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From Anthropocentrism to Ecocentrism in Teaching Science and Social Studies²

Extended summary

Anthropocentrism is a concept or belief according to which man is the superior, most important and most valuable part of nature, even its absolute master. According to this view, only human life has an intrinsic value, while plants, animals, and mineral resources are considered as resources that may justifiably be exploited for the benefit of mankind. Ecocentrism is opposed to anthropocentrism. It makes the ecosystem and nature central ethical issues, not the mankind, while natural entities possess their own intrinsic value. Since the 60s of the 20th century many warnings have been voiced that human society had exceeded both the productive capacity of Earth and its ability to absorb the consequences of human activities. It became evident that the anthropocentric concept, with all its consequences for the environment, could not be justified and that our attitude towards nature had to change.

Given that the development of science, technology, culture, as well as the changes of lifestyle and work conditions, continually make the educational contents out-dated and in need of improvement, innovation and contemporariness are the important criteria in their selection. The responsibility and a serious approach to upgrading the curricula for all school subjects, at all levels of formal education, get a special momentum in the context of the modern-day environmental issues which resulted from the anthropocentric approach to nature, and in the

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context of the need to protect and improve the environment whose effectiveness largely depends on the shift from anthropocentrism to ecocentrism. This shift is one of the key issues in the field of environmental education and education for sustainable development, the concepts which are rightly perceived as prerequisites for survival on this planet.

The aim of our research was to identify the ways in which the attitudes of science, technology and society towards nature and the mankind's place in it have been reflected in the Science and Social Studies curricula from the mid-20th century up to this day. The research tasks involved determining whether the analysed curricula contained the following topics: 1. the interaction between man and nature: man as a part or a master of nature: 2. reasons for taking care of and protecting nature: (intrinsic or instrumental reasons). Content analysis method was used in the research. The analysed materials included the curricula and guidelines for the school subject Science and Social Studies used since the 50s of the 20th century up to this day.

In the given period, we identified a slow, but consistent and continual trend of harmonising all the elements of the analysed curricula with new scientific discoveries in terms of the need to change the mankind's treatment of the environment. The Science and Social Studies curricula development ranged from a strict anthropocentrism and antagonism between man and nature, through a moderate anthropocentrism with hints of ecocentrism, to a dominant ecocentrism. Though changes were occasionally lagging behind the trends for nearly a decade, and they were often introduced clumsily and unsystematically, it is important that they were introduced, after all. Our research confirmed the fact that educational system is a big and slow system that cannot easily follow social changes.

All examples taken from the 50s and 60s curricula indicate that Science and Social Studies teaching served to perpetuate an illusion that man is a master of nature who can use its resources indefinitely. Another inevitable conclusion is that Science and Social Studies teaching indirectly contributed to a drastic violation of natural principles, and to reducing the capacity of the environment to meet the needs of human society.

Further, we can conclude that the Science and Social Studies curricula from the 70s were marked by a great paradox. On one hand, there was an intention to include in the curricula (rather sporadically and unsystematically) the new findings about the environment, environmental problems, and the need for a better preservation of it. However, the elements of the out-dated, and potentially dangerous for the environment, contents and attitudes from previous periods still persisted in these curricula. Despite all these detrimental factors, it is a fact that the biggest changes were introduced in the curricula from the 70s, and they coincided with the changes in the society.

The results of the analysis of the curricula written in the 80s showed that little had been done in terms of their improvement with regard to environmental protection. The results of the analysis of the curricula from the 90s are not satisfactory either. Given that endangered nature and natural resources had been a hot topic in scientific and professional circles since the 70s of the 20th century, we expected that the curricula from the 90s would be much more oriented towards environmental protection. However, the analysis showed that Science and Social Studies curricula developed in this period were not significantly improved, compared to the ones

developed two decades earlier in terms of the interaction between man and nature, and man's role in its protection.

Many positive changes were introduced in the curricula written in the early 21st century. Ecocentric views dominate in them and man is perceived as a part of nature. However the issue of interaction between man and nature with the goal of self-defining man not in relation to nature, but in nature, is a part of the process of environmental learning that has not started yet. Similarly, the elements of environmental protection are introduced in the curricula, but the reasons offered for its protection are either vague or instrumental.

