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THE ROLE OF GEOGRAPHY TEACHING IN THE FORMATION OF ENVIRONMENTAL CONSCIOUSNESS OF STUDENTS*AUTHORS*

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ABSTRACT

The role of geography teaching in the formation of environmental consciousness of students

Environmental protection is one of the priorities in the curricula of all educational levels. Assuming that students do not show a sufficiently positive attitude towards the environment, it is necessary to point out the need for a better approach in the adoption of these contents. The aim of the research is to find out to what extent the mentioned values are present in the thinking and actions of children, in order to determine the way understanding of environmental consciousness is present. A pilot survey was conducted on a sample of 80 students from the 5th to the 8th grade. It has been confirmed that environmental values are known and acceptable to students, but their behavior is not based entirely on them. The analysis has shown that the environmental contents are not sufficiently used.

KEY WORDS

Environment, Ecology, Geography, Primary Education, Serbia.

1. Introduction

Due to the numerous environmental problems that occurred in the last decades of the 20th and the beginning of the 21st century, the issues of environmental protection and improvement have been given great attention, both globally and locally. In order to cause significant changes in people's understanding, it is necessary to offer adequate knowledge, facts and information that will influence the development of their environmental awareness. First of all, successful upbringing and education regarding environmental protection and improvement imply not only passive knowledge acquisition, but also achieving a higher motivation of students for a more active attitude towards environmental protection. The purpose of environmental education is to form students' awareness of environmental issues and their readiness to treat the environment responsibly, as well as to create environmentally conscious behaviour that should continue after the time they spent in school. Environmental education must find its place in all school subjects, but Geography with its curricula is a subject that provides great opportunities for dealing with many environmental topics, which are increasingly being debated today.

In recent times, ecology, as a fundamental scientific discipline, has increasingly received encouragement along with new tasks, it has developed and differentiated. Environmental science, whose basis and approach are grounded in ecology, has been developing in the last decades. At the same time, the ecology itself, as a part of the environmental science or separately, has become more of a science that connects natural and social sciences (Đukanović, 1991). Ecology is becoming not only a science of the future, but a science without which there is no future, representing the basis of modern environmental protection and improvement. Educating teachers in the field of ecology and the environment has increasingly become a priority, because they have gained a key role in the transfer of knowledge and understanding of environmental problems to their students.

2. Environmental consciousness and education

Environmental consciousness is the knowledge of the state of society and nature, the causes of that state as well as the need to protect nature from further disturbance. The environmental consciousness of an individual is a need to preserve and improve the environment, as being a part of it, and it also means being sensitive to the multiple values of the nature for the humans. The basic element of environmental consciousness is environmental knowledge, as a prerequisite for adopting an environmental way of thinking and the right attitude towards the environment. Therefore, a need for environmental education in the field of environmental protection and improvement has emerged as a response to current needs of humanity and the demands of the time we live in.

The goal of environmental education is to form awareness of environmental issues in young people, and to create readiness for responsible treatment of the environment, as well as environmentally conscious behaviour that should continue after the time spent in school (Milešević, 2012; Marković, 2005; Andevski and Knežević-Florić, 2000; Andevski and Kundačina, 2004).

Education aimed at the environmental protection and improvement in order to develop environmental awareness and build a new, better relationship with the environment, has to be designed to apply to students at all levels of education, and for all people in general. Environmental education is increasingly gaining a significant place and role in education and upbringing.

The objectives of environmental education for the protection and improvement of the environment can be achieved by adopting the following tasks:

- educational tasks - by forming a system of knowledge about today's environmental problems and ways to solve them;
- tasks related to upbringing - motivating, acquiring habits and needs and environmentally sustainable behavior and activities, healthy lifestyle;
- developmental tasks - developing a system of intellectual and practical skills to study, assess and improve the environment; striving for active preservation of the environment: intellectual (being able to analyze the ecological situation), emotional (treating nature as a universal value), moral (showing will, perseverance, and responsibility) (Jovanović 2004).

