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Azərbaycan Coğrafiya  
Cəmiyyəti



# Coğrafiyanın müasir problemləri:

## Elm və təhsilin inteqrasiyası

Beynəlxalq elmi-praktiki konfransının

Materialları

II Cild

## Modern Problems of Geography: Integration of Science and Education

International Scientific-Practical Conference

Proceedings Book

Volume 2




Minister of Science and Education of the Azerbaijan Republic





Azerbaijan Geographical Society (Azerbaijan),




Institute of Geography named after

H. Aliyev, ANAS,  Guba branch of the Azerbaijan State Pedagogical University

(Azerbaijan),  Tourism and Management University (Azerbaijan),  Bursa Uludag

University (Turkey),  Tiraspol State University (Moldova),  Ministry of Education and

Science of the Kyrgyz Republic (Kyrgyzstan),  Jizzakh State Pedagogical Institute

(Uzbekistan),  Tabriz University (Iran)

## "COĞRAFIYANIN MÜASİR PROBLEMLƏRİ: ELM VƏ TƏHSİLİN İNTEQRASIYASI "

### BEYNƏLXALQ ELMİ-PRAKTİKİ KONFRANS



## "MODERN PROBLEMS OF GEOGRAPHY: INTEGRATION OF SCIENCE AND EDUCATION" INTERNATIONAL SCIENTIFIC-PRACTICAL CONFERENCE

Cild 2 / Volume 2

November 29-30, 2022

Baku / Azerbaijan



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## USING THE "CLUSTER" METHOD IN PASSING THE SUBJECT OF THE SOIL SECTION

**Nafetdinov Shavkatullo Shukurovich**

Associate Professor of the Department of Agronomy and Soil Science of BukhSU,

**Ochilova Muyassar Alisher qizi**

Lecturer of the Department of Agronomy and Soil Science of Bukh State University,

**Ravshanov Jasurbek Fazliddin o'g'li**

Head of the laboratory of the Department of Agronomy and Soil Science of Bukh State University,

**Sultonova Nilufar O'ktamovna**

Master of the Department of Agronomy and Soil Science of BukhSU,

**Karimova Gulhayo Husenovna**

Master of the Department of Agronomy and Soil Science of BukhSU,

**Abstract:** According to modern requirements, each theoretical and practical lesson taught in agricultural universities should be based on the requirements of a new pedagogical technology. Practical training on the topic "Studying the soil section" carried out according to the cluster method increases the interest of students in the topic, at the same time creates convenience for the step-by-step presentation of information on the topic of didactic principles.

**Keywords:** Agriculture, cluster, methodology, soil section, soil horizons.

Today, in a number of developed countries, opportunities are being created for the use of modern pedagogical technologies that guarantee the effectiveness of the educational process. Among the new pedagogical technologies that are widely used in educational institutions, the Cluster method is used to convey information in the educational process as a whole, to implement the sequence, to solve problems, to scientifically organize the lesson process, and to attract the interest of the learners by the teacher. learning, dividing the educational material into small parts and revealing their content, brainstorming, working in small groups, debate, an activity or problem, mutual debate, thinking, solving problems with unity shows the eff.

In the lessons, this method is manifested in the form of a set of ideas expressed by the group members. This creates an opportunity to harmonize the ideas put forward by each member of the group and to find connections between them.

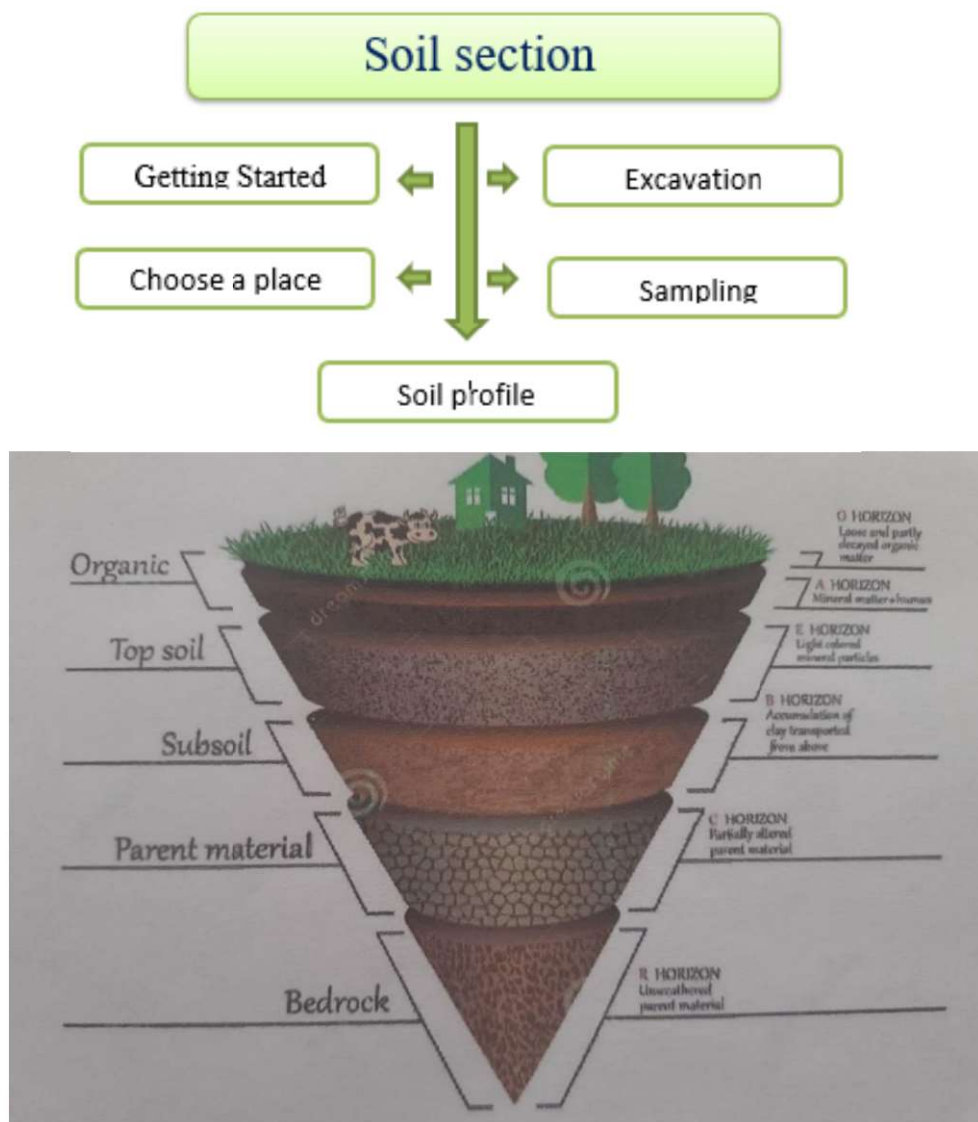
A soil cross-section is dug for a complete and detailed study of the properties and characteristics of the soil, and samples are taken from each soil horizon in accordance with the purpose of the investigation.

