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QUALITY OF LIFE, EDUCATION AND ECOLOGICAL EDUCATION

Abstract: The research work is focused on the interactive relationship between environmental education and the environment as elements of quality of life, as well as their impact on the improvement of the environment. The impact of globalization on the environment changes, irrational use of natural resources, hence the emergence of environmental problems, leading to a growing gap in the quality of life and its inequalities on the planet. The degree of environmental education in Serbia does not follow the development trends of the state, so it is necessary in accordance with real possibilities to accelerate the quality of environmental education with a view to the realization of sustainable development.

Keywords: quality of life, ecology, education, environmental education

1. INTRODUCTION

Globalization is a multi-dimensional process and as such (objective phenomenon), based on the need for maximum consolidation of all forms of resource potential of nations and spiritual possibilities of societies in order to ensure long-term gradual development. Today, globalization is another name for the future and progress in all areas.

David Held and Anthony McGrew Anthony Giddens present several dimensions of globalization, such as economic, social and institutional, infrastructure, ideological and cultural, environmental dimension. Each of them interacts with the quality of life. An important segment that binds with the previous is the world economy, of which the survival and life of each inhabitant of the planet depends. The very aim of the global economy is a long-term improvement in order to improve the human needs of the population of every country in the world. The main factor of human needs is the quality of life and existence. The social and institutional dimension is related to a civil society that must be open to novelty and progress. Infrastructure affects the information that is transmitted over long distances. As mentioned by Zečević and Nikolić, ideological and cultural dimension include, "the mass media, a large part of computer industry, education, science and art." The environmental dimension is very important at a time when

global climate changes occur that threaten the survival of life on earth. One of the types of global threats according to U. Bek is global devastation and the destruction of the environment. Thanks to computer technologies, despite the impact of media, an educated man can be an important link in the ecological sphere. By acquiring additional knowledge and its permanent enrichment, the quality of human life increases, then, in the long term, his economic status is being improved as well. The transfer of information among the public and additional environmental education are of great importance for improving the quality of the environment. The main factor for their realization is reflected in the social forces leading to globalization, with a significant emphasis on education.

The quality of life-Changes in Serbia. The quality of life in each country is expressed in different indexes. The Human Development Index (HDI) is one of the indicators of quality of life in some national-states. It is expressed through the arithmetic means of life expectancy, level of education and gross domestic product per capita. So, education is one of the most significant factors to measure the quality of life. The closer the Human Development Index number is to 1, the better the quality of life is. In 2014, Serbia occupied the 77th place among 187 countries. Of course, the height of the index depends largely on gross national product, which decreases due to monopolistic pricing in European countries,

when the GDP increases, one can expect positive impact on growth of IHR.

A precondition for a good standard of living is highly developed industry that causes high employment rate of the population. As in Serbia in recent years the development of the industry is at a very low level due to the deterioration of state-owned companies, current privatization, reforms that are intended for reducing the number of workers and increase of productivity, there is a high unemployment rate. High unemployment is characterized by poor economic situation, which is also a precondition for the bad influence of various factors on the quality of human life. When some basic human needs are not satisfied, culture as the last factor is neglected. Culture is not only defined by activities of the population in the areas like visits to cultural events, theaters, exhibitions, etc., Culture is characterized by the pattern of behavior. With growing population, migration from the countryside to the city, from the provinces to the capital, the behavior models are changed. At the crossroads between East and West, tradition and globalization, systemic reforms to improve the quality of life include the transformation of social, governmental, and political level. This attempt is long and difficult to predict. But what is certain, with the change in the market economy from anthropogenic approach, is that environmental education is the key to prosperity and a significant factor in improving the quality of life.

2. ELEMENTS OF THE QUALITY OF LIFE

Lj. Papić puts the 5 elements, on table number one, which are essential elements of the quality of life in every country on the planet: Physical environment, natural environment, health, education and culture and moral-psychological climate in the society.

Indicators of quality of life can be represented as:

- Quality of food,
- Quality and fashion clothing,
- Living comfort
- Quality of Health,
- The quality of education,
- Quality in the service areas,
- Quality of the environment,
- Quality of free time,

The degree of satisfying needs:

- in eventful contact,
- in the knowledge,
- In creative work:
- in the level of stress conditions,
- in the structure of displacement etc.

Bearing in mind the scope of the above elements, we shall focus on the quality of education with the aim of improving indicators of environmental quality, through environmental education as the most important partial segment of education in preserving the environment. Ecology also significantly affects the quality of life. The air quality of the environment in which a man lives, affects the quality of his health. Health is one of the factors of the quality of life. The degree of pollution, the amount of waste to aesthetic and health has an impact on the environment in which man lives. So that the environment is one of the important factors. The solution to this problem is in the promotion of environmental education.

