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Research Article

USING PROBLEMS AND EXERCISES IN ORGANIZING PRACTICAL LESSONS

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ABSTRACT

In this article, the role and importance of problems and exercises in the training of qualified geography teachers in higher education institutions and in the transformation of theoretical knowledge acquired from this subject into practical skills and competences is highlighted. In it, geographical problems and exercises are divided into 5 types according to the level of complexity, and they are explained with the help of examples.

KEYWORDS

Geography, practical activity, problem, exercise, logical thinking, knowledge, skill, competence, geographical law, practical skill.

INTRODUCTION

The role of the General Earth Knowledge course is very important in the training of qualified geography teachers in higher educational institutions. General Earth science is an integral part of the system of geographic sciences, and studies the nature, structure, and laws of development of the geographical crust, which is considered the most complex layer of the Earth. By studying this subject, students will learn that the geographic crust is the product of long-term interactions and interrelationships of the lithosphere, hydrosphere, atmosphere, and biosphere. As a result, geography teachers who have a deep and

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comprehensive knowledge of the nature of our planet, who use its natural resources wisely and pass on its protection to the younger generation, are trained.

The main results and findings

From the results of the analysis of the study of the educational plan of the higher educational institutions, in particular, 60111000 - Geography and economic knowledge basics, it can be seen that the audience allocated to general professional and specialized subjects in the curricula consists of most of the hours of practical training.

Theoretical and practical activities of students are closely connected with each other in practical training. During practical training, students perform practical training tasks using textbooks, study guides, various literature, maps and atlases, tables, statistical data, problems and exercises. As a result, it was important for them: to know the current state of certain natural geographical objects, the processes that are occurring and may occur in it; analyze digital data, create profiles, draw graphs and diagrams using various sources and tables given in training manuals; Competences and skills are formed such as comparing the natural components of nature with each other and their organic relationship, if one of its components is affected incorrectly, it in turn causes a change in the state of other elements of nature, and understanding the essence of various geographical laws by solving various exercise problems.

The main task of the practical training classes in the General Earth Science course is to further expand and strengthen the knowledge, skills and competences formed during the lecture and teach them to apply them in practice. This knowledge, skills and abilities allow to acquire, strengthen and apply theoretical knowledge that is complex in it. In practical training, the main form of student activity is practical work. During the implementation of this practical work, students will develop competences related to science.

Therefore, practical training is considered a reproductive teaching method that ensures the unity and connection of theory and practice, and allows students to listen to lectures and apply the knowledge gained during independent education in practice.

Problems and exercises are very important among the tasks performed during practical training for students to acquire geographical knowledge perfectly. Problems and exercises are determined according to the content of each practical training topic.

In the educational system, the level of mastery of the academic subject by students is determined not only by theoretical knowledge, but also by the ability to apply the acquired knowledge in different conditions. If a student knows theorems and laws in mathematics, but does not know how to solve problems, it shows that he

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does not know mathematics. Unfortunately, most teachers do not know that this also applies to geography. Because geography can be used in many problems and exercises, just like mathematics, physics, chemistry and biology. For this reason, it is necessary to take into account that the knowledge acquired by students is not only defined by geographical terms, which are often required of them, but also that they can apply them in problem situations. One of the most effective ways for students to acquire geographical knowledge in the educational process is to clarify the content of the topic using problems and exercises.

The practical importance of problems and exercises in the implementation of geographical and mathematical competences is considered important for the development of students' knowledge, skills and abilities, logical thinking abilities, increasing the effectiveness of geography education and achieving the geographical goals set by future geography teachers.

Problem - consists of problematic questions, focused on the solution of certain geographical events and phenomena, and forms geographical skills and competencies. The main purpose of using questions in the problem is to connect, clarify and understand geographical concepts. Problem questions are also important in learning geographic language and symbols.

Exercises are the most effective method connected with practice in forming skills and competences in students. By practicing, the student acquires theoretical and practical skills and competence, remembers the previously acquired knowledge. Theoretical and practical skills and qualifications cannot be acquired without practice. The most important aspect of problems and exercises is to activate students' creative thinking during the lesson. In order to activate the thinking activity of students, when solving geographical problems, they are taught to remember not only geographical events and phenomena, but also the causes and characteristics of their origin, to think and explain about the laws and consequences of development, to compare data, to identify their similarities and differences, and to draw correct conclusions.

Problems and exercises used in geography education can be classified according to the level of complexity, form and meaning. We can divide the problems offered to students into 5 types depending on the level of complexity. Only they should not be confused with the level of knowledge acquisition. Problems and exercises according to levels of complexity are as follows:

- first level issues. Common knowledge may involve repetition and comparison. Such questions are mostly used to test the memory of students. For example, if you go to a field training camp with an azimuth of 2350,

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what azimuth and horizon direction will you return to the university?