In 1970s, it was generally agreed upon that the foundations of environmental education should be laid in the earliest childhood. The environmental approach was introduced to the educational system of Serbia, from kindergartens to universities, in 1992 (Pešut and Jurišin, 2018). In the Republic of Serbia, environmental education has been introduced into the educational system and has been regulated by the Law on the Environmental Protection System of the Republic of Serbia and the Law on the Foundations of the Education System. The system of formal education implies the coverage of environmental contents in the teaching and learning plans, and in the curricula throughout all educational levels, primarily in lower grades (1st – 4th) through the school subjects World Around Us, Knowledge of Nature and Knowledge of Society, and from the 5th to the 8th grades through the natural sciences subjects: Biology, Geography, Chemistry and Physics, and through other subjects.

The school subject of Geography is studied in all grades of the second cycle, from the fifth to the eighth grade. Environmental contents are mainly studied through the study of physical geography contents (atmosphere, hydrosphere, and biosphere), and later from the 6th grade they are included in the contents of regional geography.

When defining educational standards, the formation of environmental culture in students is also given emphasis, and students have to learn how to recognize environmental issues and their impact on the local environment, as well as to participate in activities in order to resolve those (Educational Standards for Primary School, 2010). Furthermore, students should be able to describe the origin, development and consequences of environmental issues at the local and national level and propose measures to resolve them. At the highest level, educational standards (Educational Standards for High School, 2013) stipulate that students should be able to analyze environmental issues and their consequences at the global level and be familiar with the modern measures and procedures used to resolve them.

Teachers are important factors in developing students' environmental attitudes. They organize and lead the process of acquiring environmental knowledge, shape students' attitudes and habits and have a direct influence on students' personalities through their actions. It is required from the teachers to be familiar with the environmental issues and also to be aware of the environmental consequences.

3. Previous research

Numerous scientists have dealt with the theoretical correlation between environmental protection and geography, starting from the position that environmental science is rooted in geography. Stojanović (2014) states that based on the principles and the study subject, it can be concluded that environmental geography is a geographical scientific discipline that studies the spatial aspects of human-environmental interaction. The environment is increasingly becoming an area of interest for a number of sciences: geography, biology, economics, law and others, but geography is central to its study (Milinčić, 2014). This is because the human environment comprises abiotic factors (soil, water, air, climate etc.), the system of anthropogenic elements and the entire living worlds, all of which are intertwined and create a complete interactive system that is in a state of dynamic equilibrium (Blagojević, 2012; Marković, 1996; Stanišić, 2008).

Numerous issues regarding the modern world are important topics of environmental education, and through the acquisition of geographical knowledge, students are focused on accepting the circumstances and an adequate response to all the diversity of the world (Grčić and Grčić, 1997).

Numerous scientists have been engaged in previous research related to the correlation between education and teaching of (primarily) geography and the formation of environmental awareness among students. Thus, Živković (2011) states that the goal of environmental education is to raise students' awareness of

environmental issues and to increase readiness to behave responsibly towards it. Miu and Miu (2015) emphasize interdisciplinarity as the interaction between two or more disciplines, which is a necessary prerequisite and an important factor for modernizing the educational process, and that the connection between geography and ecology is very important. On the other hand, Puk and Makin (2006) believe that behavior and actions of each individual have a significant impact on ecological systems, and that behavior is the result of knowledge and education.

4. Research methodology

In order to determine the presence of ecological values in students' thinking process and actions, a pilot survey was conducted among students from the fifth to the eighth grade in an elementary school in a rural area, because it was assumed that these students would have more contact with nature, would stay outside more and would be more aware of the importance of preserving the natural environment than the children in the city. In order to determine to which extent environmental values are present in children's lives, it was first necessary to single out the values that would be covered by the survey and to establish how they could be expressed in behavior, ways of thinking and attitudes. The following ecological values were selected: feeling, awareness, understanding, and environmental care.

Also, a survey on environmental awareness and environmental protection was conducted among their teachers, but this will be analyzed in another article. The aim of this research is to find out to what extent the mentioned ecological values are present in the process of thinking and actions of children from the fifth to the eighth grade, in order to determine how the formation of ecological awareness and children's attitudes towards nature and important environmental protection issues develop within different age groups.