Environmental education, is based on the Belgrade Charter (1975) and The Tbilisi Declaration (1978) that make up the basics of the internationally recognized environmental education. "The aim of environmental education is to influence the development of the world's population, which is environmentally aware and concerned about the environmental situation and ecological problems, and which has knowledge, skills, attitudes, motivation and commitment to work, both individually and collectively on solutions of current problems and prevention of new." Tbilisi Declaration clearly defined the goals of environmental education through:

- Awareness
- Knowledge
- Attitudes
- Skills
- Participation

The National Programme for Environmental Protection represents a framework for the development of environmental awareness, which developed through formal education is not satisfactory. "The education system is the most important element of life and infrastructure development of each individual, society and the state as its total effect determine the scope, quality and efficiency of construction and use of all other systems and resources, and overall quality of life and the development potential of

individuals and communities. The mission of the education system in the Republic of Serbia in the 21st century is to ensure the basic foundation of life and the development of each individual, the state and society based on knowledge. Education Strategy until 2020 has a clear mission "of the education system, reflecting the purpose of the existence of education from the standpoint of the outside world, ie. express the key long-term role of education for economic, social, scientific and technological, cultural and other developments in society in general and for the development of creative and working potential and quality of life of every citizen of the Republic of Serbia."

Education can be defined as the process by which an individual adopts certain knowledge that has an impact on his work and life in general. The 21st century ecology is the theme the whole planet deals with and in this respect attention to ecological education should be paid. As education can be formal (school) and informal, the same can be linked to environmental education. Environmental education can be conducted informally through the work of local governments with the population, non-governmental organizations, citizens' associations, all with the aim of including and educating people about ecology. The purpose is to improve the quality of the environment in which they reside, and thus the quality of life.

Formal environmental education is present in schools through a variety of the objects that have connection to ecology, but it can be presented through a variety of extracurricular activities for children. In secondary schools there are educational profiles of technicians for environmental protection, environmental technicians, etc. which offer theoretical and practical knowledge and train students to work in these areas, but also give a good basis for further studies. University education provides profiles of environmental directions that comprehensively made concrete work and education in the field of ecology, in order to improve and protect the environment. However, improving environmental quality and thus the quality of life involves active participation and the participation of the entire population, not just those who have decided to acquire an education in the field of ecology and professional development in this direction. Significant support can be provided by:

- New technologies
- Population mobility

Technological globalization has rapidly taken unbelievable proportions. The power of technology as a carrier of information should be used in the best way because in the 21st century the sphere of Internet and mobile technology is close to reaching the peak in terms of development and thereby popularity among the population of all ages. Mobile technologies enable easier transfer of information and the mobility of all participants in the interaction. Internet and mobile technology are classified as factors of technological development which will significantly leave a positive impact on education and the volume and the speed of information. New technologies as a basis for the development of e-learning can become a significant additional support for environmental education. The objectives of environmental education from Tbilisi Declaration have not changed, but the way of learning has significantly changed. "Mobile learning with the help of wireless mobile technology allows all interested parties an access to information and educational material, from any place and at any time, regardless of where they live and regardless of the status and culture from which they come. The main benefit of this type of education is that it allows learning at locations where there are no proper schools, teachers or library ...". E-learning is a model which assumes greater significance in the models of university education. The factor of our interest that has the greatest significance, is the mobility of participants of this interaction. The transmission of information via mobile phone like Android, can greatly affect the timeliness, availability, and it can easily present information to high school students, since the mobile technology is greatly used by young people. For this reason, it is necessary to help young people understand environmental education, through interesting ways of acquiring knowledge and equally interesting ways of gaining practical knowledge.

Population mobility of students aims to improve the knowledge and practical experience within the same generation. From a psychological point of view, this model can significantly influence the world of high school students who are functioning at this age by adopting a form of intergenerational trends. The movement of students in the district and inter-state schools may be important and interesting. Acquiring knowledge and sharing experiences contribute to improvement in many ways.

According to the Charm, there are three

types of e-learning:

- *Web-based learning*
- *Online learning with support*
- *Informal e-learning*

Web-based learning involves individual learning according to the required content. This study implies that a person who acquires knowledge is to be motivated in advance. Most of the population use this type of learning, but in the case of support for *Web-based learning*, the preliminary work on the motivation of individuals for environmental knowledge is necessary. *Online learning* involves not only focusing on one student but students' activities and their interaction with other participants and the tutor. In this case, there is usually hidden students' desire to learn specific content which is started by a group or other participants. Communication, exchange of environmental knowledge and experience can bring benefit to the additional environmental education, gained through this form of e-learning. *Informal e-learning* involves multilayered interactive relationships between students, experts with significant emphasis on practice. Keeping in mind the past experience, the interest of the population to the problem of protecting the environment and its improvement with the ultimate aim of improving the quality of life, this kind of e-learning would give the best results.