- issues of secondary complexity. Solving them requires the ability to apply some geographical laws and compare some phenomena. Also, problems at this level require students to mobilize their knowledge from other subjects to find their solution. For example, if the air temperature at sea level is +290 C, how many degrees will the air temperature be at an altitude of 5200 meters?

- in solving third-level problems and exercises in geography, it is required to perform several actions, to know the importance of the object in nature and in human life. It will be necessary to make interdisciplinary connections, to try to find a solution to the problem using the acquired knowledge. For example, the Amudarya flows through the vicinity of 100,000 to 500,000 population centers, that is, cities? Place the cities in order from source to source and analyze why these cities are populated.

Solution: First of all, cities located on the banks of Amudarya are found on the political map. Then, using the map legend, cities are separated by population and listed in descending order from source to source. It is analyzed why the population lives a lot.

Answer: Termiz, Nukus, Turkmanabad, etc

- students should be able to mobilize the knowledge they have received from other subjects when answering questions and exercises of the fourth level of complexity. It is also necessary to have problem-solving skills in several stages. For example, if the local time in Tashkent is 1500, what is the local time in Tashkent and Nukus?

Solution: It is known that the time in one meridian circle is found using the following formula.

$$m = M - N + f$$

Here, M is the time zone, N is the time zone number, m is the local time, and f is the geographic longitude of the place. Tashkent is located in the 4th time zone. Its geographical length is determined by time as follows:

$$69^0 : 15^0 = 4{,}6$$

$$1 \text{ hour} - 60^0$$

$$0{,}6 - x$$

$$x = \frac{0{,}6 \times 60}{1} = 36$$

So, the length of Tashkent in local time is 4 hours and 36 minutes.

The time in one hour zone is calculated using the following formula.

$$M = N + m - f$$

Here, M is the time zone, N is the time zone number, m is the local time, and f is the geographic length of the

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place. Based on the above information, we find the local time in Tashkent using the formula.

$$m = M - N + f = 15^{00} - 4 + 4,36 = 15,36$$

Answer: When it is 12 noon local time in Tashkent, it will be 12.36 noon local time. The local time of the city of Nukus is also found in this order.

- in the fifth-level problems and exercises related to geography, in addition to performing several calculations at the same time, it is required to compare objects with each other, to determine the reasons for similarities and differences between them, and to apply geographical laws and theories in finding solutions to problems. For example, determine the air temperature at the highest point of Mount Nurota, when the water is densest at the level of the Caspian Sea.

Solution: First step: It is necessary to know the absolute heights and find their value. Caspian Sea -28 m, the highest peak of Nurota Mountain is called Hayatboshi, its height is 2169 m.

$$28\ m + 2169\ m = 2197\ m$$

The second stage. The measurement to be found in this is the temperature at which water is most dense. Water becomes densest at +40 C when heated. Its density changes when the temperature of water exceeds +40 C and decreases.

In the third step, it is necessary to find the temperature at the height of 2197 meters, using the law that the temperature decreases by 0.60C for every 100 meters as you go up.

$$100\ m - 0,6^0\ C$$

$$2197\ m\ - x$$

$$x = \frac{2197 \times 0,6}{100} = 13,2$$

At the fourth stage, the problem in the problem should find its solution, that is, the temperature at altitude:

$$4 - 13,2 = -9,2$$

Answer: At the level of the Caspian Sea, when water is densest, the air temperature at the highest point of Mount Nurota is -9.20 C.

As can be seen from the above, the higher the level of complexity of the problem, the more it requires the student to think and perform complex logical operations.

It should not be forgotten that in the practical lessons of General Earth Knowledge, as well as mathematics, physics, chemistry, biology and economics, geographical concepts and knowledge are created by working with numbers, statistical data, and facts. It is necessary to be able to work with these numbers, statistical data, facts, make calculations based on the goals, perform mathematical operations, make observations, draw conclusions based on changes in

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their dynamics, and have the ability to make decisions. This, in turn, makes it necessary to study the system of geographical sciences in depth, conduct experiments as close as possible to real reality, and test theoretical laws.

As it can be seen from the above, based on the characteristics of geography sciences, the central place in their study is occupied by problems and exercises. Reason:

- firstly, solving problems and exercises provides an opportunity to apply the acquired knowledge to practice, the main goal of studying science;
- secondly, by solving problems and exercises, students' activity in learning increases;
- thirdly, the problem teaches the student to think and draw conclusions.

CONCLUSION

Therefore, the word "problem" should be considered as an object of thinking, not just to perform a task on the basis of calculation, to determine the answer. But it should not be forgotten that the task of practical training is not to repeat the knowledge gained from theory, on the contrary, it is to implement the knowledge gained from theory, independently analyze (analysis and synthesis) the given questions and tasks, and acquire the skills and abilities that a geography teacher needs to know in the future.

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