

TYPICAL LINGUISTIC AND EXTRALINGUISTIC EXERCISES OF GEOGRAPHY

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Abstract

The general objective of the present research was to analyze and exemplify some of the exercises in the Geography textbooks in use, both from a linguistic and geographical perspective. The specific objectives of the present research are the following: to analyze some types of exercises; to identify and analyze a sample exercise of each particular type submitted to theoretical analysis. In order to achieve these objectives, we studied several papers of textual linguistics, semiotics, using a corpus of study in various Geography textbooks in current use in Romanian schools, at the pre-university level of education. We analyzed and included in the present paper exercises of scientific geographical analysis, description exercises, exercises for arguing and giving reasons, exercises of providing explanations. These exercises are based on the theory of encyclopedic referencing, on specialised dictionaries of geographical terms, on contextual meaning effects, on schematization of the geographical reality.

Keywords: *scientific analysis, description, identification, argumentation, explanation, scientific text writing*

INTRODUCTION

In geographical information communication, both specialised terminology and words borrowed from other sciences, sometimes even colloquialisms and idioms are used. Beside specific words proper to geographical language, seen as symbols, map sections, geographical photographs, which synthesize information in the domain to essential natural and socio-economic

elements, and, again, symbols that help us identify and make out the meaning through spontaneity.

Geography textbooks in use contain a variety of exercises: descriptions, explanations, and giving arguments. These exercises are solved with pupils in class, during Geography lessons, activities or as homework with a view to developing skills and providing knowledge of facts, changing students' epistemic and operational mastery of the science.

The general objective of the present research was to analyse and exemplify some of the exercises in the Geography textbooks in use, both from a linguistic and geographical perspective. The specific objectives of the present research are the following:

- 1) to analyse some types of exercises;
- 2) to identify and analyse a sample exercise of each particular type submitted to theoretical analysis.

In order to achieve the objectives for our research, we read works on textual linguistics and semiotics (Adam, Petitjean, 2007; Verghaegen, 1993), using a corpus of study in various Geography textbooks in current use in Romanian schools, at the pre-university level of education (Cheval, Cheval, Mihai, 2003; Mândruț, 2001, 1998; Neaguț, Ielenicz, Apostol, Bălțeanu, 2002). As we intended to carry out a qualitative study, we limited the research to a few school textbooks and we did not carry out a statistical processing of data.

EXERCISES OF SCIENTIFIC GEOGRAPHICAL ANALYSIS

Irrespective of their format, problem solving exercises are, according to Jean-Michel Adam and André Petitjean, "an analytical punctual activity having a convergence function (application of a rule, evaluation of a set of knowledge, practising for the development of a certain mechanism...)" (Adam, Petitjean, 2007, p. 212).

Schoolwork problem solving exercises consist of certain performance techniques and strategies, which consider individual, whole class or group interactional patterns, correlated with certain objectives, especially aiming at reinforcing already taught knowledge.

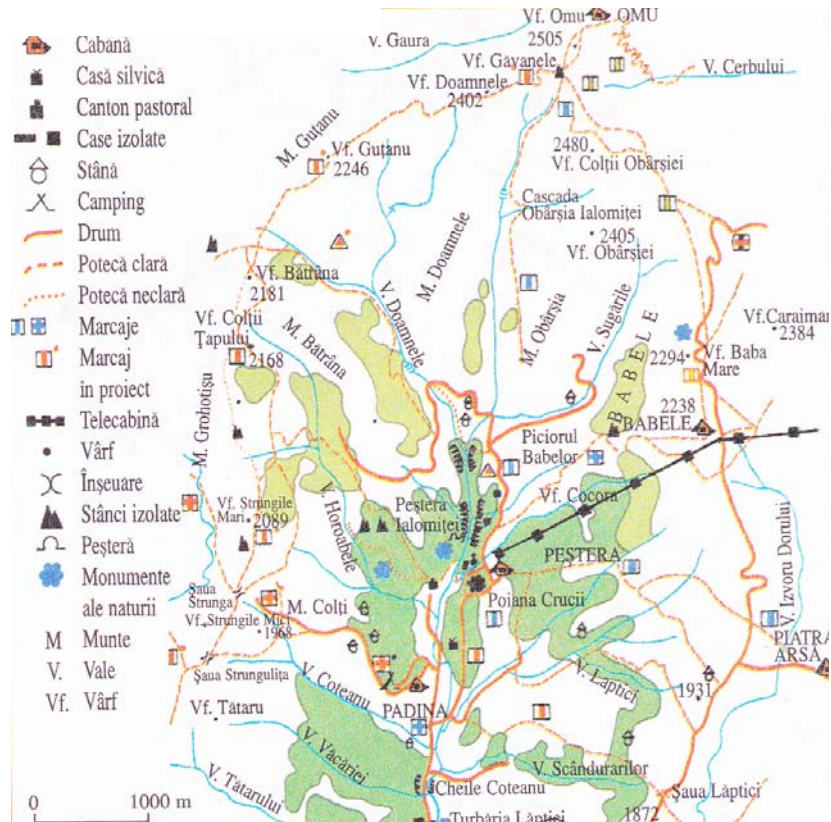
The main objective of this type of exercises is to "form the competences of understanding descriptive texts, paying attention to certain knowledge and skills (linguistic and non-linguistic), which are encountered during reading" (Adam, Petitjean, 2007, p. 212).