Mobile education in recent years is becoming more desirable, more acceptable and more interesting way of learning. Of course, the basis of that, again lies in the development of technology and the consequent change in the quality of life. The speed of life and changes in the habits when time is the key factor, have made a step into new spheres of education, mobile learning or m-learning. In addition to the numerous problems that some authors cite regarding the limitations of this type of learning (problem evaluation, cultural constraints, economic, organizational, etc.), the development of mobile technologies is stunning, and so is the acceptance of this form of learning. The possibility to learn anywhere, anytime, is important for the ecology. The cognitive processes at the moment of interest while you are in nature, making videos and photos, sound and absolute participation and activity of each individual in an environment *just in time*, give this model of learning great support. The application of Keller's model of learning involves motivation as the most

important factor in learning. In Serbia, the motivation of the population to acquire environmental education is a very big limiting factor. So, using Keller's "ARCS model of motivation," we would awake the interest and curiosity of the population first and then use "Šijev" learning model to improve interpersonal interaction and ecological learning process.

The education system in Serbia is based on the importance of ecology as a vital educational factor of the future. All development and progress of mankind implies primarily the preservation of the planet. However, formal education in Serbia does not give the expected results. This is partly so because of poor motivation of the young population to participate and contribute to this area. One can not say that the formal education system has not given enough significance to ecology, starting from preschool and elementary levels, through secondary school, environmental education profiles, up to 24 faculties with environmental study programs in Serbia at four universities founded by the Republic of Serbia (Belgrade, Nis, Novi Sad, Kragujevac).

But sometimes, as in the informal groups whose strength and cohesion often outpower formal groups, as well as environmental education, informal education knowledge based on family group, media and practice, can have significant effects, or at least a significant impact on the effects of application and advancement of formal environmental knowledge.

3. THE RESULTS OF BASIC ECOLOGICAL KNOWLEDGE AT THE SECONDARY SCHOOL LEVEL OF THE MUNICIPALITY OF LUCANI

Assuming that adult children do not have sufficient knowledge of ecology and recycling, it is necessary to start training as soon as possible, in May 2011 a pilot project was conducted at "Milan Blagojevic" School in Lucani. Respondents were the students of four eighth-grade classes (86 students). Research results were below expected levels. With the aim of promoting education of children in the field of ecology and recycling, keeping in mind the limited, and available resources of Lucani, all the children who participated in the survey

later visited the recycling center SZTR "Neda-Plus" Lucani, where they met with recycling process and the products it creates. Their active participation in the selection and segregation of waste, enabled them to get to know its characteristics and the possibility of its re-utilization. The benefits of primary selection were presented to them with the possible effect on their surroundings. The students showed great interest in practical learning, explaining that this visit was very useful and tangible, unlike the previous learning at school. After four years, the same questionnaire was repeated only in significantly greater number of respondents. In the municipality of Lucani in High School Dragacevo, the number of students

surveyed was 71.5% out of 322 high school students in total. The survey was conducted by the method of questionnaires in which the pupils answered about their knowledge of ecology. Respondents were students of all economic departments, chemical and technological departments, shopping technicians, high school students, technicians for the protection of the environment, and mechanical technicians for computerized construction.

When asked- What is recycling? 26% of the students who thought they knew the answer but actually they didn't and of 62% of the students knew the answer and 12% did not know how to define recycling (Figure 1).

Do you know what is recycling?

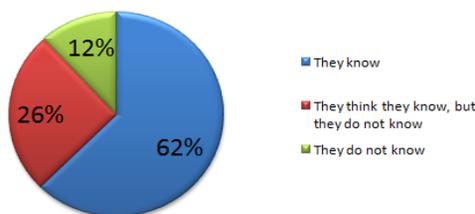


Figure 1 - Graphic answer to the question - What is recycling?

Comparing the results obtained, with the previous pilot survey (where one-quarter of respondents did not know what recycling was and as much as 59% of respondents did not know any product that resulted from recycling, which means that from 75% of those respondents who knew what recycling was, a significant number of them did not know what was created by recycling) we come to the conclusion that in the past four years there has been no progress because the differences are almost non-existent. The only difference is in the percentage of responses to the question-Which products are created by recycling? In the pilot survey, 59% of students did not know the

answer to this question, in this study 47% of students did not know any product that recycling creates, it is shown in the next graphic. By summarizing the results, we noticed that those students who visited recycling companies and saw practical examples were aware of the recycling process and they did not have problem in answering this question.

When asked- What is the result of recycling?, 41% gave the correct answer, 12% thought they knew, but did not confirm a further response, while 47% of students did not know a single product created by the process of recycling (Figure 2).

