

FIELDWORK AND GEOGRAPHICAL COMPETENCES AS A WAY TO MOTIVATE THE STUDY OF GEOGRAPHY: APPLICATION IN A SECONDARY SCHOOL GROUP

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1. INTRODUCTION

This work has made in the frame of “Information Program” about the qualifications of the Grade “Geography and Management of the Territory” (previously “Geography graduate”), that the Geography Department of the Malaga University is being realized some years in High Schools in Malaga and its province. Its purpose is to encourage final year secondary pupils begin university studies in Geography.

One of the objectives of this program is to break with old prejudices that students and teachers have, showing the real professional and practical aspect of the new Grade.

1.1. Field work like a classic method in the education of the Geography

There are many authors who, for many years and nowadays, indicate the field work as a very appropriate instrument to make the student learning of Geography more vivid and closer (AA.VV, 2004, p.121; Bailey, 1981, p.161; Frieria, 1995, p.209; Hernández, 2007, p.108; Licerias, 1997, p.297; Meyer, 2009, p.134; Souto, 1998, p.370). The advantages of the field work are unquestionable: direct contact with a concrete type of sources; intense work; acquisition of conceptual contents; to increase the motivation of the pupils; and to confront problems and real cases (Hernández, 2007, p.108). Bailey (1981, p. 162), it also adds the advantage that teachers and students can know each other.

The field work must be perfect and rigorously planned (Hernández, 2007, p.108). According to Souto (2011, p.169-170) and Meyer (2009, p.135), the fundamental phases in the development of field trip must be:

- Previously, raising the objectives and geographical purposes to develop the activity (compilation of information and preparation of materials). It is fundamental that the place to visit can motivate the pupils.
- Active observation in the excursion, writing down the results in a card of field work (promoting not to be a simple spectator and to play an active role).
- Sharing of classroom events analyzed, drawing conclusions regarding the objectives. Measurement, presentation of results and reflection.

1.2. Geographical competences in the current teaching of Geography

As teachers, we understand that the learning based in competences is fundamental to any educational level today. Therefore, in the experience that we present below, we develop activities and materials from this crucial perspective, to get a geography teaching really useful and applied to the real world. What do we mean by educational competences? It's a "know to make complex", result of the integration, mobilization and adaptation of skills and abilities (cognitive, affective, psychomotor and social) and of knowledge used effectively in situations that have a commonality (Herrero and Pastor, 2011, p.76). The White Book of the Title of Grade of Geography and Spatial Planning (AA.VV, 2004, p.180-181) develops a deep analysis about the specific competencies of our discipline:

- Combination of temporal and spatial dimensions in explaining territorial processes.
- Geographical information registry, both cartographic and statistical, and its use as a tool to interpret the territory.
- Field work and direct knowledge of the territory.
- Proposed management and territorial organization.

2. METHODOLOGY

We propose an activity for a group of last year students of a private High School in the city center in Malaga. We wanted with the activity that young people did two sessions in class (once a week so it does not take a long time), and other one more practical in the field (about three hours). Also, it provides a small field notebook with blank maps, inventories and landscape photographs (they had to complete to get a bonus in the final qualification of the subject).

2.1. First session (theory): What is a geographer? What is the Grade of Geography?

We have detected a weakness in the theoretical background on key concepts through a series of previous questions, and we have noticed they do not know about the role of a geographer in society. They also ignore the more practical and applied aspect of this discipline, focusing only on learning of encyclopedic knowledge.

So, the first session was divided in two theoretical parts: What is the geographer and how is the Grade? And an explanation of a particular practical work that a geographer can elaborate on the territory and that they can experience firsthand a field work session (meeting second-practice-).

If we want to answer the raised questions about what skills a geographer learns during their training to undertake this work, we had to refute the idea that the geographer is a mere container about encyclopedic data in physical and political accidents. It is an arduous task to demonstrate the interdisciplinary nature of geography, since many of the sciences today are seeking specialization versus holistic knowledge on related subjects.

We show the curriculum of Grade of Geography and Management of the Territory, explaining interdisciplinary subjects and the different topics they can choose to "make" his or her studies, according to their interests and vocation. Furthermore, we found interesting to explain the practical nature of some subjects with the use of tools (GIS, remote sensing...) and field trips to check in situ what happens in the studied realities in the classroom.

Once doubts resolved, we explain the field work in a particular area of the city of Malaga we would visit next week. So we made a second presentation where using thematic maps and photographs, we explain the characteristics of the area which is object of our visit (Mount Victoria), and the task they would have to do. Mount Victoria is a residual relief belonging to the physiographic unit of Montes de Malaga, which lies in the central district of the city which names it.

It is home to a large complex lithological (as a consequence of previous geological events), which, in any case, influences on biological and edaphic differences, all profoundly modified by using intense anthropic, which has undergone over the centuries (many cultures from the Phoenicians to the Romans, to Arabs and the "modern man steeped in agrarian and industrial revolution"). Inside, we found remains of terraces for agricultural use, cultivation of olive trees, landscaping applications, communications towers, remains of urban waste, lots of debris, etc., making it a marginal and undervalued in the urban context where it is inserted.

The reason for our choice, as we explain in the classroom, was because it is an area known for them, accessible, with a marginal (not integrated into the landscape) and degraded character. The intention would therefore arouse in them feelings of

environmental awareness and a critical spirit to find solutions to this milestone of ecological landscape, tourism and recreation.

