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(Review paper)

WHY DO CHILDREN SPEND LESS TIME IN THE NATURAL ENVIRONMENT?

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Abstract: In this paper we represent the results from research made on children from 3-7 years old age in kindergartens in urban and rural environment. Results are statistically processed from which the results obtained give us the conclusion about the connection of the children with the natural environment.

This natural connection has been replaced in various ways – greater interaction with the digital ('plugged-in') world, less unstructured outdoor play, and via growing urbanization. This decreased exposure to nature has consequences that we are just beginning to understand. Research across disciplines now suggests that this disconnect (both figurative and literal) has far-reaching consequences for the health and well-being of both individuals and the natural environment in which they act. Children are smarter, cooperative, happier and healthier when they have frequent and varied opportunities for free and unstructured play in the outdoors.

Key words: children, nature, natural world, natural connection, kindergartens.

Introduction

"The tragedy that we face in this generation is that children do not have time for research, for playing outside, walking in the nature. Game which allows the children to find themselves, find what kind of people they are and recognize what worth and what doesn't worth. For the new generation, nature is more abstract than real. Unfortunately, our society teaches young people how to avoid direct contact with nature. This lesson - again UNFORTUNATELY – has been developed in schools, families, and wider society. Our institutional rural-urban design, and cultural behavior unconsciously associate nature as "fate" - while dissociate from joy and despair, -Stavreva-Veselinovska, S. (2007).

The media and parents fear the children with the forests and fields, and in schools they work very little on this problem to be overcome today's situation in which the children and the

nature are. In "made up" or failed school systems, we note the "death of the history of nature" the one that calls upon the current generation with open arms and mouth of awakening of the sleeping consciousness in adults.

My personal view I want to bring out in this paper, supported by the results of several surveys of people dealing with this problem - it is not the ecology of the past, which usually argue that children should respect nature to protect it. Instead, the idea that I want to insert into the text is based on my own thinking: strolling in the woods, smelling the roses, playing with mud ... are all good children's games that have a positive impact on mental health, learning and development of the brain. Being close to the nature can lead to increased concentration in humans, to improve the behavior of children, improve the success of students.

The lives of children have radically changed over the past few years. Children have little free time. Their lives are structured, organized, and timed nearly to the minute. Today's children are less connected to the natural world than at any other time in history. No longer free time is spent outdoors, in the nature. A growing body of research has demonstrated that the natural world holds numerous benefits for children and adults. While it is still mysterious just how the mind, body and spirit gain from exposure to and experiences with nature, empirical evidence forces us to reexamine and rethink the lives of today's children.

Post modernistic view that reality is only a construction - that we are what we programmed - what we should be? - Shows a reduction of the limits of human possibilities. But because the young spend less and less of their free time in natural surroundings, their senses increase threshold stimulation, physiological and psychological, and all this reduces the experience of the beauty of nature where the only creator, composer and actor, is only the NATURE, (Stavreva-Veselinovska, Stojnic,2007).

We as parents are always able to speak and tell about the forests where we used to walk as a children, about the houses of wood in the forest, and all the beauty that we felt as children. But now we are faced with a serious problem. How to disable our children from homes who are constantly sitting in front of computers and are on the Facebook, Skype or MSN. And when we want to point out what is the best for them, our kids are not serious again and can not understand what they miss out.

Again, I wonder - how to heal the broken bones among children and nature? That should be our concern, not only because aesthetics and ethics require that, but also because our mental, physical and spiritual health depends on it. You should find an alternative path to the future, including some of the most innovative areas - school curricula, reimagination and redesign of the urban environment, as one theorist has called "zoopolis" way of addressing the challenges of covering environmental groups, and ways in which organizations based trust can help to be called "nature as part of the spiritual development of children.

Parents, children, grandparents, teachers, scientists, environmentalists and researchers speak publicly about these problems. They recognize that transformation is already underway. Some of them draw another time in which children and nature is united again - and nature is more respected and protected.

Environment as a source of knowledge

How to spell children to learn immediate about nature, especially where the cognition of natural phenomena are seeking answers to many questions and problems?

Life of today's children has significantly changed in contrast to the past. Children does not spend their free time out anymore and does not think about how to play outside, how to explore the nature which is their environment and exist in their backyards. Researchers who work and study this matter showed that children's contact with nature has many positive benefits for both children and adults. While still is a mystery how the mind, body and spirit grow and develop in nature, empirical evidence makes us think about how to take the children out of their homes and return to nature which is rich with beauty and beautiful landscapes. For researchers dealing with this matter, termination of contact of children with nature is complex and very worrying problem. This disconnection of children with nature has a great impact upon the health of children, but also consequences for the nature that surrounds them and in which they live.