Data collection in this pilot study was done through a questionnaire. In accordance with the stated goal of the research and its complexity, research questions were aimed for students in the upper grades of primary school, so 80 students from the 5th to the 8th grade were interviewed. A total of 17 questions were asked, and an analysis of the selected ones is given below.

5. Results and discussion

In this research, the largest share of students were from the seventh grade, up to 34.2%, followed by the sixth grade students, with 26.3%, the eighth grade students 25%, and only 14.5% were the fifth grade students. Regarding the gender of students, the male gender was more dominant with 54.5%, while the female students participated with 45.5% (Figure 1).

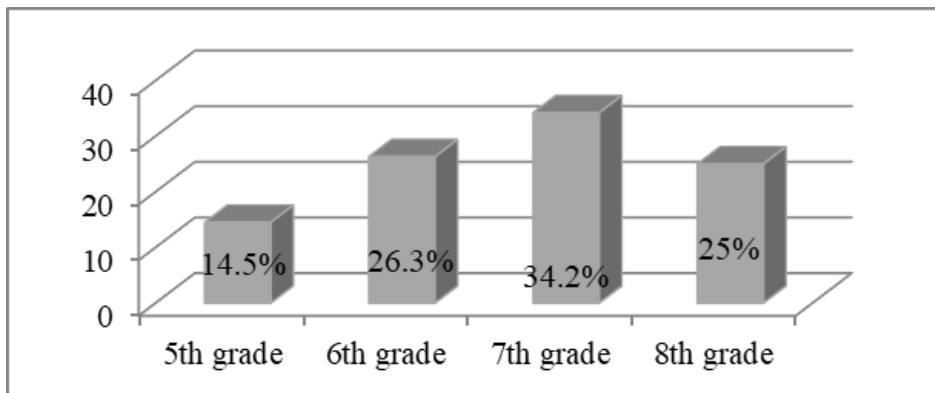


Figure 1: Interviewed students share by grades.

Based on the conducted research, it was noticed that the seventh grade students showed very poor results in understanding the concept of ecology. In contrast, the students of the fifth grade showed surprising results, and according to the obtained data, only a few students were not familiar with the concept of ecology. What is even more important for this age group is that in geography classes, teaching units cover physical geography content, which gives an opportunity to emphasize the importance of environmental preservation.

The sixth grade students provided only 40% of the affirmative answers about the knowledge of the concept of ecology, which is very worrying, considering the fact that in the sixth grade, teaching units cover topics such as the hydrosphere, flora and fauna, population and settlements on earth. These teaching units are very suitable for raising environmental awareness among students. Unlike other students, the eighth graders gave the most positive answers for being familiar with the concept of ecology. This is expected for their age group, and it is highly influenced by the fact that the regional geography of Serbia is covered in the eighth grade, which provides an opportunity to emphasize the importance of environmental protection and raise their environmental awareness through specific examples (Figure 2).

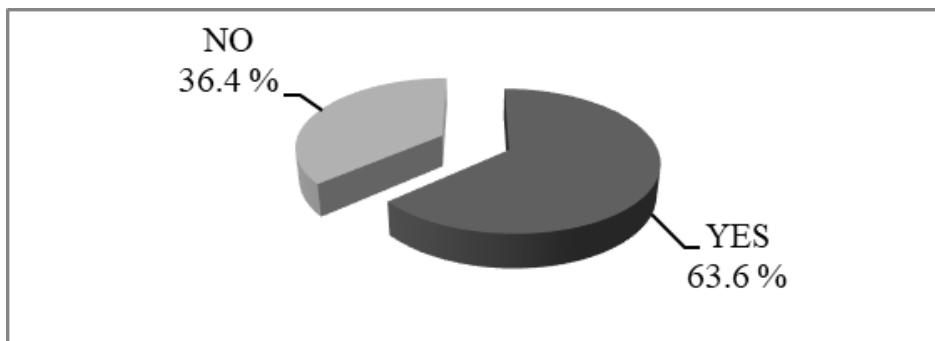


Figure 2: Knowledge of the concept of ecology by the total number of students.