2.2. Second session (practice): Field work in Mount Victoria (Malaga)

To carry out the activities of field notebooks, students are distributed in groups of two or three. This would facilitate the process of taking notes of what geographers were counting along the set route from the school to the top of Mount Victoria. The small dossier consisted of four blocks, which we also show some graphic examples:

1. Thematic outline maps: study area boundaries, hypsometry and lithology.
2. Inventory of vegetation: in order to collect a list of six or seven species with its common and scientific name.
3. Panoramic photos: prepared to facilitate the delineation of homogeneous landscape units and help establish a synthetic view of the territory.
4. Questionnaire and final survey: questions were raised regarding the most feasible solutions for environmental restoration and landscape of Mount Victoria in the territory, about the performed work done by the geographer and the acquired experience after the completion of field work.

Logically, those who collaborate in the field work were attending students during the tour to answer all questions they had regarding to the realization of the activities of the notebook (whose results we will see in the next section), and what we were watching from the different parts of the slopes of Mount Victoria. We explain the two processes related to fields of geography, human and physical. issues such as urbanization and planning, and on the other hand, reforestation, weathering and soils, were marking the climb to the top and increasing the interest of all students, excited to find the elements of reality which daily, both in class and in the media, are sometimes in a decontextualized.

3. RESULTS

Any activity in a classroom must be directed to obtain a pedagogical purpose which gives us a result the learning or developing of a set of competences in any subject we teach. Three questions are set out to be answered by the students so that they reflect on possible solutions, given the environmental degradation suffered by the place they have visited.

3.1. Assessment of the resolution about the exercises on their field notebooks

a) Thematic maps

In this point, we try to assess student's ability to transfer a series of abstractions mapping, which in a map, it can give us the keys to how the physical feature of the study area are disposed. The maps were three: boundaries of the study area, hypsometry and lithology. Looking at the results graphically, we see that two of the three maps have been completed with a great success and only one has been more deficient. The one which has obtained the worst results has been the map on which students had to draw the boundaries on the aerial image of the study area. However, despite of having the support graph, we can highlight some reasons for this fact like the one of association as a mountain area exclusively with the top, since most of the mistaken maps only circumscribe the area of study in this small space (nine of the thirteen wrong). Hence, we deduce that there is a lack of perception of stereoscopic vision on the territory (3D survey of the aerial image), looking at the pictures with low power of abstraction to draw limits which, in any case, they are already drawn in the other two thematic maps, resulting much simpler their design (more intuitive).

Another aspect to highlight it is the mismatch between students in the selection of colors for the symbolism of the legend and the absence of a clear conception of the use of standardized color intervals, that facilitates the perception of the associated information (eg, red color = high altitude, compared to yellow color = lower altitude).

b) Photographs for homogeneous landscape units

In this exercise, we wanted students visualize landscape and apply the knowledge they have learned and, with its power of abstraction, to make homogeneous landscape units of natural, urbanized, agricultural area. In this task, they are enhanced interaction skills of students and their ability to resolve what decision is the correct solution. We used two panoramic images taken of the views obtained from the top to the south and west sides.

The results were in both panoramic images presented, both in their degree of correction and the degree of separation of the units (few units = general; many units = atomization). It is also shown in the correction, that performing units, the number of people that generalize the units is bigger than the number which sprayed the landscape. This may be due to two reasons: the lack of understanding of the territory and, therefore, the generation of units that encompass several subunits, or, on the other hand, a loss in synthesis capacity and interrelation of the students.

c) Inventories

We have developed an inventory to be completed with common and scientific names of the most characteristic plant species of Mount Victoria. The aim with of this easy activity is students collect the names of species which were cited during the tour, using their skills in listening and quick transcription of data, while paying attention to

the speaker. In general, the results are more positive than in previous dynamics (better in collecting scientific vulgar names, more complicated due to its little importance in the current knowledge of the students).

3.2. Improvement measures to be developed in Mount Victoria

The answers of active students in the experience to the question: What actions would you undertake in this area so degraded? It can be highlighted two fundamental answers followed by a third one. First of all, reforestation and cleaning the place are the aspects they consider vital. Secondly, students also think important the development of protective measures, emphasizing the construction of retaining walls, followed by the establishment of a daycare center to ensure the proper use of studio space.

The next aspect that stands out in their answers is accessibility, by means of improving roads and lanes that cross the mountain, and where interestingly, the "paved" of such roads appears in several responses. It should be noted, therefore, participating pupils see direct action on the part of human being, even in acts of deep draft, through the construction of infrastructure.

3.3. Personal opinion on field work profession developed and geographer job.

The answer was unanimous and positive when we asked if they would recommend such activity. All of them without exception seem to have enjoyed the activity, using grades as "pleasant", "original" or "enjoyable", where even the "surprise" is one of the aspects that appears frequently, both by the fact that only one claims to know this place beforehand and to emphasize the spectacular views, as many claim ignorance about the professional profile of a geographer. As the only one aspect of improvement it is highlighted the temporal duration of the activity. Almost half of the students said they would have liked a longer duration to be developed with less hurry, since they "could not have got enough of it."

4. CONCLUSIONS

In short, the experience has been very positive from different perspectives. On one hand, field trips are presented as an active learning methodology very appropriated, by the advantages became clear on the answers to the questions on the field notebooks: it is highly motivating. On the other hand, field works can also serve to create social awareness among students regarding realities they have to know and modify, in our case of environmental field and promoting critical and active thinking. Any work to be done in the close future as a result of this experience, and obviously more scientific, could take shape in two lines:

1. Extend this experience to a greater number of schools, working systematically with a questionnaire for assessing the broader activity, to obtain more complete results and extrapolated at the municipal, provincial or even, depending on the number and geographical spread of centers covered.
2. Make a chronological analysis, by recording enrollment numbers in the study of Geography at the University of Malaga, since the inception of the Plan Information about studying Geography, to assess the success of these measures in achieving the fundamental objective, and that is to encourage high school students to begin their studies in the discipline.