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THE IMPORTANCE OF RAISING AWARENESS OF ENVIRONMENTAL BEHAVIOR, ENVIRONMENTAL PROTECTION AND CLIMATE CHANGE IN THE APV

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Abstract: In the Republic of Serbia, education on environmental issues in elementary school is very scarce. Environmental protection theme is part of subject’s knowledge of nature and/or society, i.e., biology, chemistry, geography, and physics. Also, awareness on the necessity of environment protection among adults should be improved. Thus, the authors of this paper proposed an educational programs on climate change for adolescents that will indirectly transfer their knowledge on their parents or guardians. The educational program will be provided among elementary school children (1-8 grade). The program will cover climate change issues with the focal point on renewable energy resources. The effect of education will be analyzed throughout the survey before and after the program. The effect will be measured both in children and parents. The result should highlight the improvement in knowledge on climate change and raising awareness on this significant issue.

Keywords: climate change, education, renewable energy resources

INTRODUCTION

The Industrial Revolution has ushered in a new era in the history of humanity, not only in terms of progress and development but also in terms of the effects and consequences of the dizzying impact on the human environment. Improved processes have facilitated production processes and made products more diverse and accessible, which has greatly influenced the increase in living standards and, consequently, the multiplication of world half-population.

The principles of the production and growing civilization with increasing demands for energy exclusively produced from fossil fuels led to a sharp increase in the concentration of GHG (greenhouse gases), which consequently provoked many adverse effects known under the name of climate change. Surveys show that over the last 200 years, the global atmospheric temperature has increased by 1.1°C, with an increase of tentatively and estimates that by 2100 it will increase by 2.7 °C [1].

Recognition of global warming issues, expert empowerment seeks to raise awareness of the growing problem by pointing out the complexity of the problem and the need for a multidisciplinary approach. Tackling the issues of global warming is reflected in systematic policy-making and problem-solving strategies.

The history of climate change policy development began in the mid-1970s with the Convention on Long-range Transboundary Air Pollution [2], through the Vienna Convention on the Protection of the Ozone Layer [3] and other Significant Protocols [4], [5]. However, the basis of the policy lies in the UN

Framework Convention [6] with the Kyoto Protocol [7] defining developed country targets for reducing emissions through three types of carbon dioxide trading mechanisms, as the primary GHG. Continuity of action at the global level is reflected in the last Paris Agreement which establishes the ultimate goal of reducing GHG gas emissions, leading to a reduction in global temperature rise below 2°C during this century [8].

Although the concerns of climate change scientists are serious, reducing catastrophic consequences requires prompt collective action. However, public opinion on climate change as a result of the politicization of this, one of the most significant and real global environmental problems is polarized [9].

On the other hand, the formation of attitudes about environmental problems in adults is guided by the political beliefs and ideals in adolescents it depends most on the views, knowledge, and behavior of adults, that is, parents and educators/teachers [10]. As the perception of climate change in children is not yet formed and it’s not influenced by global controversy and discussion, it is possible that adolescents with acquired knowledge of this complex topic affect the awareness-raising in adults, primarily of their parents/guardians [11].

In developed countries, although environmental education occupies an important place in the early childhood education system [12], [13], [14] among teaching staff, there is confusion about the causes of climate change [15].

Environmental education has relatively recently become part of teaching in Serbia. Depending on age,

environmental protection education is part of activities in preschool institutions, or subjects knowledge of nature and/or society, i.e. biology, chemistry, geography and physics [16].

The results of a survey conducted in South Backa indicate that only 35% of teachers are ready to introduce environmental-related activities [17].

Previously, a preliminary study conducted in Novi Sad among children aged 6-12 years found that there was a specific awareness of environmental protection, reflected mainly through the waste recycling, water, and energy savings. However, there were no responses in children's free responses regarding wastewater and water pollution, as well as air pollution due to traffic and industry [18].

