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THE SIGNIFICANCE OF FOSTERING ECOLOGICAL AWARENESS AND EDUCATION ON CLIMATE CHANGE FROM AN EARLY AGE

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Abstract:

The development of environmental awareness from an early age is crucial for environmental protection and sustainable development. Environmental awareness includes knowledge about the limitations of natural resources, valuing ecological situations and adopting responsible behavior towards nature. Preschools play a significant role in the formation of environmental habits among children through educational and practical activities such as recycling and learning about environmental protection. The goal of the research conducted was to analyze the attitudes of educators about the importance of environmental protection in preschool education, the level of their education, as well as the application of good practices. The results show that educators are interested in environmental topics, but they lack mandatory and systematic education. Children have basic knowledge about environment, but there is a room for improvement. The paper concludes that it is necessary to increase the presence of environmental topics in educational programs, develop cooperation with environmental protection organizations and involve parents in the education process. This approach would enable the development of awareness and responsibility towards nature among children from the earliest age, thus ensuring a solid bases in fighting climate change consequences.

Keywords: Environmental awareness, Children, education, Climate change

Introduction

Education is a key tool in the fight against environmental degradation, and thus the causes that lead to climate change. Education is also a leading indicator of climate change awareness among younger generations. Furthermore, education empowers young people to become informed citizens and take decisive steps to protect the planet. From an early age, children and young people should learn about environment and the impacts of global warming, as well as how to incorporate

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sustainability into their daily habits. It is learning about the causes of climate change that helps dispel fear around this issue, and also raises awareness of the devastating impacts of anthropogenic activities.

This paper presents the extent to which the content on environmental protection, as well as the concepts of recycling, are represented in the work with preschool children according to the teacher's opinion. Therefore, to what degree is environmental awareness developed at this age, and indirectly, what environmental habits do families in urban and suburban environments have.

1. The basics of environmental awareness and education

The basic elements of ecological awareness are knowledge, evaluation of the ecological situation and ecological behavior. Ecology, as a young science, deals with the relationship between organisms and their environment, while environmental protection seeks to preserve the resources necessary for life. Key issues include the greenhouse effect, global warming, ozone holes, acid rain and the destruction of tropical forests. Recycling and waste separation are important steps in nature conservation. Today, ecology represents one of the most important natural sciences. It comes into the spotlight because man has polluted and damaged wider environment and ecosystems on our planet. In many parts of the world, the survival of a large number of plants and animals is threatened, and the level of pollution has reached such a level that the survival of man himself has been endangered [1]. Developed environmental awareness in modern society helps to preserve natural resources, mitigate climate change, reduce pollution, preserve biodiversity, and reduce the rate of global warming that affects climate change.

Without understanding the role played by human-induced climate change, natural resources could be depleted, threatening ecosystems and the survival of civilization. This is the task of individuals, societies and institutions that can create a sustainable future through laws and campaigns. Environmental awareness and ecological habits are influenced by the individual and collective experience of people [2]. If we consider the understanding of education about environmental protection and the impact on reducing global warming and the impact on climate change, there is a need to analyze plans and programs in our country, from preschool institutions to universities.

Environmental education is a lifelong process. Developing environmental awareness among young people is a prerequisite for more active involvement in ecology in the future, because living in a healthy and unpolluted environment is one of the basic human rights. In Serbia, environmental awareness is also at very low level (as confirmed by public opinion polls), and the topic of global climate change is less present in schools' curricula compared with the most European countries, including those that are in transition or have just come out of it [3].

The ecological crisis is a global problem, which, unlike other problems, affects all people, regardless of where they live, what class or religion they belong to, because it is not a problem that is only related to well-being, but is also directly related to the very survival of the human race [4].

Climate change represents those changes of climate that are directly or indirectly attributed to human activities that change the composition of the atmosphere and that, unlike climate variability, are recorded over a longer period of time [5]. Climate changes are changes in average temperatures and weather conditions, and with a continuous increase in temperature, these impacts become more and more pronounced. Environmental awareness helps to deal with the consequences of climate change, such as global warming and ecosystem degradation. Developed environmental awareness in reducing degradation and mitigating climate change contributes to reducing emissions, encouraging the transition to renewable energy sources, developing sustainable practices (recycling), protecting natural CO_2 absorbers, supporting environmental policies and risk education, informing the community about the causes and consequences of climate change. Environmental awareness encourages innovation in renewable energy and sustainable development, making society more resilient to climate change.

In addition to climate change, air pollution is one of the biggest environmental challenges facing our country. The World Health Organization estimates that the average annual concentration of PM 2.5 particles in Serbia reaches $19.4 \mu\text{g}/\text{m}^3$, which significantly exceeds the WHO recommended values ($10 \mu\text{g}/\text{m}^3$). According to the European report on air quality from 2020, it is estimated that over 16 thousand people die prematurely every year in Serbia due to the increased concentration of pollutants in the air [8].

