

Humans and Nature Relationship: Images and Text of Ecology and Environmental Education

SKUJIENĖ Grita¹, VALANIDES Nicos², NISIFOROU Olympia², KOZAN Adrienne³,
BRANCA TRACANA Rosa⁴, FERREIRA Claudia⁴, CARVALHO Graça⁴,
HORVATH Daniel⁵, BERTHOU Guillemette⁶,
CARAVITA Silvia⁷, MARGNELLI Nicola⁷

¹ Vilnius University, Lithuania, ² University of Cyprus, Cyprus, ³ University "Babes-Bolyai" of Cluj-Napoca, Romania, ⁴ LIBEC/CIFPEC, University of Minho, Portugal,
⁵ National Institute for Public Education, Hungary, ⁶ IUFM Montpellier, France,
⁷ Institute of Cognitive Sciences and Technologies of C.N.R., Italy.

¹ Department of Zoology, Faculty of Natural Sciences, Vilnius University; Čiurlionio str. 21/27, LT- 03101, Lithuania. E-mail: grita.skujiene@gf.vu.lt

Abstract

The present study investigated whether and how ecology and environmental education (EEE) affects the understanding of the Human-Nature relationship by images and historical, ethical and socio-economical textual information existing in textbooks targeting 14-15-year old children. Four subtopics - Uses of Resources; Pollution; Biodiversity; Ecosystems and Cycles – from textbooks of 15 different European and African countries were specifically selected, analyzed and comparisons were made. Results indicated that ecocentrism is the starting position. Historical, ethical and socio-economical dimensions relating to EEE is usually poor. There were also limited references to juridical norms and international agreements concerning environmental protection, biodiversity and sustainability issues.

Keywords: human-nature relationship, environment education, environmental ethics.

Acknowledgements

This paper is an outcome of the EU project “Biology, Health and Environmental Education for better Citizenship”: "Biohead-Citizen" CIT2-CT2004-506015, STREP of the priority 7 of FP6. We are very grateful to the other participants who gathered data or coordinated this process concerning the topic "Ecology and Environmental Education" in the textbooks from their respective countries: Mame Seyne Thiaw (Senegal), Charline Laurent & Magalie Peyre (France), Kerti Kaplinski (Estonia), Vócsei Katalin & Mária Szabó (Hungary), Desiree Scicluna Bugeja & Paul Pace (Malta), Marjo Runkamo & Anna-Liisa Rauma (Finland), Britta Oerke & Caristine Geier (Germany), Lina Abdulghani, Iman Khalil, Nadine Hijazi, Zalpha Ayoubi & Nisrine Moukaddam (Lebanon), Jurga Turčinavičienė (Lithuania), T. Aaboudi, B. Agorram, S. Selmaoui, S. Khzami (Morocco).

Synopsis Introduction

Human activity continuously transforms the planet earth contributing to rapid changes that are increasingly evident during the last 50 years (Mephram, 2005; Rees, 2003; Schlesinger, 1997). Some decades ago, the most of environmental problems were not considered as important, but now they became crucial for the survival of the earth's ecosystem. New approaches to environmental science were also applied in all levels of education including higher education and a reorientation of teacher education is an ongoing process (Lakatos et al., 2003; Salite & Klepere, 2003). It is clearly understood that differences in worldviews often influence the way people conceptualize the need to address the solution of the existing environmental problems. Understanding the Human-Nature relationship strongly affects people's worldviews (Rehmann-Sutter, 2000). From this perspective, the present study investigated the extent and the way that Human-Nature relationships are presented in the textbooks from 15 European and African countries that deal with environmental education.