**Getting started:** A soil sample is a small amount of soil mass that is taken based on a certain rule, requirement, and method. The resulting small sample size should cover a large area. Therefore, the sample is taken on the basis of a specially developed rule, standard. It is obtained on the basis of soil type, location, topography, level of vegetation cover and a number of other characteristics.

Soil samples are intended to clarify the morphological description of the soil profile and to conduct various analyzes with students in laboratory-practical training.

Soil samples are usually taken in the field for practical training to conduct various laboratory analyzes and to study the structure of soils. For this purpose, special pits called razrez-kesma are dug. There are three types of pits: full (main) pits, half pits and pits.

**Choosing a place:** Choosing the right place for a pit is one of the most important conditions in soil testing. The pit should be dug in a section that is more characteristic for the place under investigation. It is not possible to choose a place for pits from excavated lands, near canals or roads, in the corners of fields where cars turn. When choosing a place for a pit, the topography of the place is taken into account.



Picture 1. Soil horizons.

**Excavation procedure:** First, the shape of the pit is determined on the selected site. For this, a right angle with a length of 150-250 cm and a width of approximately 80-100 cm is drawn on the surface of the soil. The soil pit should not only eat the layers of the soil, but also reveal the upper part of the parent rock, so its depth should be 125-250 cm, sometimes even more (until the seepage water comes out). Pits are more superficial in places where seepage waters and the gravel layer are close to the surface of the earth.

When determining that the front wall of the soil pit to be checked is vertical, it is necessary that this wall is as well lit as possible or that sunlight is falling. In order to make it convenient to work in the pit, stairs are placed on the opposite side of the vertical wall. The soil excavated from the pit is removed only to the sides. The upper layer with humus is thrown into one of the side trenches, and the soil from the deeper layers is thrown into the other.

**Soil profile:** consists of a series of genetic horizons. Soil horizons are soil layers that appear as a result of soil formation processes and are usually oriented parallel to the earth's surface, have almost the same structure and are distinguished by their morphological features. Soil horizons differ from each other by their morphological features, such as color, structure, joint. A number of horizons are distinguished in the soil profile, and they are also divided into several horizons. Each horizon has its own name and letters.





Picture 2, 3. Soil pit (razrez)

Organogenic horizon consisting of organic remains of Ao-plants; T-peat organic horizon; A1-humus accumulative horizon; A2-alluvial; B-iluvial or transient; G-gley horizon; C-mother gender; D-bottom porous rocks; Ah-ploughing horizon;

Specific horizons are characteristic for each soil type, and sometimes these horizons may not be present in the profile of some soils.

**Sampling:** Samples are taken sequentially starting from the bottom layer. Immediately after digging, the first sample is taken from the parent rock or from the bottom layer with a shovel. At the end, a sample is taken from the upper layer. The weight of the sample taken from the upper layer should be around 300-400 g, it is enough to take a sample of 200-300 g from the remaining layers.

In the middle of each layer, a layer thickness of about 10 cm is marked, and a soil sample is cut from it with a knife along the entire width of the front wall, and it is placed on thick paper. A sample of humus and arable layers is taken over the entire thickness of the layer. If the humus layer is more than 20 cm thick, then 2-3 samples are taken every 10 cm.

The region, district, village, area, field and pit number, the thickness of the layer, the depth at which the sample was taken, the date and the student's name are indicated on the paper label, and the wrapped paper is wrapped around the sample. is placed. The sampled layer, its depth, and date are also written on the paper.

**Completion of the work:** The pit, the soil is poured and reburied according to the previous

In conclusion, it can be said that the use of innovative methods in order to increase the effectiveness of the lesson in the teaching process, and the improvement of the teachers' skills, first of all depends on their special professional potential. However, the cluster method includes such universal components that pedagogues of various educational subjects can use these components, and in this direction they can quickly achieve good results. It is also important that teachers are satisfied with the training and their work.

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