An important prerequisite for building environmental awareness and environmental culture as the most important components of education and upbringing in terms of environmental protection and improvement is reflected in the creation of positive, responsible behavior of students, where the ultimate goal would be their active involvement in protecting their environment. To the open-ended question, how do you protect your environment, students' answers included examples such as not throwing garbage, plastic bags, bottles and cans, throwing things only into a bin or a container, recycling, not throwing various chemicals into rivers, participating in actions to clean the environment, planting plants, trees and flowers, maintaining parks, organizing the cleaning of the school yard, etc. The students made their own conclusions, explained why they should not throw garbage out of the bin and gave specific examples how to preserve their surroundings and the environment.

The next question (which is about something that they can observe in their immediate surroundings) refers to the introduction of a charge for plastic bags, and students' opinions were very different, indicating their insufficient knowledge of this issue. These data are very worrying, considering the fact that as many as 32.5% of students thought that the introduction of a plastic bag charge was not useful at all, 19.5% of students thought that this method was partly not useful, only 15.6% of students thought that it was partly useful, and only 11.7% of students agreed with the statement that the introduction of a plastic bag charge was very useful (Figure 3). By the analysis according to age group, it was determined that there were not any big discrepancies, and the answers were homogeneous. Such results can be explained only by insufficient engagement on the part of teachers and parents, because it is necessary to raise students' environmental awareness so that they can reach positive conclusions on their own.

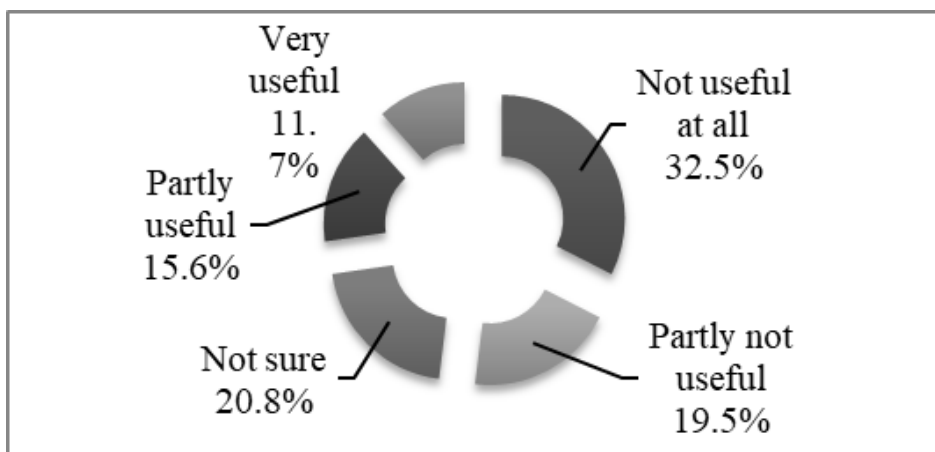


Figure 3: Students' attitudes about the usefulness of a plastic bag charge.

The next question referred to their understanding of waste management in the Republic of Serbia, i.e., their opinion on the extent to which waste management is taken care of in Serbia. The largest number of respondents agreed that it was partially taken care of (72.7%), as many as 22.1% of respondents agreed that waste management was not properly considered in our country, and only 5.2% believed that it was taken care of to a large extent (Figure 4).