It is important to understand how human activities can affect the warming of the planet, and for this it is necessary to know more about the greenhouse effect and the gases that cause it to exist. The education of children will result in the creation of permanent good habits, the development of empathy, the prevention of irresponsible behavior as well as the impact on the community and the environment. The approach would imply interactive methods in work, contact with nature and the introduction of novelties in the educational system. Building socially desirable behavior is necessary due to changes in people's everyday behavior and actions, which are not always adequate to ecologically positive solutions. Having a certain level of environmental knowledge and the intention of environmental behavior, without their manifestation in practice, is considered a latent form of environmental awareness [6]. Children with developed environmental awareness become leaders of sustainable development, preserving ecosystems and creating a better future for all.

Creating open and curious minds, with the desire to understand, analyze and solve problems related to climate change, should be the most important point in the upbringing and education of future generations.

2. Defining the research process

The subject of the research conducted is an examination of educators' attitude on the importance of raising children's environmental awareness. The research included surveying 106 teachers from preschool institution "Dečija radost" in Pancevo, aimed to assess the expertise of educators and the implementation of good practices in work on ecological topics.

The goal was to analyze the involvement of ecological values in the work of educators and the tasks of the research were set as:

- How much time do educators devote to education on ecology,
- Cooperation with environmental protection organizations environment,
- Knowing the ecological concepts and processes among children

The hypotheses were assumed as:

- The absence of a planned approach to environmental programs for children.

- Teachers' education about ecology is voluntary based and insufficiently represented.
- Educators would actively include environmental topics with better organization.

Data were collected through surveys (Google Forms). The questionnaire had 13 questions, from basic data to evaluations of environmental goals and proposals. The data were processed using a statistical, comparative and descriptive method using Microsoft Excel [7].

3. The results of research conducted

The sample in the survey consisted of 106 women/educators in total. Most of them are middle-aged (ages 36 to 50) and predominantly works in urban area, because the majority of kindergartens are located in the city. Beside these, the largest percentage of educators works with the oldest age group (ages 5.5 to 7), which is the most appropriate for this kind of education.

The analysis clearly shows which topics are the most common in working with children and which are their most represented interests. Some respondents are members of more than one team, but the largest number of respondents (23.76%), are not members of any.

When it comes to programs, the most represented program is "Traffic Education" with 14.85%. In the program "With Children Around the World" participate 10.89% of respondents, in "Eco Camp" participate 8.42%, while 6.93% of respondents participate in "Eco School" as well as in "Eco Beginners" team. The program "We are earthlings" has 5.94% of members. Finally, the programs "What makes my feet stronger" as well as "Encouraging children's self-esteem" is represented by 5.45% of participants in each.

Participation in the "Traffic Education" team is the most frequent while there is a room for higher interest of educators in the environmental teams/programs. This challenge can be overcome through education and projects that emphasize the importance of environmental protection, encouraging educators' awareness of their impact on children. A detailed overview of the data is shown in Figure 1 [7].

