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SOURCE OF GEODESIC AND CARTOGRAPHIC KNOWLEDGE

Hayitova Maqsuda Rafiq kizi
National Research University "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers", E-mail: hayitovamaqsuda14@gmail.com
Ro'ziqulova Oyxumor Shermamatovna
National Research University "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers", E-mail: oyhumor.ruzikulova@gmail.com
Zikirov Orifjon Olimjonovich
"Inspection on the control of agro-industrial complex under the Cabinet of Ministers of the Republic of Uzbekistan" E-mail: zikirovorifjon798@gmail.com

Abstract. The article aims to reveal the secrets of the science by organizing games using the Globe in teaching the science of Natural Geography to the students of Geodesy and Geoinformatics, based on the methodology of H. Hasanov**.**
Key words: geography, globe, pedagogical technology, Earth laws, complexity.

Introduction. Geography is a science about the laws of nature on Earth and their description. In recent years, natural geography has been included in the curriculum for students of the geodesy and geoinformatics direction and is taught in the 1st cycle. Geography is a science about life. It is a complex science that includes such areas as natural conditions, geology, geomorphology, climate, geography of soils and plants, geographical distribution of animals, minerals, population and related issues, energy, food, health geography. In our opinion, complexity is not as important in any science as geography. This is the main achievement of the science, which is important both theoretically and practically. Knowledge of geography serves to develop a person's horizons. In this regard, the services of H. Hasanov, the mentor of scientists who contributed to the development of geography are invaluable.

Problem statement: High-quality personnel are needed to work in the fields. Known as the "Uzbek Magellan", H. Hasanov devoted his life to the science of geography and its popularization. He devoted himself to the foundations of the culture of the Uzbek nation, that is, to national literacy, especially geographical literacy, scientific and historical values [1]. As a linguist, geographer, and toponymist, H. Hasanov worked effectively on the etymology and correct spelling of geographical names.

The scientist's doctoral thesis on the topic "Geographical Heritage of Middle-Age Scientists of Central Asia" (1967) was a unique personal feat during the era of the authoritarian regime. With this scientific work, the scientific geographical heritage of more than forty Central Asian scientists during the former Soviet era was realized and popularized. As a result, the scientific heritage of many of our ancestors was recognized by foreign scientists. As deputy editor-in-chief of the journal "Science and Life", H. Khasanov also served to popularize the achievements of all sciences, including geography. H. Khasanov's creative direction is multifaceted and extremely instructive.

Methodology: We have a lot of information about H. Hasanov's pedagogical skills in conveying geographical knowledge to students through literature and from the lessons he taught his teachers. Among them, Assoc. Prof. P. Gulomov, Assoc. Prof. I. Nazarov, Prof. M. Mirakmalov, Prof. A. Egamberdiev, Prof. T. Mirzaliev, Prof. A. Soliev, Prof. N. Dolimov and others can be mentioned. I witnessed many of the life conversations during my postgraduate studies at the Department of Natural Geography of the National University of Uzbekistan. In 2009, a special volume of the Bulletin of the Geographical Society was dedicated to the 100th anniversary of H. Hasanov's

birth. It describes the scientific and popular activities of the teacher based on the life testimonies and memories of his students. This journal also serves as a guide in studying the scientific heritage of the teacher.

Currently, H. Hasanov is still teaching at the Department of Geodesy and Geoinformatics of the National Research University of the Republic of Uzbekistan, while working as an associate professor. Reason: Students studying in such areas as Geodesy and Geoinformatics, Cartography and Remote Sensing, Innovative Technologies in Remote Sensing of the Earth: Natural Geography, Geography of Uzbekistan, Agricultural Geography, Geodesy rely on their Geographical knowledge in studying the laws of land zoning, height zoning, rhythmicity and applying them in their fields in order to study them in depth. In teaching the above subjects, work has been carried out in a systematic manner with one of the geographical scientists of the National University of Uzbekistan, Prof. M. Mirakmalov, for many years. The idea of restoring the Beruniy Globe came to H. Hasanov, who made it in the laboratory for the production of educational equipment in the city of Perm and supervised its delivery to Uzbekistan.