The protection of nature for the intrinsic value of natural entities, and not (only) to satisfy human interests, still has to be kept on hold until new curricula are written.

Keywords: anthropocentrism, ecocentrism, environmental protection, curricula, teaching Science and Social Studies.

References

- Andevski, M. (2016). Održivo ekološko obrazovanje – perspektiva za promenu kulture učenja. *Inovacije u nastavi*, 29 (4), 16-31. DOI: 10.5937/inovacije1604016A
- Bonnett, M. (2016). Sustainability, nature, and education: a phenomenological exploration. *Inovacije u nastavi*, 29 (4), 1-15. DOI: 10.5937/inovacije 1604001B
- Boslaugh, S. (2011). Anthropocentrism. In: Newman, J. and Robbins, P. (ed.). *Green Ethics and Philosophy: An A-to-Z Guide* (15-17). Los Angeles: SAGE Publications.
- Commoner, B. (1971). *The Closing Circle: Nature, Man, and Technology*. New York: Knopf.
- De Žarden, Dž. R. (2006). *Ekološka etika: uvod u ekološku filozofiju*. Beograd: Službeni glasnik. (Translated from: Des Jardins, J. R. (2006). *Environmental Ethics: Introduction to Environmental Philosophy*. Boston: Wadsworth Publishing Company.)
- Ehrlich, P. R & Holdren, J. P. (1971). Impact of Population Growth. *Science*, 171 (3977), 1212-1217.
- Gunn, A. S. (2011). Animal Ethics. In: Newman, J. and Robbins, P. (ed.). *Green Ethics and Philosophy: An A-to-Z Guide* (10-15). Los Angeles: SAGE Publications.
- IUCN, UNEP and WWF (1980). *World Conservation Strategy: Living Resource Conservation for Sustainable Development*. Retrieved November 19, 2005. from <http://data.iucn.org/dbtw-wpd/edocs/WCS-004.pdf>.
- Jovanović, S. i Živković, Lj. (2016). Tendencije u pogledu razvoja proekološkog ponašanja učenika. *Inovacije u nastavi*, 29 (4), 115-122. DOI: 10.5937/inovacije1604115J
- Kirn, A. (2013). Od antropocentrične ka ekocentričnoj etici. U: Pavlović, V. (prir.). *Ekologija, religija, etika* (147-177). Beograd: Zavod za udžbenike i Eko centar.
- Lovelock, J. (1979). *Gaia: A new look at life on Earth*. Oxford: Oxford University Press.
- Midžli, M. (2012). Kraj antropocentrizma?. U: Đurić, J. Prodanović, S. i Krstić, P. (prir.) *Životna sredina: moralni i politički izazovi* (29-41). Beograd: Službeni glasnik: Institut za filo-

zofiju i društvenu teoriju. (Translated from: Midgley, M. (1994). The End of Anthropocentrism?. In: Attfeld, R. and Belsey, A. (ed.). *Philosophy and the Natural Environment* (103-113). Cambridge: Cambridge University Press.)