Methodology

Twenty two textbooks from 15 different European and African countries targeting 14-15-year old children were selected for analysis and comparison. When Ecology and Environmental Education (EEE) was taught in a different age group, then other textbooks were included as well (fig. 1). For example, the textbook for EEE in Cyprus relates to 15-16-year-old students. Four common subtopics - Uses of Resources; Pollution; Biodiversity; Ecosystems and Cycles - were specifically selected, analyzed and comparisons were made among the 15 countries. Figure 1 presents the number of pages that are devoted in each of the selected textbooks for the four subtopics. For this analysis, the EEE grids for textbook analysis (Caravita et al., in press) that were specifically by the participants of the FP6 European Research Project Biohead-Citizen (Biology, Health and Environmental Education for better Citizenship) worked and developed. This study presents some preliminary results from the analysis of the extent and the way that Human-Nature relationships are presented in images and text indicating historical, ethical and socio-economical dimensions.

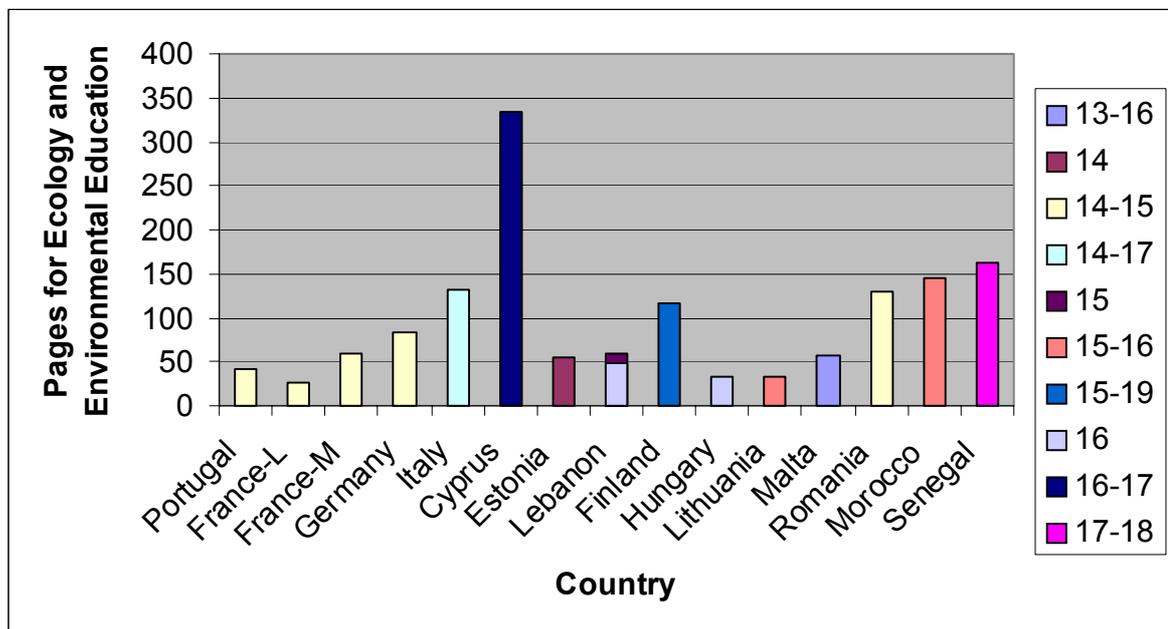


Figure 1. Number of Pages in the Textbooks from Different Countries Addressing the Four Subtopics of Ecology and Environmental Education. (Abbreviations: France-L – France-Lyon, France-M – France-Montpellier. In legend: age groups).

Results

Images: Humans in Nature

Humans in nature are representations of the relationship between humans and the natural environment as it is indicated by images included in the different textbooks. In the textbooks from Germany, Italy, Estonia, Lebanon, Finland, Hungary and Lithuania the included images indicated a balance of images representing both local and “exotic” environments, as it is shown in Figure 2. This tendency may attract

students' interest and arouse their curiosity and attention for the environment in general, instead of focusing only on their local, regional or even national environment. The coexistence of local and exotic environments in images could be considered as an attempt to point towards sustainability.