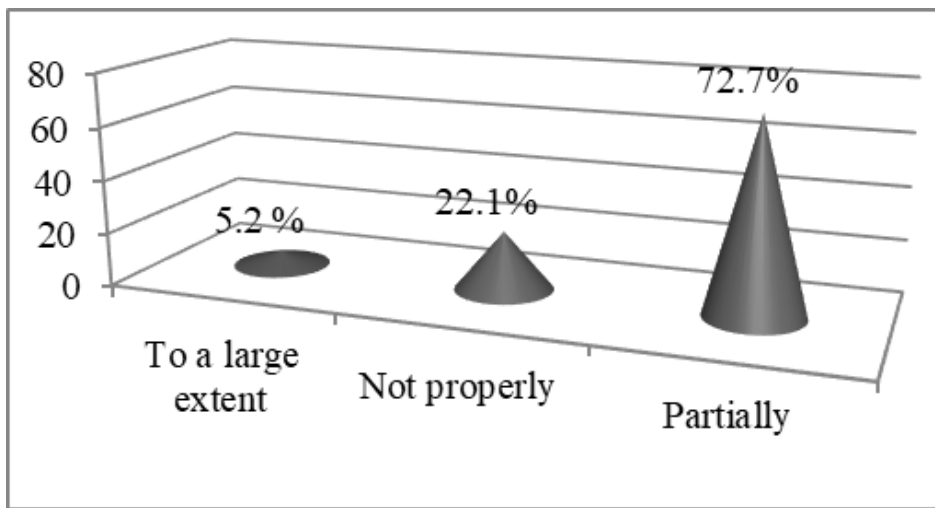


Figure 4: Waste management in the Republic of Serbia.

Students were aware of the situation and understood what was happening in their immediate surroundings where there were numerous illegal landfills taking up almost all waste in Serbia. It was very important to determine how much students were ready to participate in environmental protection activities, because in addition to having positive attitudes towards the environment and readiness to act in an environmentally friendly way, it is also necessary for them to participate in various specific activities. Unfortunately, the insufficient number of students (16.9%) who opted for this type of activity in their environment indicates their poor motivation. Also, very devastating results were obtained when students were asked whether they participated in the waste sorting around the school and in the centre of their town where containers for a certain type of waste were located. Considering that 81.8% of students gave a negative answer, it is obvious that they are still not aware enough about that option.

The students of the fifth and the sixth grade gave mostly negative answers, and the reason for that was insufficient information about the situation, while the students of the seventh and the eighth grade gave mostly positive answers and were aware of this fact. On the positive side, almost all students knew which materials could be recycled, and they listed paper, cardboard, bottle stoppers, cans, bottles, glass, metal and other materials among other things.

Students understood the concept of recycling, and emphasized the importance of recycling. Some students pointed out that they tried to live in accordance with ecological values, i.e., to behave pro-ecologically. Needless to say, the role of the family is hugely important in the formation of environmental awareness. The family as a micro-social environment, primarily through the emotional experience of ecological values (cleanliness of rivers, air, green areas), influences the opinion and behavior of its members. Parents thus give a very important incentive to their children from the beginning of their early development in terms of adopting basic rules of behavior towards nature, which is a good foundation to further develop positive relationships and behavior of children and future students towards the environment. The influence of the family is greatest in the upbringing of the child, the children learn most from their parents and the community, however, if there is no one to provide them with adequate information about the environment, we can talk about insufficient information.

The largest share of students, 31.2%, agreed with the statement that there was very little discussion about environmental protection at home. A total of 29.9% of students agreed with the statement that they spoke little about it at home, only 28.6% of students agreed with the statement that they spoke moderately about it at home, while only 10.4% of students agreed with the statement that they spoke much about it and that they spoke very much about environmental protection at home (Figure 5).

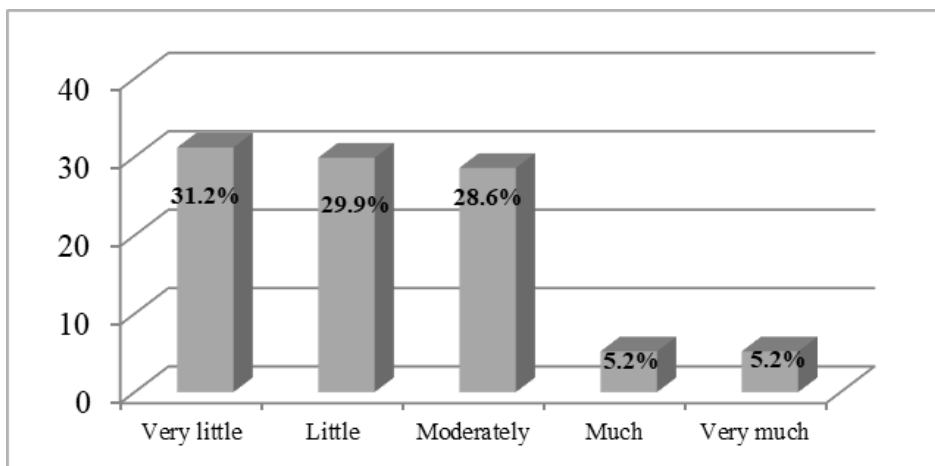


Figure 5: Discussing topics of environmental protection within a family.

