques are dominated by group work, role-playing games, cluster, problem questions, Project, and presentation.

The main essence of interactive methods: students move their hands independently (or in a group) during the course of the lesson, draw up a map, look for information, communicate with each other. It will be in the role of a teacher – a guide, a consultant, a creator of circumstances. The lesson is conducted in a" visual – practical – Independent " Order, and the creativity of students develops.

The role of digital technology. Digital technologies – combined with interactive techniques, take cartography lessons to a whole new level. Including: GIS programs (ArcGIS, QGIS): practical training in students – the creation of various layers, thematic mapping of vector and raster data, analysis, formation of inference skills. Online platforms (Google My Maps, ArcGIS Online): readers can work on one map in batch mode via the internet, leave comments, perform team projects. Interactive whiteboard: allows you to place, edit different characters, records, lines, dimensions directly in the classroom on digital maps. 3D technologies: showing Mountain, Valley, urban structures in three dimensions, students further develop spatial thinking. Mobile applications (Collector for ArcGIS, QField): collect geo-information in field conditions, attach images, videos with geoteg, analyze the result together in the classroom.

Application of interactive methods in cartography lessons. Group project: for example, drawing a"map of the optimization of the transport system in the city center " with a group, searching for information from various sources, comparing electronic maps. Problem situation: "Why does the scale of some regions break on the world map? Which projection is relevant in this?"Readers are looking around such a question, testing different projections on GIS. Role-playing games: in the role of "Urban Planning Council", students argue over the division of the city into divisions, the location of social objects, the consideration of the nature of the landscape. Online collaboration: group mapping at ArcGIS Online, solving topological problems alongside comments and comments. This enhances interactive mode [5].

Debate or "mental attack": "What are the effective ways to reflect environmental problems on the card?"The chapters and groups defend their opinions and cite realistic arguments. Thus, interactive methods and digital technologies transfer cartography lessons into a modern, creative, research-oriented, hands-on preparation-based form.

A combination of traditional and interactive methods:

practical solutions. Combinatorial model. The traditional and interactive approaches listed above can give the best result if they harmonize in exactly a combinatorial model, rather than competition. That is, at the beginning of the lesson, the teacher shows a traditional poster or printed map, explaining the basic concepts in a clear and simple way. After that, an important part of the lesson will be held in the form of interactive projects, practical classes on online platforms, group discussions. In the combinatorial model, the lesson can be as follows: introduction (5-7 minutes): in the traditional style, the teacher announces the topic, indicates the main goals and questions, shows the main elements on the board or on the wall map. Main part (20-25 minutes): interactive method (Group, problem, online collaboration, role-playing game), work with digital platforms, casting students in the lead role, independent or group assignments. Conclusion and reflection (5-10 minutes): the teacher returns to the traditional approach and concludes from the subject, questions and answers students, fills in the shortcomings [6]. Example: the combination of traditional maps with digital platforms. For example, on the topic" political map of the world": printed map: the teacher uses a mural political map to show the borders of the main states, capitals. Students use a specific fact sheet, official schedule, or Atlas. Interactive part: readers enter real-time comments on the world political map in ArcGIS Online or Google My Maps, place flags, add additional information (population, national income). The process of Group "discovery" occurs. Conclusion: the teacher writes a conclusion on a traditional board, reinforces the topic by talking about the differences and advantages between a pre-printed map and a digital map.

Methodological advantages. Visual and technical comfort: printable map – understandable to everyone, unhindered, does not depend on the internet or computer. But the interactive part is a digital platform – multi-layered, constantly updated, enriched with animations and proof information. Interest and activity in readers: print – gives the foundation of traditional knowledge, gives a digital – creative, project spirit. Wide coverage: provides internal (classroom) and external (Online, field) integration [7]. The topic is not in a limited form, but also includes independent research, online resources and mobile technologies

CONCLUSION

As a general conclusion, it can be said that traditional methods (printed maps, textbook, oral explanation) are definitely necessary for the effective organization of cartographic lessons, since they serve as a fundamental foundation. But within the framework of the modern educational standard, it is a requirement of the period – to enrich these methods with interactive methods (digital technologies, GIS, online platforms, collective projects), increase student activity and creativity, form real practical competencies. Thanks to such an integrative approach, the effectiveness of classes increases, it is ensured that students are motivated and ready for digital spatial thinking in the future.

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