This indicated the necessity of expanding theoretical and practical activities that would expand the awareness of children in some segments of environment protection, especially concerning the causes of climate changes. The aim of the project, financed by the Autonomous Province of Vojvodina, is to raise awareness of elementary school students about climate changes in order to adopt specific models of environmentally friendly behavior, with the emphasis that their acquired knowledge indirectly affects teachers and parents, as well as others family members.

PARTICIPANTS

The educational program of inter-generational learning will be provided among elementary school children. The size of the sample will be determined after the consultation with the teachers.

Schools that are willing to take part in education are located in different regions of the province of Vojvodina (South Backa county, North Banat county, and Middle Banat County). During a preliminary survey on interest in participating the education, we encounter a great deal of attention.

CONCEPT OF THE RESEARCH

The research would be conducted in several stages. The first phase will cover preliminary activities, such as consultation with the teaching staff about the content of the program and the selection of training groups. In order to determine the effects of the implemented project activities, two groups will be set: a reference group and an experimental group. Both groups will include school children, their parents/guardians, and senior family members, as well as teachers/teachers.

The preliminary survey, which will include both groups of respondents, adults, and students, will contain general questions on age, gender, education, to analyze conceptual approaches to the concept and problem of climate change among groups of different ages. Within the group of students as respondents, these questions play a crucial role in looking at the

impact of different ages and genders on older people [19].

For the group of teachers, the questionnaire will pay particular attention to the scientific area that teachers teach, as well as the volume of materials devoted to the topic of climate change under the program, as well as additional activities that teachers self-initiated to address climate change.

For adults (parents/guardians and teachers), questions will be raised within this group regarding their personal views on climate change, their religious commitment as well as nationality [9]. Specific questions will include self-evaluation questions as well as questions that will explicitly indicate knowledge of the field and will be specially formulated and adapted for adults and children (Table 1).

Table 1. Questionare concept

General questions	P	K	T
Gender/Age	x	x	x
Education (Field and degree)	x		x
Scientific subjects (no od lectures dedicated to the climate change, personal contribution)			x
Personal attitude to the climate change issue	x		x
Political orientation (liberal, "left", "right") /religious (yes or no)	x		x
Nationality		x	
Specific questions			
Self-evaluation concerning knowledge in the field of climate change issues	x	x	x
Specific question concerning climate change issues and alternative energy resources	x	x	x
P stands for Parents, K for kids and T for teacher			

The second phase of the research will cover Theoretical and practical teaching, which will be implemented according to the detailed curricula formed. Classes will be implemented through two thematic units:

1. Climate change: defining the concept of climate change, causes of landfill climate change, industry, thermo-energy plants, consequences as well as the mechanisms of adaptation to climate change..
2. Energy and the environment: personal contribution and environmentally friendly behavior with an emphasis on energy efficiency, energy conservation, and the use of renewable energy.

Theoretic teaching will include educational pedagogical tools to bring the complexity and scope of the problem as clear and detailed as possible to a relatively small amount of lessons.

Practical work will focus on renewable energy sources. The realization will be carried out through

workshops in which students will have the opportunity to solve specific problems, design and realize individual projects that accompany theoretical instruction (windmills, digester for the production of biogas, green roof models, etc.).

Also, students will have the opportunity to express their views, impressions, and concerns about climate protection change as well as their vision of personal contribution to the advancement of this field through individual creative work, artworks or competitive projects.

CONCLUSIONS

The results of decades of popularization of environmental behavior in developed countries have yielded results over the last few years.

The implementation of the model of intergenerational knowledge transfer can improve the situation in Vojvodina as it affects three generations simultaneously, because adolescent children can adopt environmentally friendly behavior models without prejudice, which adults have, which ensures long-term results.

On other hand, adults with their preconceived notions and unwittingly developed bad habits are not ready for the direct acquisition of new environmental and energy-saving knowledge.

Intergenerational knowledge transfer will enable indirect action on parents, family members, and teachers taught their kids.

Preliminary monitoring of the development of awareness of environmental behavior, environmental protection and climate change in the territory of the APV to take concrete measures and activities for long-term planning and improvement of school programs at the level of the Republic of Serbia.

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Note:

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