The rubric of such an analysis exercise can be as follows: "Look carefully at the map below. It shows the touristic potential in the Bucegi Mountains. Describe the things you notice and write a text based on your observations.

TYPICAL LINGUISTIC AND EXTRALINGUISTIC EXERCISES OF GEOGRAPHY

Let us consider the text and the iconotext below as illustrative for the description of this map fragment.

Iconotext no. 1:



Source: Mândruț, 2001, p. 28

In the textbook, this iconotext is accompanied by the following text:

Text no. 1:

„The map beside is a tourist map showing the upper valley of the Ialomiței river in the Bucegi Mountains. It is a familiar map to those who are mountain lovers and it contains well-known symbols (roads, signposted paths/tracks, sights, etc.). Supposing we are following an itinerary along the Ialomiței valley (Coteanu Gorges) from south to north (Omu Peak); identify the main sights located along the way” (Mândruț, 2001, p. 28).

The text produced:

As the author indicates, the map fragment and the text focus us on the topic title, “The Bucegi Mountains Map”. Analysing the content of the map, we notice the following geographical terms: peak, valley, mountain, saddle (or col) and toponyms: Ialomiței, the Bucegi Mountains, Coteanu Gorges, Omu Peak.

In the title and legend of the map we can notice the lexical selection of scientific terms related to the semantic domain of relief forms and tourism. By its content elements, we understand that this is a physical and tourist map of the Bucegi Mountains. This map helps us identify and locate tourist attractions (sightseeing landmarks) in the represented area.

GEOGRAPHICAL DESCRIPTION EXERCISES

Description based on a geographical photograph is frequently used in communicating specialized information in the field.

Topic-related description writing exercise: Describe the organizational settlement pattern of a dispersed village, using the study corpus below.

Iconotext 2:



Gârbova Village in Alba County, Romania

Source: Neguț, Ielenicz, Apostol, Bălțeanu, 2002, p. 103

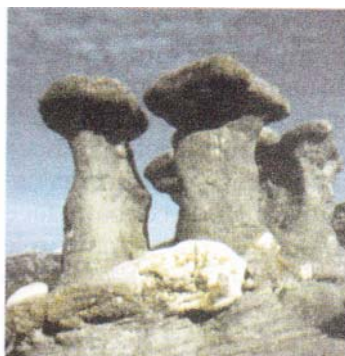
The text produced:

The village in the photo is a type of dispersed settlement, typical of the hilly region, with houses scattered along a valley. The central residential nucleus can be noticed around the park and the church. The households are separated by forest clusters sometimes and cultivated farmland other times. Beyond the central nucleus, the village spreads on the sides of a communication axis. By the distributional aspect of households in the settlement area, therefore, according to the spatial pattern description illustrated in the image, this is a dispersed village.

EXERCISES OF PROVIDING SCIENTIFIC EXPLANATION

Let us consider the following problem-solving exercise requiring learners to provide a scientific explanation: Explain the way in which the rocks illustrated in the image below have been shaped.

Iconotext 3:



Babele in the Bucegi Mountains

Source: Neguț, Ielenicz, Apostol, Bălțeanu, 2002, p. 15

The text produced:

These rocks (called Old Women, in the Bucegi Mountains) have been shaped in the way they look as a result of physical disaggregation of conglomeratic limestone, due to high diurnal temperature variations, through repeated water freezing and melting processes taking place within rock fissures, under the action of strong winds blowing at high altitude, etc. These rocks are representative of the aeolian landforms. They are among the top natural tourist attractions.