In extracurricular hours, a regular excursion is organized with students to the Faculty of Geography and Geoinformation Systems of the National University of Uzbekistan. In order to increase their knowledge and worldview in the fields of geodesy, cartography and cadastre. During the excursion, actions such as the creation of a globe and its delivery to Tashkent; Studying the laws of the Earth with the help of a globe and taking them into account in practice; Determining coordinates and measurements using a globe are performed.

I have taken my students to the Tashkent relief-landscape globe 10-15 times to date, and each time I discover new facets of the globe. The globe is a source of knowledge.

Results: In order to increase the practical value of the excursion, a knowledge competition between groups on the topic **"The role of the Tashkent Globe with relief landscapes in the study of natural geography"** is also regularly held. This is aimed at increasing the practical value of the trips. It is intended to meaningfully organize students' independent education, promote their work on themselves, develop teamwork skills, and attract attentive listening.

Competition conditions:

1. Come up with a suitable name for the team, design and explain using computer graphics.
2. Draw a relief globe (Geopicasso).
3. Based on the study guide, 5 questions prepared in advance are sent to the next group and answered.
4. Based on the natural atlas, create a 10-question crossword puzzle dedicated to the natural conditions of the Earth and present it to the next groups. After the specified time, the crossword puzzles are checked and the correct answers are determined.
5. Using the information obtained on the globe, the science teacher sends out quick questions and answers (some questions are given below).

The knowledge competition is held in a heated atmosphere, with uncompromising, sharp scientific monologues from all three groups.

Quick questions on relief globe data:

1. The reason for the creation of the Tashkent Globe with relief and landscape and its delivery to Uzbekistan is the restoration of the Beruniy Globe.
2. The globe is made in a convex shape, the vertical scale is 1:200,000; the horizontal scale is 1:7,000,000.
3. The surface is 13 square meters
4. What is the largest Tashkent Globe on Earth in terms of size? (3)

5. According to a Russian historian, the globe was created in 995-990 or 1016-1017. Find the last name of the historian (Bulgakov)
6. Where did the prime meridian pass through on Beruniy's globe (from the Kholidot-Azores Islands)
7. The scientific name for the theory of opposites - (antipode)
8. How did Beruniy name the Atlantic Ocean - (Western Ocean)
9. The reason why H. Columbus went to America based on the map drawn by whom - (P. Toscanelli, on the map of 1457, India was incorrectly depicted as being in the Western Hemisphere)
10. The most erroneous and confusing name (America)
11. Diameter of the Beruniy globe-(5 m)
12. When was the last zonal practice of Uzbek National University students carried out? (1990)
13. The authors of the relief globe, Ivan Egorovich Oshev, who became blind due to a car accident at the age of 9. He created it together with Morozov, Shklyaev, Ravenka and Ivanov.
14. Made in 5 years from 1979 to 1984
15. 1 cm = 70 km = 1:7,000,000 Vertical scale 1 cm = 2 km
16. In 1953-54, the second name of the peak of Jamalungma was given - because geodesist George Everest was the first to climb it
17. How the surface of the world's oceans is measured - through a level grid
18. Why is the globe scale 1:7,000,000 - One in 7,000,000 of the visible horizon from space
19. The reason why meridians are measured every 15 degrees - they make an angle of 15 degrees in 1 hour. 360:15 = 24 days are formed.
20. Relief globe equatorial circumference - 392 cm
21. H. Hasanov's initiative to get help from foreign students of the Faculty of Journalism in October, when the main men were harvesting, was "Whose name would you like to remain in history?" 8 students raised their hands.

Conclusion. Such healthy scientific competitions help each student to work independently, read books, listen attentively during extracurricular trips, and increase their knowledge. Through games, their interest in science increases, and they work independently on themselves.

We wish the scientists working today at the Faculty of Geography and Geoinformation Systems of the National University of Uzbekistan, which is considered the pioneer of geography in Uzbekistan, perfection and a worthy successor to great teachers like Kh. Hasanov.

The idea of restoring the Beruniy globe, which Kh. Hasanov dreamed of, has been realized, and with its help, Abu Rayhon Beruniy and Hamidulla Hasanov are still imparting knowledge to students of Uzbekistan.

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