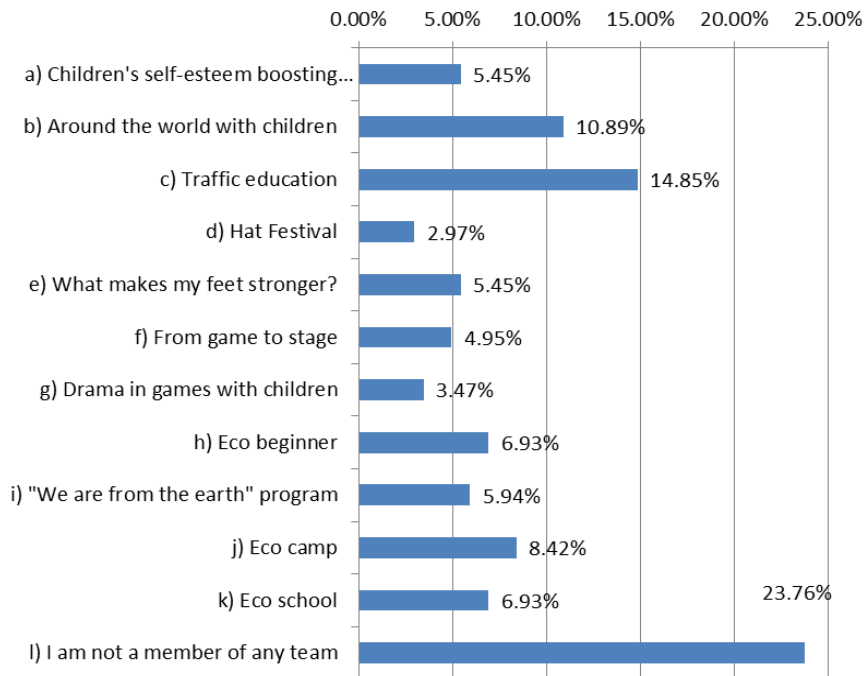


Figure 1. Participation of educators in educational teams

When it comes to the educational process goals, the respondents had the task of expressing their opinion on the importance of ten stated goals of the educational process for children in preschool age, using grades from 1 to 10 (1-lowest, 10-highest value). In answering, two different goals could not be evaluated with the same score (each stated goal received a different score in the range from 1 to 10). Results shows that Importance of developing care for their body has highest rate, followed by Developing awareness of the mutual connection between people and nature, the Importance of all forms of communication and the Importance of developing altruism respectively. According to the average score, at fifth place is the Importance of developing motoric skills and then in sixth position is the Importance of understanding one's own and other people's emotions. The Importance of developing creative expression and expression is followed by the Development of moral values and norms at eighth place. According to educators, the lowest ranks goes to the Development of resistance to stress and Developing social competence respectively (See Table 1).

Table 1: The goals assessment of the educational process for preschool age children

No.	Goals of the educational process	Average Value
1.	Developing body self-care	8,50
2.	Developing motor abilities and skills as well as sensory sensitivity	5,16
3.	Developing one's own and others' emotions	5,83
4.	Development of creative manifestation and expression	4,73
5.	Developing all types of communication	6,20
6.	Developing resistance to stress	2,94
7.	Developing social competence	2,53
8.	Developing moral values and norms and the ability of moral reasoning	4,64
9.	Developing altruism, qualities of humanity such as helpfulness, etc.	6,12
10.	Developing awareness of the mutual connection between people and nature and care for the environment	7,57

Source: Japundža, I. [7]

According to the research, it is clear that there is a great desire of educators to take part in the recycling processes, what is a good sign. The solution would include cooperation with other institutions. It is also necessary to train educators, children and parents on how waste is separated by type, packed and stored until take over. This wish of the educators is represented in Figure 2.

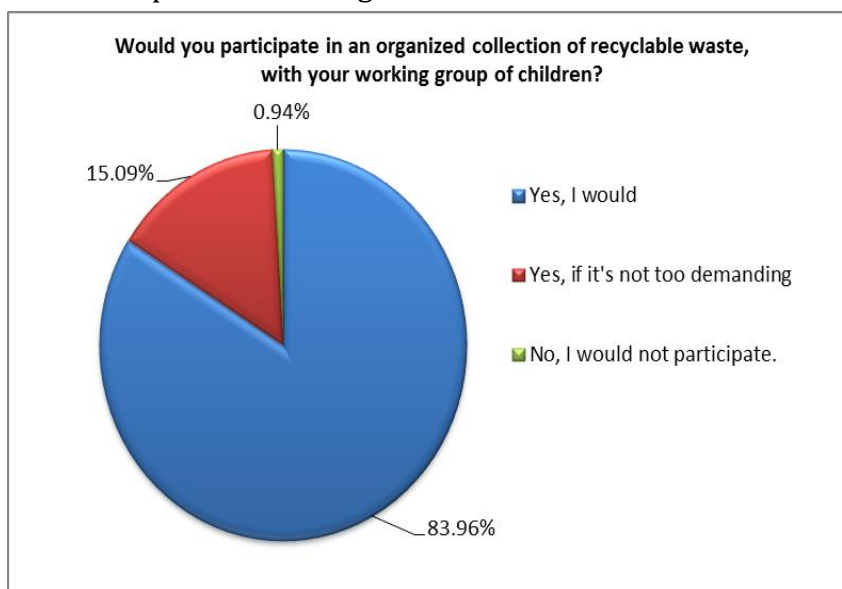


Figure 2. Educators' attitude towards inclusion in recycling processes

Conclusion

Education in the field of environmental protection is one of the key factors in the formation of environmental awareness among children, which is essential for mitigating climate change and preserving natural resources. The conducted research points to a high level of awareness among educators about the importance of environmental education, but also to shortcomings in formal approaches and organized programs in preschool institutions.

Climate change is an important issue with long-term consequences for the world around us, for local and global economies, as well as people's health. Global temperatures are rising, heat and floods are becoming stronger and more frequent. A large number of people are forced to emigrate. It is necessary to understand how our activities can affect the warming of the planet, and that is why it is necessary to know more about the greenhouse effect and the gases that cause it to exist.

This paper proves that relevant education in young population is key to facing these challenges and that its potential is not fully exploited.

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