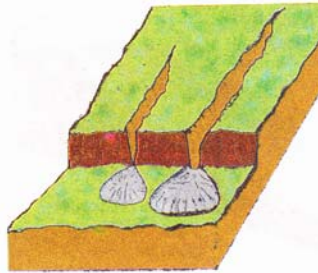
EXERCISES OF GIVING SCIENTIFIC ARGUMENTS

Giving scientific arguments sample exercises:

a – Giving arguments based on an image

Giving arguments is realized using an image accompanying the geographical discourse, an image susceptible of illustrating a course of events or geographical facts, in order to build a global mental picture on the topic presented.

Iconotext 4:



Streamcutting erosion of drainage waters – ravines and gullies formation

Source: Cheval, Cheval, Mihai, 2003, p. 36

Looking at this picture, we note that, through a linear reasoning, landforms shaped through streamcutting erosion, ravines and gullies, are illustrated in contrast. The schematization of real facts through images facilitates a better understanding of the phenomenon.

We chose as an example to illustrate the above statement the landforms shaped by the streamcutting erosion process of drainage waters on clay-textured soils as presented in the text below, matching the image above.

b – Giving reasons using appropriate language (link words to connect ideas)

The use of the adversative link word *however* in the text below introduces the contrasting concepts of shallower streamcutting erosion landforms (rills) and deeper landforms (ravines and gullies), and by the use of the concessive link word *even*, the effect is suggested: gullies are the largest landforms shaped by running water eroding sharply into soil (defined as “large and deep ditches”) (Neguț, Ielenicz, Apostol, Bălțeanu, 2004, p. 38), which “completely dislodge the soil deposit on the slope” (Neguț, Ielenicz, Apostol, Bălțeanu, 2004, p. 38) and which contribute to soil degradation and severe hillside rilling” (Neguț, Ielenicz, Apostol, Bălțeanu, 2004, p. 38). Water drainage forms are presented disjunctively using *or* as a link word, which illustrates the contrast between the concepts in as far as the depth variable is concerned: *streamcutting soil erosion to bedrock depth* in the case of ravines and “*to regolith depth*” in the case of gullies.

Text no. 2:

“Rills, however, can develop to wider and deeper landforms with fixed itineraries, which can cause soil erosion to the depth of bedrock – ravines – or even to regolith depth of soil streamcutting erosion – gullies” (Cheval, Cheval, Mihai, 2003, p. 36).

TYPICAL LINGUISTIC AND EXTRALINGUISTIC EXERCISES OF GEOGRAPHY

c – Giving reasons by adding new arguments

Let us consider the following statement: "Express two arguments in favour of the following statement: *Romania is a stability and security factor in the area.*" (Neguț, Ielenicz, Apostol, Bălțeanu, 2002, p. 117).

Reason 1. Romania is a member state of the Council of Europe and of the European Union.

Reason 2. Romania is a signatory state to the *Partnership for Peace* and is a member state of the *Organization for Security and Co-operation in Europe*.

Reason 3. Romania "has participated in multinational military exercises, some of them developed on our country's territory, and, in some NATO operations or even UNO operations, and to peacekeeping actions with troops in various conflict hotspots around the world, (...)" (Neguț, Ielenicz, Apostol, Bălțeanu, 2002, p. 113).

Or: Give two reasons in favour of the following statement: "Romania has witnessed positive developments in economy" (Neguț, Ielenicz, Apostol, Bălțeanu, 2002, p. 117).

In order to support this statement, authors provide the following reasons out of which students may paraphrase two:

- "GDP grew by 1.3 % in 2000 and, respectively, by 5.3 % in 2001, one of the fastest growth rates among former-comunist countries;

- an increase of the volume of foreign investments, which was of near \$ 8 billion at the beginning of 2002;

- decrease of the external balance of trade deficit, which was high for a long time;

- an emphasis on shifting the international trade balance in favour of western countries" (Neguț, Ielenicz, Apostol, Bălțeanu, 2002, p. 109).

Formulation and rephrasing of arguments are students' operational tasks.

EXERCISE FOR THE IDENTIFICATION OF SCIENTIFIC TRUTH

A model of problem-solving exercise of identification of geographical scientific truth is shown below: Circle the letter corresponding to true statements about geographical features.