- Naess, A. (1973). The Shallow and the Deep, Long-Range Ecology Movement. A Summary. *Inquiry*, 16(1), 95-100.
- Pavlović, V. (2013). Ekologija i etika. U: Pavlović, V. (prir.). *Ekologija, religija, etika* (13-35). Beograd: Zavod za udžbenike i Eko centar.
- Segof, M. (2012). Da li trošimo previše. U: Đurić, J. Prodanović, S. i Krstić, P. (prir.) *Životna sredina: moralni i politički izazovi* (361-405). Beograd: Službeni glasnik: Institut za filozofiju i društvenu teoriju. (Translated from: Sagoff, M. (2008). Do We Consume Too Much?. In: Sagoff, M. (ed.). *The Economy of the Earth: Philosophy, Law and the Environment* (110-137). Cambridge: Cambridge University Press.)
- *The Belgrade Charter: A Framework for Environmental Education*. Adopted by the UNESCO-UNEP International Workshop on Environmental Education, October 13–22, 1975. Retrieved January 15, 2005. from <http://unesdoc.unesco.org/images/0002/000276/027608eb.pdf>.
- Trnavac, N. (2014). Obrazovanje. U: *Leksikon obrazovnih termina* (523-524). Beograd: Učiteljski fakultet Univerziteta u Beogradu.
- UNESCO (2005). *Draft International implementation scheme for the United Nations Decade of Education for Sustainable Development (2005-2014)*. Retrieved on 13th January 2006 from <http://unesdoc.unesco.org/images/0014/001403/140372e.pdf>.
- Veinović, Z. (2017). The curricula revision in the context of education for sustainable development: from the perspective of two primary school subjects' curricula. *Zbornik instituta za pedagoška istraživanja*, 49(2), 191–212. DOI: <https://doi.org/10.2298/ZIPI1702191V>
- Vilotijević, M. (2014). Nastavni sadržaji. U: *Leksikon obrazovnih termina* (497-498). Beograd: Učiteljski fakultet Univerziteta u Beogradu.
- WCED (1987). *Our Common Future*. New York: Oxford University Press.

Science and Social Studies curricula:

- *Nastavni plan i program za osnovnu školu* (1963). Prosvetni glasnik, br. 11-12.
- *Nastavni plan i program za osnovnu školu u Narodnoj Republici Srbiji* (1952). Prosvetni glasnik, br. 9.
- *Nastavni plan i program za osnovnu školu u Narodnoj Republici Srbiji* (1959). Prosvetni glasnik, br. 7-9.
- *Pravilnik o izmenama i dopunama pravilnika o nastavnom planu i programu osnovnog obrazovanja i vaspitanja* (1991). Službeni glasnik RS – Prosvetni glasnik, br. 2.
- *Pravilnik o izmenama i dopunama pravilnika o nastavnom planu i programu osnovnog obrazovanja i vaspitanja* (1995). Službeni glasnik RS – Prosvetni glasnik, br. 5.
- *Pravilnik o izmenama i dopunama pravilnika o nastavnom planu i programu osnovnog obrazovanja i vaspitanja* (2001). Službeni glasnik RS – Prosvetni glasnik, br. 4.

-
- *Pravilnik o izmenama i dopunama pravilnika o nastavnom planu i programu za prvi i drugi razred osnovnog obrazovanja i vaspitanja* (2010). Službeni glasnik RS – Prosvetni glasnik, br. 7.
 - *Pravilnik o nastavnom planu i programu osnovnog obrazovanja i vaspitanja: Program obrazovanja i vaspitanja za 1. i 5. razred osnovne škole* (1990). Službeni glasnik SRS – Prosvetni glasnik, br. 4.
 - *Pravilnik o nastavnom planu i programu za 1. i 2. razred osnovnog obrazovanja i vaspitanja* (2004). Službeni glasnik RS – Prosvetni glasnik, br. 10.
 - *Pravilnik o nastavnom planu za 1., 2., 3. i 4. razred osnovnog obrazovanja i vaspitanja i nastavnom programu za treći razred osnovnog obrazovanja i vaspitanja* (2005). Službeni glasnik RS – Prosvetni glasnik, br. 1.
 - *Pravilnik o nastavnom planu za 1., 2., 3. i 4. razred osnovnog obrazovanja i vaspitanja i nastavnom programu za treći razred osnovnog obrazovanja i vaspitanja* (2010). Službeni glasnik RS – Prosvetni glasnik, br. 7.
 - *Pravilnik o nastavnom programu za 4. razred osnovnog obrazovanja i vaspitanja* (2006). Službeni glasnik RS – Prosvetni glasnik, br. 3.
 - *Pravilnik o zajedničkom planu i programu obrazovno-vaspitnog rada u osnovnoj školi* (1976). Prosvetni glasnik, br. 6-9.
 - *Uputstvo za sažimanje nastavnog programa za osmogodišnje škole* (1957). Prosvetni glasnik, br. 8.
 - *Zajednički plan i program vaspitno-obrazovnog rada u osnovnoj školi* (1984/85). Prosvetni glasnik, br. 3-5.