



The Importance Given by Portuguese Science Teachers to Outdoor Activities

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Abstract

This study aimed to verify how teachers of Science and Maths of the 2nd cycle of schooling in Portugal (5th and 6th grade) value outdoor activities in their teaching practice. To this end, a questionnaire with open and closed questions, validated by three experts in Didactics of Science, was sent to 20 schools in the Lisbon area (random choice), knowing that each one included at least 5 teachers of this disciplinary group.

The questionnaire inquired about the frequency of these activities per year, the degree of satisfaction with this frequency, the identification of obstacles, advantages and disadvantages associated with them, and the choice of one successful and one unsuccessful visit with the identification of the reasons for that assessment.

Fifty-four teachers answered the questionnaire, which corresponds to a response rate of near 50%. However, only 39 (72%) of the teachers stated that they usually do outdoor activities, once or twice a year, a frequency that the majority considered to be adequate. The obstacles mentioned to the achievement of these activities were the cost of travelling, the bureaucracy process in schools and the need to fulfill the syllabus. They indicated as advantages the increase of motivation of the pupils, the improvement of teacher-student relationship and the contact with new realities. The disadvantages were in part similar to the obstacles mentioned above, but the teachers also stressed the lack of recognition of the students that they were in a formal learning activity and the fatigue and the anxiety felt due to the wish that everything runs well.

In the identification of a successful visit, the teachers emphasized the interesting features of some places and the adequacy of the visit for the pupils' age, which indicates some lack of previous knowledge about the visited places. In the identification of an unsuccessful visit, they mainly pointed out the (bad) behavior of the pupils or the (bad) guidance of the guides.

The results allow a better understanding of how teachers value outdoor activities and suggest several aspects to be contemplated in teacher training courses for a better understanding of the potential of outdoor activities.

Keywords: *Outdoor activities, Teaching Practice, Science Education;*

1. Introduction

The present study intended to verify the importance given by Science and Mathematics teachers of the 2nd Cycle of Primary School to outdoor education in their teaching practice. [1] Hill and Hill (2012) argue that research should start from a topic on which researchers have a particular interest. Thus, this research arose precisely from the intrinsic will of the authors to better understand the importance given by teachers to outdoor education. Thus, the objectives that guided the study were:

- (i) to verify the frequency with which these teachers promote outdoor activities;
- (ii) to identify their advantages, disadvantages and obstacles;
- (iii) to identify situations of success and failure in outdoor education experiences during their teaching practice.

2. Outdoor Education

Outdoor education can be seen as an activity or/and as a strategy. An activity, since students can experience a set of experiences outside school, or/and a strategy, since teachers can choose this form of education as a way to improve several skills in their students. Normally, an outdoor activity is traditionally included in a learning sequence with three parts: preparation before the trip, activities during the trip and follow up work.

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Several advantages have been attributed to outdoor education. Among them, are the following: (i) to increase the motivation to learn, independently of the content and areas of knowledge ([2] Faria, Chagas & Pereira, 2010); (ii) to develop scientific processes, using diverse working methods ([3] Reis, 2009); (iii) to provide a concrete contact with reality, also allowing a better connection between theory and practice ([4] Wickett & Huggins, 2011), (iv) to improve learning and conceptual understanding ([5] Vasconcelos, Almeida, Torres & Costa, 2015); (v) to develop personal and social skills, as cooperation, autonomy, solidarity, creativity, interaction, spontaneity, among many others ([6] Almeida & Vasconcelos, 2013); (vi) to develop skills of spatial orientation, and the mental and physical health specially during activities in nature ([6] Almeida & Vasconcelos, 2013); (vii) to deepen relationships between students and students and their teachers ([7] Almeida, 1999); (viii) to allow interdisciplinary approaches, leading to a better articulation among different areas of knowledge ([8] Monteiro, 1995); (ix) to enrich the professional training of the teachers, improving their teaching practice ([6] Almeida & Vasconcelos, 2013).

The literature is much poorer in the enumeration of outdoor education disadvantages. However, several obstacles are presented by several authors, which can be seen as disadvantages. [6] Almeida and Vasconcelos (2013) mention the following: (i) the bureaucratic aspects, such as the collection of authorizations, the amount of contacts with diverse entities, and the price of travelling; (ii) the lack of educational resources that help the dynamization of outdoor activities; (iii) the syllabus extension, which does not allow more time-consuming approaches; (iv) the time needed to plan and organize outdoor activities; (v) the lack of scientific mastery of the teachers to conduct activities in certain places; (vi) the behavior of students outside school; (vii) the risks in the course of outdoor activities. [9] Trant (2010) also includes the disruption of the school day and of the lessons of other teachers as two more obstacles.