Formation of representations and concepts, their conceptualization and learning through research, begins with an interactive relationship of the child with the objects, phenomens and processes in nature. The direct residence in the nature will allow to be create "healthier and more natural and human relationship between man and nature. Therefore Supek writes: "Man should live in nature, among plants and animals, not plants and animals to live among the people."

Man effects the outside world and outer world effects on human action. The result of this action is another experience that includes the outside world with the sensual organs, nervous system, opinion, senses and procedures, or object and subject. Different people may not have the same environment, even they are surrounded by the same subjects. Everything that surrounds the child is not part of its surroundings. Only those subjects with which the child comes into actual relations constitute its real environment. The potential environment includes those things with which a child could enter into mutual relations and also to expose their effective functioning.

Nature as a source of knowledge is extremely important in their cognitive purpose. The more discoveries the child has made, the deeper joy is experiencing the scientist, the more it reveals the unknown, the more he questions: Why? How? What is it? - And directs their intellectual powers more brave to track traffic to the unknown, a response of the unknown.

Brief history of the movement of children in nature

For several decades the teachers for the environment, naturalist and other researchers are working intensively in order to bring the children closer to nature. From 2005 as a result of numerous trends, including the deliberate awareness of the welfare of man, his capacity for learning and health, also child care, obedience, and national media attention about the disorder which is caused by a lack of nature, this problems are more often amounts to an international audience. In 2006 the author of the book "Last Child in the woods," Richard Louv has been called in Washington to the campaign titled "Do not leave no child inside" which aim was to

connect the children with nature. After several years of the event, public opinion and awareness reached a significant level. This topic is more active in public and gets more attention than ever before. Parallel with the movement to return children to nature emerged and many other movements: active living, clean health, cities for walking, which have meaning and reason for existence. The issue is the health of the child and on the planet Earth. Research shows that almost everyone who has been connected to the nature as a child had a close experience of nature. But, if the children's experience in future generations are significantly reduced, how they will know how the Earth emerged, what happened with the types of organisms.

Why do children spend less time in the natural environment?

Researches are the best indicator that over 94% of parents biggest concern when deciding whether to allow their children to play freely outside is the safety of their children (Bagley, Ball and Salmon, 2006). In research done on about 800 mothers has been found that 82% of mothers do not allow their children to play freely because of security reasons, 85% of mothers discovered that their children do not play in the natural environment because they play on the computers or they watch television, and 77% of mothers said that they do not have enough free time to take their child in nature (Clements, 2004).

These researches are the best indicator of how well bringing their children in nature would affect. Mental benefits are obvious: more play in nature will contribute to the prevention of child contraction in depression. In fact the role the experience of the child in nature has is invaluable precisely because it should allow the child to spend more time in nature.

Other benefits being provided by nature: psychological, cognitive, creative side, which is given from the nature to children. Children are smarter, more cooperative, happier and healthier when they spend more time in nature. Green fields for play lower the level of stress among students. Free play in natural environments increases cognitive flexibility in children's ability to solve problems, creativity, self discipline and respect for their selfs. Students achieve higher scores (standardized tests) when in the curriculum is involved visit in a natural environment. Even the attention of students is increased if they recently had access in natural environment

Why children need nature and nature needs children

Parents, friends, grandparents, teachers and all citizens are people who would do what is best for their children. In the past 20 to 30 years, the lifestyle is significantly altered by numerous negative effects on children, without a lot of people understand what is happening.



Picture 1. Natured by nature

As a result of that, lot of problems appeared in society itself, such as attention deficit, social and moral habits are low, all these things shall be added to the stress life of the young. They are psychological, social and physical characteristics of these changes. Such changes include: reduced time spent in nature, more time is spent surrounded by technology, and less and unplanned free time and 30% reduced use of bicycles.

Parents from all areas (rural, urban) noted many reasons why their children spend less time in the nature compared to them, including reliability, which should benefit their children, inability to access in the natural environment, competing among children in computer games, hazardous traffic, the large amounts of homework and other pressures imposed on children. Also parents fear of abduction of children by some unknown persons, although their number is remain almost the same in the last two decades, ie about 100 cases each year, while violent crime against young people has dropped to 1975 cases annually.

Parents have good intentions when they take their children to and from: school, extracurricular activities, sports events, dance classes, church and social activities. These activities are very important for children, but their lives and the lives of their parents is outside the track.

What is the result from all this? Children have little or no free time. Their lives are structured and planned almost to the minute. When they are at home, in their free time, and could be outside, they are often "attached" to some electronic devices. In a typical week, only about 6% of children aged 9 to 13 years are playing alone or with friends in nature. Studies have shown associations of certain significant reduction in the last decade of the children who know how to swim or fisheries, or even been on such activity. In San Diego, California, approximately 90% of children who live in this town do not know how to swim, and 30% of them do not even have a

beach. Teachers and other persons responsible for this abandonment were amazed by these results because children can not walk more than half a mile, without being physically exhausted.

