

“Management of resources” in textbooks of 13 countries: Comparative analysis since the early school until the last grade.

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The management of resources is a preoccupation of the modern society because of their over exploration. In this work we analysed the topic “Management of resources” in the textbooks from ten countries European, two African ones and another from the Middle East, since the first grade till the end of the secondary level. We used a grid constructed in the context of a European Project “Biohead Citizen”. The results showed that the textbooks give little importance to the need of the behaviour change (individual and social), in terms of the use of resources, and also little importance to sustainability.

1. Introduction

The Environmental Education assumes a transformed function in which the co-responsibility of the individuals becomes one of the essential objectives to promote the sustainable development (Jacobi, 2003). So the Environmental Education should be a *sine qua non* condition to the sustainability. The General Assembly of ONU of 1983 created the Mundial Commission about Environment and Development, guided by Gro Harlem Brundtland, which report “Our Common Future” has the objective to propose environmental strategies of long term to obtain a sustainable development around 2000 and after; recommend ways in the sense that the preoccupation with the environment turn in a higher cooperation between development countries and between countries in different phases of economic and social development and conduct to execution of the common objectives that consider the inter-relations of people, resources, environment and development (Layrargues, 1997).

The aim of this work was to analyse the didactical transposition of “Use of Resources”, in the educational system. The didactical transposition analysis makes it possible to understand why certain scientific contents are or are not taught (external didactic transposition – EDT) and, when they are on the programmes, how they are taught

(internal didactic transposition – IDT). The references about what should be transposed to the teaching are not limited to the scientific knowledge, they also include the social practices (evident in professional formation, or related to the formation for citizenship in the educational system) and the values system that some times were not well revealed (principle of precaution, of responsibility, between others) (Clément, 2006), but that were several time implicit and this work intend to identify.

2. Methodology

The corpus of this study was composed of 41 textbooks containing the topic “Use of Resources” in the context of Environmental Education in the educational system of 13 countries involved in European project FP6 Biohead-Citizen CIT2-CT-2004-506015: France (9 textbooks), Lebanon (8), Hungary (5), Germany (4), Italy (4), Portugal (3), Estonia (2), Finland (1), Lithuania (1), Malta (1), Morocco (1), Romania (1), Senegal (1). We analyse the conception *Individual responsibility versus Social Responsibility* pollution prevention and management – approaches to solve pollution problems and strategies to prevent pollution - and the content of images in the topic *Human – Nature* in the textbooks.

3. Results and Discussion

3.1 Conception *Individual responsibility versus social responsibility*

In this conception - ***Individual responsibility versus social responsibility*** – there are several aspects important to refer:

- Emphasis on the change in individual behaviours *vs* emphasis on change in life styles at the society level;
- Adhesion to moral norms descending from sources of authority *vs* community involvement;
- Moral responsibility and “literacy” *vs* political responsibility and literacy.

The analysis of the Conception *Individual responsibility versus social responsibility* revealed that in France, Morocco and Senegal there are not any references to this conception neither in text occurrence nor in images. It is important to highlight that in the other countries the textbooks have a small number of occurrences.

In the topic *Prevention in the waste of resources*, the change in individual behaviour was more common than change in social behaviour, with one exception, the textbooks from Malta. In these textbooks the highest number of references was related to change of social behaviour. There is a need of the textbooks to refer the issues of prevention waste of resources, because the resources are over consumption and their reposition is scarce. The industrialized countries have to find ways to reduce the use of raw materials and of resources *per capita*, which implies great changes in the production and consume of resources. For the countries in development, the aim is improve the prosperity using efficient technologies, which in this moment is difficult to achieve (Muilerman & Blonk, 2001)

Another item analysed was the *Management of resources*, and in here we looked at the *Strategies for sustainability of food production*. These strategies appear in textbooks of 6 countries: Italy, Finland, Estonia, Hungary and Lebanon. The issues referred are the agro-alimentary policies and the alimentary habits. The latter appears only in a textbook from Lebanon. The number of occurrences was scarce, for instance: one image (Hungary) and one textual occurrence (Estonia). It is important to highlight that the proposals to agriculture sustainability were few in social context, although it must be recognised that in certain world regions occur an improvement in the sense to implement the public policies, such as extension and assistance and research (Assad & Almeida, 2004). Within the item *Management of resources*, referred above, we also analysed the *Strategies to the resources sustainability*. In this case the economic issue appears only in textbooks from Germany, Lithuanian, Malta and Finland and in the last one only one reference. This means that the economic policies are not highlighted in all textbooks. Besides the reference related to the issue *individual behaviour* and *social policies* appear in identical number of occurrences. Nevertheless, in the Italian and Estonian textbooks only references to social policies appears. In textbooks from Lebanon and France appears only one photo related to this issue. The concept of sustainability development in practice implies change of individual and social behaviour, and transformation in the processes of production and consume. It is necessary to develop forums of discussion and involvement of the community (MMA, 2000). It is important to refer the case of Romanian textbooks, where there are no references to the strategies to the resources sustainability.

The study of these different textbooks (different grades and different countries) showed that the change of individual behaviour is more present than change in social behaviour. We also noticed that the lack of society intervention in the management of the resources and the lack in political sustainability impair the passage of information to the young citizens in the way how they can contribute to improve de sustainability development.

3.2 Analyse of the Relation *Human - Nature*

In this work we analysed the images related to the relation *Human – Nature*, specifically the images illustrating the human management, because these results can emphasise the results obtained from the *Conception individual responsibility versus social responsibility*.

The relation *Human – Nature* showed a disparity between the results from the *Conception individual versus social* and this question. For instance, in the Germany textbooks, where some references to the *Management of resources* appear, more precisely the *Strategies to the sustainability of resources*, in the case of the images that illustrate the *Human management of environment*, only one image appears. Textbooks from France, Morocco and Senegal, the *Conception individual versus social* does not appear. In the case of Morocco there are no images in respect to the relation *Human – Nature*, indicating that no importance is given to the *management of resources*. In the Senegalese textbooks, only one image appears, and this is in the item *nature with human activities*, which is not relevant and so it is a similar situation as the one of Morocco. The difference appears in the textbooks from France where there are no references to the *Conception individual versus social*, but several images that illustrate the *Human management of environment* appear; likewise a higher number of images in the item *Nature with human activities* could be found, showing some preoccupation in demonstrating to students the importance of the management of resources in the context of nature. Another important case is from the textbooks from Hungary, here there are no images in the context of *Human – Nature*, which is in disagreement with the results obtained from the item *Strategies to sustainability of food production and strategies to sustainability of resources*. These results show some deficiencies in the textbooks and so it is necessary to look at textbooks with criticism in order to contribute to improve them.

In brief, this study demonstrates the little importance given, in the textbooks, to the teaching of sustainable development, therefore contributing to put in danger the future of next generations. Once again, we observed the urgent need to change the textbooks, not only in Portugal (Tracana, *et al.*) but also in other countries, in the sense of introducing the huge contemporary problems, contributing for a better citizenship.

4. References

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