3. Methodology

Data was collected through a questionnaire with open and closed questions, which aim to meet the objectives of the study (Table 1).

Table 1. Questions of the questionnaire and the type of question (open or closed).

Nº	Question	Type of question
1.	How many outdoor activities do you implement in average each school year?	Open question
2.	Are you satisfied with that frequency?	Closed question
2.1	Why?	Open question
3.	Please refer up to three advantages of outdoor activities	Open question
4.	Please refer up to three disadvantages of outdoor activities	Open question
5.	Please refer up to three obstacles in the realization of outdoor activities	Open question
6.	Please refer a successful outdoor activity that you have done and the reasons for that success	Open question
7.	Please refer a unsuccessful outdoor activity that you have done and the reasons for that failure	Open question

Before the administration, the questionnaire was validated by three experts in Didactics of Science. After this validation, it was sent to 20 schools in the Lisbon area, in which were at least 5 teachers of Science and Maths for the 2nd Cycle of schooling (5th and 6th grade, corresponding to children between 9 and 12 years old). Initially, 25 schools randomly selected were contacted by email, but five expressed their impossibility to apply the questionnaire. From the 20 schools that gave their agreement, 54 teachers answered the questionnaire, which corresponds to a response rate of near 50%. The minimum percentage considered by [10] Cohen, Manion & Morrison (2007) as reflecting a well-planned survey is 40%.

In the treatment of the single closed question, the absolute and relative frequency of each item (yes or no) was obtained. In the open questions, the teachers' answers were categorized *a posteriori*, and similar ideas were included in the same category. The absolute frequency of each category was then calculated.



4. Results

From the 54 teachers who answered the questionnaire, only 39 (72%) stated that they usually do outdoor activities. Therefore, the results concerning each question are precisely from this group of teachers. Thus, 36 (92%) teachers reported in average one or two outdoor activities per school year and with each class, and only 3 (8%) stated three or four. Even considering this low number, the majority considered an adequate frequency. Unfortunately, most teachers did not explain the reasons of the satisfaction of this frequency. Those who claimed that they were satisfied highlighted the necessity to fulfill the syllabus and also added that they only promote activities that improve pupils' learning. Similarly, the few teachers who were not satisfied also mention the need to manage the syllabus and the limited number of proposals and interesting places to go.

In relation to the advantages of promoting outdoor activities, 17 teachers highlighted the increase of motivation of the pupils, 15 the improvement of a closer teacher-student relationship and 14 the contact with new realities. The improvement of students' learning and a more evident interconnection between theory and practice were also advantages presented. The disadvantages were in part similar to the obstacles given. Even so, the main disadvantages were the lack of recognition of the pupils that they are in a formal learning context and the fatigue and the anxiety felt due to the wish that everything runs well.

Regarding the main obstacles to outdoor education, most teachers, 26, identified the high cost of travelling. The bureaucracy process in schools associated with the time spent on planning was mentioned by 14, and finally, 9 teachers, emphasized the need to fulfill the syllabus, a reason which limits the time for approaching each subject.

In the identification of a successful visit, 21 teachers emphasized the interesting features of some places and the adequacy of the visit for the pupils' age. In the identification of an unsuccessful visit, only a few teachers, 7, considered they had a bad experience to report and they pointed out the (bad) behavior of the pupils or the (bad) guidance of the guides.

5. Conclusions

This study sought to contribute to a better understanding of the importance given by Science Portuguese teachers to outdoor education. Overall, teachers recognize several of the advantages associated to this type of education. They also listed some of the obstacles that the literature concerning this issue discusses. The syllabus fulfillment appears as the main limiting factor to outdoor education. However, the teachers ignored the importance of outdoor education in the development of scientific processes and in the promotion of interdisciplinarity, which could be a way of overcoming the aforementioned limitation. Strangely, the risks in the course of outdoor activities were also ignored.

Therefore, the results suggest that in-service teachers' courses can be a solution to a better understanding of the potential of outdoor education and also to give clues to overcome many of the obstacles mentioned.

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