Methodology

Our schools and kindergartens for more than 15 years are being encouraged through different projects to accept the principles of pedagogic practice, promote active involvement of students in the field of environmental education. Although it is harder to emphasize the positive benefits of direct contact with nature for children (educational - educational, cognitive, social) teachers still accept them as a form of instruction rather than as a strategy.

In this context, we made this research to show the relationship that exists (or is absent) among today's children with nature, benefits and consequences that children can have depending on the time you spend in nature.

The research was conducted in two kindergartens in May 2018. One kindergarten is "Vera Ciriviri Trena" clone "Razvigorche" located in the central city area in the municipality of Stip. The research was done in 31 children, of whom 18 were male and 13 female aged 5-6 years and involve large group before leaving in the first grade of primary education. Macedonia. The second is kindergarten unit from the kindergarten in suburban neighborhood Babi.

We interviewed 25 children, of whom 14 female and 11 male, aged 5-6 years. We made an questionnaire for the mothers of the children or total 25.

Interviews and questionnaire were conducted by students from pre-school education in the "Faculty of Education" from Stip, who realized there pedagogic practice of teaching subject.

The interview consisted of several questions:

- How old are you?
- To mark male or female
- Describe where you live? city/village/town
- 2. How would you describe the nature?
- 3. What animals do you often see in nature?
- 4. How much time during the week you spend outside? In what activities do you participate in?
- 5. What natural phenomenon have you seen? Describe them?
- 6. How much time do you spend during a week watching TV/playing video games or using a computer?

Results

After statistical processing of the data we came to the following results. Children who were interviewed from kindergarten Vera Ciriviri Trena clone Razvigorche live in Stip. Stip is large, populated city. We interviewed 31 children, 18 of them boys and 13 girls. Answers to the questions are:

2. They describe how beautiful nature is, imbued, and capable of creating many different things. "Nature is beautiful because there are many things that the nature can create, but we can not. There are many different and beautiful plants and animals. Nature is seen as something nice where animals are free, the trees grow and everything is green. Children distinguish between the world of nature and the human world (eg, "nature is what the country has made a world of animals, 'forests, meadows, areas not covered by buildings)

3. Children show at cats, dogs and pigeons as often seen animals. This animals are daily part of their environment. Three children who showed squirrel, deer and dolphin like animals which they have seen outside of their city.

4. Most kids say they go to play with their friends. One says "I care for my cat. Me and my friends heal the animals in the neighborhood.

5. Unfortunately, although many of them say they play outside, also spend most of their time watching TV or playing computer games. It is interesting that they know they do not have to do it, but they do. An interesting fact is that girls are not interested in playing computer games. Boys spend an average of 3-4 hours a day playing on the computer. On average children watch 1-2 hours of daily television. Before seen cartoons.

6. They describe what happened to them and how they feel when some of the mentioned phenomena occurred. Some of them tried to describe the phenomenon. "I saw the dew on the flowers. Like water. steam is not normally seen. When you see around you can not see anything. The rainbow is very beautiful and has seven colors. The ice looks like snow. As a white powder"

The second kindergarten in which research has been completed is unit of the kindergarten in suburban neighborhood Babi.

We interviewed 25 children, of whom 15 girls and 10 boys, aged 5-6 years. We interviewed the mothers of the children as well, in a total of 25 mothers. Answers were the following:

2. Nature is seen as something nice where animals are free, the trees grow and everything is green. Children distinguish between the world of nature and the human world. (Eg "nature is what the country has made a world of animals, 'forests, meadows, areas not covered by buildings)

3. Most children are aware of birds and various insects. Not distinguish between wild animals and pets

4. Children spend much time outside. After school, they meet with their friends to play, go there alone

5. They describe many natural phenomena in detail.

6. Interesting is the fact that girls are not interested in playing computer games. Boys spend an average of 34 minutes a day playing on the computer. On average children watch TV 60 minutes a day. The second part of our research is receiving answers from mothers of children surveyed in order to obtain more knowledge about how they spend their free time when they were children, and how their children spend their free time during the day. The survey covered a total of 56 mothers of children that have been interviewed in two kindergartens. After the statistical data processing we came to the following results: Over 85% (or 48 mothers) certify that their children spend less time outside than when they were children. Almost all mothers say when they were children they spend more time outside each day. 80% of mothers say they spend 3 hours or more playing outside when they were kids, unlike today when only 35% of children spend less time playing outside.

