

Date: 27th December-2025

SOME ISSUES OF USING INFORMATION AND COMMUNICATION TECHNOLOGIES IN GEOGRAPHY LESSONS

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Abstract: This article highlights the role and importance of information and communication technologies in the global education system using the example of geography education, and analyzes the essence of the concept of ICT, its advantages over traditional educational tools, and some aspects of its use in geography lessons.

Keywords: information and communication technologies (ICT), geography education, interactive maps, geoinformation systems (GIS), remote sensing, multimedia educational tools, artificial intelligence.

Introduction. Information and communication technologies (ICT) are increasingly playing an important role in the global education system. The rapid development of digital technologies has created the need to introduce new forms and tools into educational processes. In particular, the use of ICT in teaching geography not only enlivens lessons, but also serves to deepen students' geographical knowledge and skills. The term ICT in a broad sense includes various computer and telecommunication technologies - computers, the Internet, audio-video systems, software products, and allows users to create, store, transmit and process information. In general, ICT serves as the technological basis for information exchange and teaching in a modern educational environment.

Main part. ICT is usually considered an expanded form of the concept of information technology (IT). It includes not only computer systems and programs, but also telecommunications equipment such as telephone and radio signals, Internet networks, audio and video transmission technologies. The goal is to create a single digital environment that allows users to use all aspects of working with information. In the field of education, the concept of ICT refers to all types of digital devices, software platforms and media used in the learning process. This includes computers, tablets and smartphones, projectors and interactive whiteboards, software operating via the Internet, educational platforms, etc.

Geography, which is considered a subject of study, requires visualization and interactive learning due to the nature of the planet Earth, natural processes, socio-economic territorial systems. In traditional education, geography was often explained using atlases, maps, and globes, but modern ICT tools have taken this process to a new level. ICT tools used in geography lessons are divided into several main types.

Interactive maps and virtual globes: These include various online map services and programs. For example, with the help of Google Maps and Google Earth, students can explore any point on our planet in detail. Google Earth is a three-dimensional virtual globe



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that depicts the surface of the Earth with satellite images; in the process of studying it, students have the opportunity to change the scale and zoom in on different places, analyze the relief in 3D format, and even organize virtual trips. The advantage of interactive maps is that while working with them, the student activates the map - for example, finding a specific place through a search, changing layers (roads, climate, relief, etc.), measuring distances. This makes the lesson more interactive and interesting than with a traditional paper map.

Geographic Information Systems (GIS): The concept of GIS refers to the use of special software tools to enter, store, analyze, and visualize geographic data into a database. By introducing GIS elements in geography lessons, students are introduced to methods of spatial analysis and scientific research. For example, using the ArcGIS Online platform or the open-source QGIS program, schoolchildren can complete simple projects - for example, by placing population data on a map of their neighborhood to create a population density map, or plotting environmental observation data (for example, the results of measuring the water quality of a local river) on a map. In the US, ESRI has provided free access to the ArcGIS Online system to all K–12 schools, which is a great help for geography teachers in integrating GIS into lessons. In Germany, it is also noted that every school is connected to the Internet and has free access to online GIS services. These examples show the increasing importance of GIS technologies in geography education on a global scale.

Remote Sensing and Earth Observation Tools: Satellite images and aerial photographs are important sources for studying geographic processes. Currently, agencies such as NASA and ESA provide various views of the Earth's surface through open databases. Google Earth also has a function to compare some historical satellite views, so students can observe, for example, the reduction of forest areas or the expansion of cities over time. These types of tools are especially effective in showing environmental problems, climate change, and urban development processes in geography.

Video lessons and multimedia content: Various multimedia materials are used to attract students' attention and facilitate their understanding of the topic. For example, short documentaries and animated clips from sources such as National Geographic or BBC Earth explain geographical processes with real-life examples. Showing processes such as volcanic eruptions, tsunami waves, or melting glaciers in the form of cartoons or graphic animations makes the lesson even richer. During the pandemic, video lessons were organized in Uzbekistan through national TV channels and online platforms - even distance learning lessons in geography were presented on YouTube and TV. This experience has strengthened the role of digital content in education.

Online tests and interactive assignments: Using ICT tools, it is possible to organize online tests and quizzes in geography. Using special platforms such as Kahoot!, Quizizz, or simple Google Forms, the teacher can conduct a quick test during or at the end of the lesson and get the results immediately. Such interactive assessment creates competition and interest among students, and at the same time it is convenient for the teacher - the

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analysis of the results is automatically formed. Also, in distance education, the practice of uploading online assignments to LMS (Learning Management System) platforms and having students complete them there is expanding. This process reduces the use of paper and serves to digitize the educational process.

Artificial intelligence and intelligent systems: As mentioned above, although AI technologies are not yet widespread in school geography lessons, their potential for use in the future is great. For example, a teacher can use a model like ChatGPT to find interesting facts for a lesson plan or introduce programs that create interactive conversations on a specific topic to the classroom. Educational chatbots like EduBot, which work on the basis of AI, can answer students' questions or guide them in independent study of the topic. A recent UNESCO survey found that about a third of school teachers in Uzbekistan have started using artificial intelligence tools (such as ChatGPT) to plan and conduct their lessons. This is certainly a positive trend, and it is likely that special AI-based learning platforms will be created for geography lessons in the future.

Conclusion. The use of ICT in geography education allows organizing not only the “showing” stage of the lesson, but also the “search-compare-analyze-draw conclusions” process in a digital environment, which enhances the active work of the student: actions such as finding a place through interactive maps and Google Earth, changing layers, measuring distance and area clarify the student's spatial perception; GIS elements form a culture of territorial analysis and research by placing simple data on a map, creating density or distribution maps; monitoring changes over time (urban expansion, forest reduction, water dynamics) based on remote sensing and satellite images explains ecological and socio-economic processes with real examples; video lessons and multimedia content make the subject lively and understandable, and online testing platforms provide fast, transparent and easy-to-analyze assessment; At the same time, artificial intelligence tools can expand the possibilities of lesson design, resource selection, and individual support, bringing geography lessons to a more personalized and competency-based format in the future.

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