Regardless of the previous statements, it is encouraging that the largest number of students agreed that intentional pollution should be punished (as many as 92.2% of students), while only 7.8% gave a negative answer.

The research was also focused on the importance of geography teaching for the introduction of environmental protection issues and raising environmental awareness of students, with as many as 64.9% of students who agreed with the statement that environmental protection was integrated in subject lessons, and 20.8% of students agreed with the statement that it was partially integrated, while only 14.3% of students agreed with the negative statement (Figure 6).

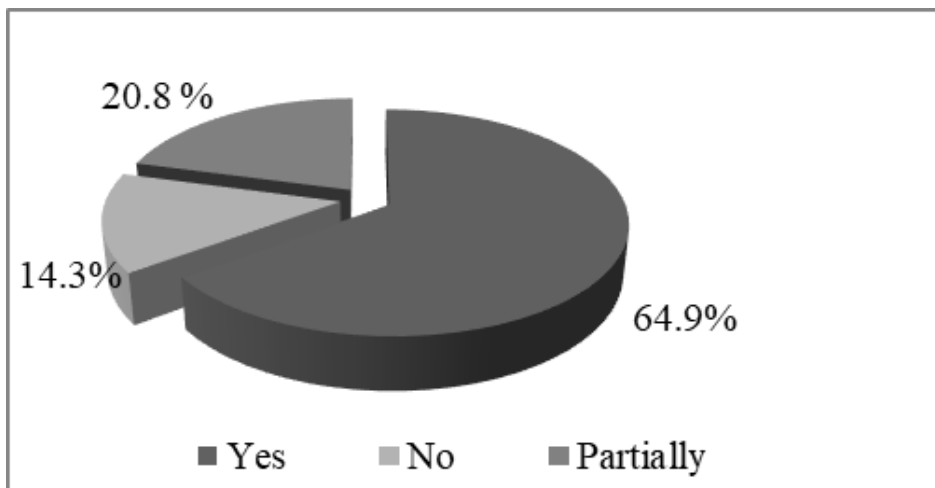


Figure 6: Integrating environmental topics in geography lessons.

The most of the negative answers were given by the sixth grade students, which certainly cannot be justified because in the first semester they cover topics such as hydrosphere, flora and fauna, population, settlements, where environmental awareness can be greatly raised among students.

6. Conclusion

One of the most important prerequisites for the protection and improvement of the environment is that each individual adopts habits of environmentally friendly behavior in their regular daily activities. Such behavior is influenced by many factors (knowledge, culture, motivation) and their interaction contributes to achieving a positive attitude towards the environment. Developing environmental awareness should primarily be a family task, and then include educational institutions, starting from the earliest age in kindergartens, and then through the entire primary and secondary education.

The survey confirmed that ecological values were present to a larger extent in the thinking process rather than in the actions of children from the fifth to the eighth grades. It can be concluded that their environmental consciousness is more developed than their environmental conscientiousness.

Hence, ecological values are known and acceptable to them, but their behavior is not based entirely on them. It should be borne in mind that the most important thing is that ecological values are emphasized at the level of the entire society and community, because this is the only way for the educational system, as a part of the society, to contribute to the adoption of these values.

Education for the environmental protection and improvement at the primary school level is a cornerstone for achieving the goals and tasks of grounded personality development as well as a strong contribution to the overall formation of environmental awareness and environmental culture. Environmental protection and improvement are becoming an increasingly important area in our lives and as such is becoming increasingly the center of educational content.

The analysis showed that the environmental contents planned in the curriculum of geography for primary school, and referring to the environmental protection and improvement, have not been sufficiently covered, so changes and amendments to the curricula are needed. It is necessary to make a connection between the contents of different subjects and to develop students' awareness to behave in accordance with the environmental protection principles as part of their daily routine and not to do it only in expected situations.

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