In terms of rural and urban landscapes, there were images clearly indicating that human actions had detrimental effects on natural ecosystems. These effects were quite obvious especially when images represented agricultural and urban lands, roads, etc. Pure nature, on the other hand, was not only present in wilderness, where human traces did not exist, but also in landscapes and small parts of nature in towns, such as, public gardens, farms etc. Nature was represented as wild in the majority of images from Romania, while in the textbooks from other countries (i.e., France-Lyon, Italy, Finland) the images related to natural, urban and rural landscapes, in a balanced way. In the latter case, the images indicated a balanced relationship in practice.

Another important issue relates to the way humans in nature were presented in images. The majority of images had a nice appearance except when the images referred to pollution. In most cases men and rarely women appeared in images relating to pollution or when human actions had a negative impact on the environment. Such images were included in textbooks from Malta, Morocco, Italy, Portugal, Germany, Finland, Cyprus, and Lebanon and carried the implicit message that human actions have always a negative impact on the environment and that there are no ways to compensate for this environmental damage. There were also few images relating to negative human impact that included humans as victims of the degradation of the environment. For example, in Hungary the images presented children playing in a nearby polluted river or next to the dirty and polluted area of a chemical factory. There were also cases where the images relating to negative human impact did not include people, but only machines or the polluted areas (i.e., textbooks from Hungary and Cyprus). On the contrary, the images relating to positive human impact frequently included people, mainly children, as well (i.e., textbooks from Hungary).

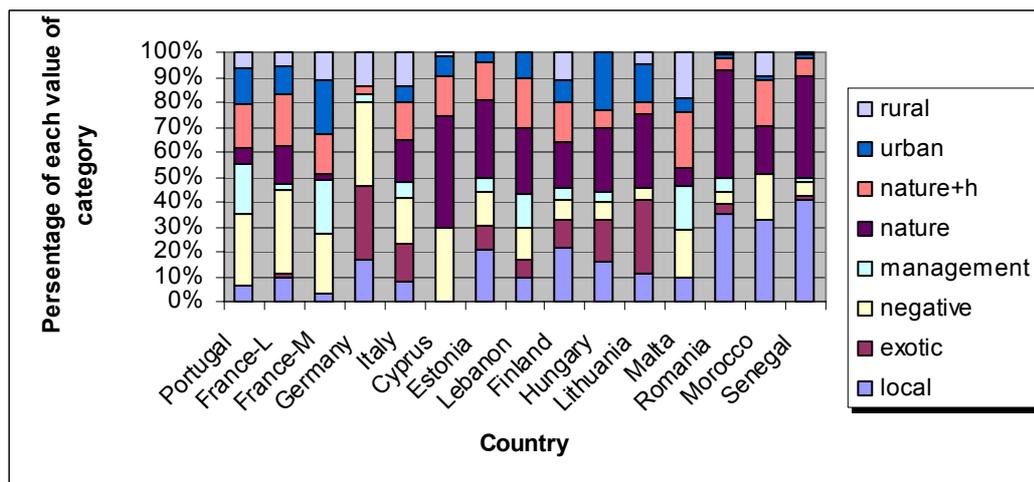


Figure 2. Percentages of Different Categories of Images Relating to Humans in Nature in the Analyzed Textbooks from different countries. Abbreviations: as in Figure 1. In legend: Categories of images.

In cases, where majority of the images excluded the presence of humans, the messages were not clear too. In such a case, people conceptualize the role of humans in nature by extrapolating their own relationship to nature. The majority of images of nature with or without the presence of humans (Figure 2, nature and nature + humans) were equally represented in textbooks except some countries, such as Portugal, France-Montpellier, Germany, and Malta. In the textbooks from these countries there existed a lot of images (pictures) indicating anthropogenic changes that could support an anthropocentric worldview and restrict the importance of biodiversity.