Which products are created by recycling?

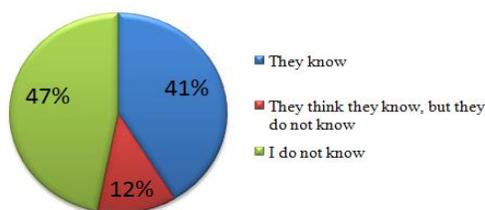


Figure 2 - Graphic answer to the question - Which products are created by recycling?

The following graphic shows the source of informal environmental education for secondary school students in the municipality of Lucani 78% of students indicated that their knowledge is not obtained only at school, but 22% received additional knowledge and information within the family, while approximately the same percentage of students

acquired further environmental education through television, Internet and environment (Figure 3).

This data indicates and confirms the necessary application of informal education for older population through a variety of education and inclusion in the activities of local government.

Is your knowledge in the field of environmental protection acquired only at school?

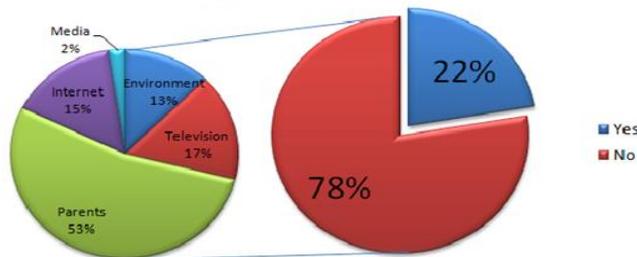


Figure 3 - Graphic answer to the question - Is your knowledge in the field of environmental protection acquired only at school?

Would you clean up garbage in return for a pocket money?

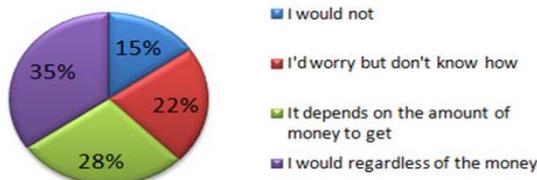


Figure 4 - The answers to the question: Would you clean up garbage in return for a pocket money

15% of students would not worry regardless of financial motivation, 22% of students would be concerned about the environment but do not what to do, which indicates the need for additional information and knowledge. 28% of students would be working with some kind of money compensation, while the highest percentage of 35% are concerned about the environment regardless of the money (Figure 4).

In pilot survey, the answers to this same question looked like this: 29% of respondents were concerned about waste but did not know what to do; 26% are concerned regardless of the money given to them which lead us to conclude that at least half of the respondents willingly participated in education and the development of recycling; 19% of respondents

would not be motivated by money, while 26% of respondents base their attitude towards waste on the amount of financial compensation. We conclude that the answers in this case are fairly homogeneous. Thus, comparing the results of the research and environmental education of children in the past four years, we see that this way of educating and the trend of acquiring environmental knowledge, do not go in the desired direction. Positive changes resulting from the introduction of additional practical training of students to the process of recycling, should continue and accelerate in the future education of environmental protection with the aim of increasing the quality of life, improved by engaging all local capacities. We note, that the importance of the introduction of additional education of children in the field of ecology

and recycling in the municipality of Lucani is not just local. As an example of good practice, this type of research should be implemented at the regional level, or in other local governments in Serbia, which would clarify the actual situation and environmental education for secondary school students, and enlarge the effects of this project further. "In addition, new forms of inter-municipal cooperation would be started as encouraging of good examples, including an increasing number of children and their families indirectly, with the ultimate effect of creating a new way of lifestyle and a different perception of waste, resulting in its decrease". In addition, it is necessary to maximize the use of mobile education and the impact of new technologies. The family as a pillar of education and culture has a significant role in the development of environmental awareness of children.

4. CONCLUSION

Taking into account the educational development plans in Serbia, incorporated into Education Strategy until 2020, and the National Programme for Environmental Protection, in the case of the Municipality of Lucani, we have

seen that the formal education of high school students who had been studying environmental subjects for at least a decade has not given the desired results. If we really want Serbia to develop in line with sustainable development, we need to find a model to improve the performance of formal environmental education. Part of this progress is achievable by introduction of additional environmental education through informal forms of learning, applying new technologies, mobility of students and the population and strengthening the practical participation of the population in protecting the environment. It is impossible to improve the quality of life without improving environmental protection. It is the basis of achieving every other quality. The realization of improving of environmental quality can not be conducted without people. Their participation in the implementation of the strategy of conservation and improvement of the environment is not possible if their ecological knowledge is not at the appropriate level. Thus we come to a vicious circle in which every idea is being based on the knowledge and realization of each depends on the knowledge and practices acquired. And as Johann Wolfgang von Goethe said: Knowledge is not enough, it must be applied!

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