The Moldovei Plateau is:

- a) old in its geological foundation
- b) well-forested
- c) largely cultivated
- d) a low land elevation area

- e) formed through volcanic eruptions and crustal shortening
- f) covered with mountainous glaciers
- g) rich in clay
- h) sprinkled with several small lakes

EXERCISES OF WRITING A SCIENTIFIC TEXT

According to the French linguists Jean-Michel Adam and André Petitjean (2007, p. 212), depending on the writer's intentions, text production exercises may have both a selective and a constructive feature.

A sample exercise of *selective* text-production.

Out of the cultivation of cereal crops we selected rice growing.

Iconotext 5:



Working in the rice field

Source: Mândruț, 1998, p. 45

Structural text:

Question 1 for students: How is rice cultivated?

Answer 1: Rice is cultivated in flooded conditions.

Question 2: Where are such crops grown?

Answer 2: In flatland areas of regions with warmer and high rainfall climatic conditions.

Question 3: Why is rice cultivated in flatland areas of regions with warmer and high rainfall climatic conditions?

TYPICAL LINGUISTIC AND EXTRALINGUISTIC EXERCISES OF GEOGRAPHY

Answer 3: Because it is a warm and moisture-loving cereal plant. Because cereals are grown on flatland fields.

Question 4: Where is rice mostly cultivated?

Answer 4: Rice is mostly cultivated in China. Why? Because it is a traditional crop and vital staple food for most of the population.

This is a type of exercise which combines description, explanation and giving reasons for a type of crop selected from the cultivation of cereal crops.

A sample exercise of *constructive* text-production: Describe the Sahara's climate, supposing it were not a tropical, arid.

Constructive text produced: "The Sahara Desert, in the absence of a tropical arid climate, would have another type of climate, respectively, there would not be scarce, short-term rainfall, great diurnal temperature variations, as in the tropical arid climate. This different type of climate conditions would change the current desert-specific vegetation in the area, and this change in the vegetation layer would lead to a transformation of the scenery, which is actually generated by the typical conditions of arid tropical climate. The absence of great diurnal temperature variations (of almost 60 °C) would lead to the disappearance of the aeolian relief and to the replacement of this type of relief with another one.

It can be easily noticed that the opposition *conclusive/performative* has as its priority axis the manner in which the process of information communication is construed, as the exchange of messages between the communicators is based on the balancing of "concluding from facts presented and transformation through building assumptions and reasoning" (Verghaegen, 1993, p. 98).

CONCLUSIONS

Based on the analysis of the problem-solving exercises in the Geography textbooks in use and on some works on linguistics, we have come to the following conclusions:

- there is a large number of problem-solving exercises of making descriptions, of making geographical scientific analysis, of giving reasons in the Geography textbooks in use;
- the problem-solving exercises of making descriptions, of giving reasons-providing explanations are based on the theory of encyclopaedic referencing, on the use of specialized dictionaries of Geography in particular, on contextualized meaning effects text production and on the schematization of the geographical reality;

- these exercises are solved during class activities with students or as homework tasks assigned with a view to competence development and knowledge acquisition, with the purpose of producing epistemic and operational changes in learners;

- the scientific facts are communicated through logical cause-effect reasoning by the use of such means as joining ideas with conjunctions, disjunctions, adversative/contrasting conjunctions, cause, result and purpose conjunctions;

- the discourse building strategies used by teachers are: defining, comparing/contrasting, using metaphors, quoting, self-quoting, antithesis, giving examples, giving arguments/reasons provided both by the texts and iconotexts analysed in this paper.

We notice the expresiveness of scientific language rendered by words used to formulate sentences, words seen as linguistic symbols, combined with extralinguistic symbols with the purpose of building meaning in text production. Description is a discursive procedure frequently used in defining geographical facts/concepts. It is completed by the way the argumentative-explanatory discourse is organized. The identification of the terrestrial referent is done with great precision through the monosemantic character of geographical linguistic entities with which the science of Geography operates in building meaning. Through wording and rephrasing, through quoting, as demonstrative materials, using metaphors, as quick shifts of meaning, ideas are developed in an accurate, objective, formal way, typical of the scientific discourse.

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TYPICAL LINGUISTIC AND EXTRALINGUISTIC EXERCISES OF GEOGRAPHY

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