Proportion of images illustrating the negative human impact (Figure 2, negative) and human management of the environment (Figure 2, management) can suggest one more meaning. A large proportion of the first one indicates some indifference towards nature and inability to take action, and the second indicates a real understanding of the importance to protect the different ecosystems. The latter position emphasizes the need to acquire information about environmental problems and supports intensive human care and multiple actions for preserving the environment, as it was indicated in images in textbooks from Portugal, Germany, and Lebanon.

Historical, Ethical, and Socio-economical Analysis

The books included separate chapters relating to ecosystems and biomes (the ecological relationships and dynamics) and the interaction of humans with the environment. Chapters dealing with ecology did not even consider humans to be components of ecosystems. Humans were rather presented only in the background of ecosystems. For example, humans were mentioned in some introductory or concluding statements, or as implicit polluters and contributing to ecological catastrophes. Thus, humans are always involved in “irresponsible” actions that endanger, accelerate, and intensify environmental problems.

The titles of some chapters, such as “Human responsibility. Preservation.” clearly include some ethical dimensions (for example, France-Montpellier textbook). Italian textbook extensively describes a number of preventive and positive interventions that should be undertaken by humans. Messages for respect for nature and for all living beings were also found in another textbook from France-Lyon. In some cases, responsibility was connected to “willingness to pay the price.”

Lack of attention to environmental conservation may thus have economic implications on humans. For example, the textbooks from Portugal, Lithuania, Germany explicitly stated the lack of financial resources to preserve species and the natural environment and indicated that, in most cases, economical interests accelerate the destruction of natural habitats and ecosystems.

Differences also existed in terms of the value associated with the natural world. Lot of human activities consume a lot of resources and energy (i.e., cars, factories, food industries): that are main polluting sources contributing to rise of temperature, acidity of rain, depletion of ozone layer and reduction of biodiversity. Other living organisms are considered important and useful only to the extent that they constitute sources of food or pleasure for humans. For example, the national parks preserve biodiversity but they also constitute places for walking and satisfying human curiosity and pleasure. The value attached to national parks is rather anthropocentric in most countries (i.e., in France-Montpellier or Lithuania).

In most textbooks, there was no reference relating to juridical norms and international agreements about supporting sustainable development, (i.e., in Cyprus and Lithuania), or only few explicit or implicit sentences related to them (i.e., in Hungary and Romania). From this perspective, the best textbook that included extensive explanations of sustainability norms and international agreements was one textbook from Italy by M. Boschetti & E. Fedrizzi, 2004. This book does not treat nature conservation but deals with negative consequences of human activities both for the environment and for humans and economy as well, and sustainability is not restricted only to an ecologically relevant issue. In the analyzed textbooks, there was not also any reference related to historical perspective beyond some irrelevant information.

Conclusions

1. Results indicated that ecocentrism is the starting position. It is important to include more historical, ethical and socio-economical dimensions relating to Ecology and Environmental Education.
2. This work shows that there were limited references to juridical norms and international agreements concerning environmental protection, biodiversity and sustainability issues. It is important to include these issues for a more citizenship teaching.

References

- LAKATOS, G., NYIZSNYÁNSZKY, F. & SZABÓ, J. (2003). A New Approach to Environmental Science and Ecological Principles in the Higher Education. *Journal of Teacher Education and Training*, 3, 35-43.
- MEPHAM, B. (2005). *Bioethics: An Introduction for the Biosciences*. Oxford: Oxford university press.
- REES, M. (2003). *Our Final Century*. London: Heinemann.
- REHMAN-SUTTER, C. (2000). Biological Organicism and the Ethics of the Human-Nature Relationship. *Theory Biosciences*, 119, 334-354.
- SALITE, I. & KLEPERE, R. (2003). Biotism as a Ground for the Evocation of reflection in Teacher Education. *Journal of Teacher Education and Training*, 3, 44-58.
- SCHLESINGER, W.H. (1997). *Biogeochemistry: An Analysis of Global Change*. San Diego: Academic.