Discussion

According to the research made by Sandra Hofert at University in Maryland during the period from 1997 to 2003 has come to a reduction of 50% of time spent in nature activities such as hiking, fishing, beach games, gardening, etc.. The same researcher time spent in free play in the period from 1997 to 2003 decreased by 7 hours, and calculated that a week is 9 hours (Hofferth and Sandberg, 2001; Hofferth and Curtin, 2006). Children who are seven years old know to appoint more Pokémon characters than wildlife (Balmfold, Clegg, Coulson and Taylor, 2002). Knowledge of the nature is obtained even during the teenage and university years when they meet with subjects who studied it. The survey done on about 800 students at advanced level in science (at age 16 to 17 years) which was made to examine their ability to recognize wild flowers illustrated 10 images in color, about 86% of students could not recognize more than 3 types of forest flowers, and none could hit all 10 species of forest. Children aged 6 months to 6 years spend in average 1.5 hours per day with electronic media, while for children aged 8 to 18 years on average spend 6.5 hours a day on the electronic media, it is more than 45 hours per week (Kaiser Family Foundation, 2005 and 2006). Today's children have less freedom in dancing, have fewer friends to play, and have even fewer friends (Karsten, 2005). In the last 30 years the percentage of children who go on foot or bicycle to school decreased by 25%. Today only about 21% of children live far away from school for approximately 1 mile. In another study about 71% of parents said that while children went to school peshachejkji or by bicycle, but only 22% of today's children do the same (Beldon, Russonello and Stewart, 2003). Children often play at home, and their activities are controlled by adults, unlike children, over generations. Only 3% of today's children have the capability of mobility and freedom of where they want to play (Tandy, 1999). According to professor of social ecology at the University of Jeil, Stephen Kelert - experiences in a closed environment adversely affecting the process of maturation and cognitive skills of analysis, synthesis and evalvacija (Kellert, 2005).

Nearly 60% of children aged 5 to 10 years have at least 1 risk factor for cardiovascular disease, while the trend of rise in blood pressure in children 8 to 18 years is being continuously increased (Muntner et al., 2004). With this research we know that children today are more mentally active (when the natural environment) than are physically active, and as a result is increased body weight (Klesges et al., 1990; Baranowski et al., 1993 ; Sallis et al., 1993). Contact with nature can bring many benefits to nature. This can take place in the near surroundings - trees near buildings (Heerwagen et al., 1995) or in more remote environments (close park, an area with endangered species of organisms). Two surveys conducted in the Netherlands was established that: the health of people living at a distance of 3 km from a green area is significantly better than those who live in an area where there are no green areas (de Vries et al., 2003; Maas et al., 2006).

Some recent research concerning children's game. The time for playing, behaving in this imaginary, unstructured game is taken as an indicator of the completeness of child development (Burdette and Whitaker, 2005; Ginsburg et al., 2007). Unstructured game, without consideration whether it takes place outside or inside (the house) allows children to perform activities independently without adult to orient. During the game they solve problem situations, their imagination and skills in general are rising - something that is very positive in children's learning and development. Outside world, especially the various natural environments with different species of plants and landscapes to attract children and develop their curiosity, so to appear countless things that they want to investigate or to ask something, it becomes a playground for nature unstructured game. Children's curiosity leads to scientific research, not only research specific details.

Students who turn in the course of teaching experience certain activities outside the class or as teaching tools used objects from nature are more mentally active, have bigger considering for healthy food and feed mostly healthy, and they were more cooperative and creative in games, and in teaching (Bell and Dymont, 2006). Experiences in nature affect for the bigger success achieved in the school. Such research were conducted by students in California and continues throughout the country which showed that in schools where teaching is performed in nature-based experience have noticed increasing success of students 27%, not only for the introduction of environmental subjects, but for all other subjects.

Children with disorder of attention are described by their parents that they have very few symptoms characteristic of this disorder. While teachers are recognizing these disorders in children and added that these children are difficult to handle everyday environment and in some activities that are carried out in nature such as camping and fishing.

Parents and teachers, not only the children have benefits from the environment that are reflected on the health. It is believed that the experience in the environmental impact reduction or loss of a lack of attention during the classes.

Researchers in the UK (Pretty et al., 2005) and Sweden (Bodin and Hartig, 2003) found that people who run in natural environments with many trees, beautiful landscapes feel less anxious, less angry, and the level of their depression has been reduced, unlike the people who run and spend their calories consumed in the same room or other enclosed spaces.

This way of running and exercise in nature is called "green exercise". Studies made on the treatment in the hospital indicates that the treatment of patients is easier and faster when the hospital or have it near the green areas. In one survey from 1984 has been found that patients in rooms with view to trees and other green spaces left from the hospital sooner, but during their stay in it had less need for medication or any support from nurses (Ulrich, 1984). In another study conducted on people suffering from bronchitis to research any of the two therapies (1.sedativi or 2.sedativi and contact with nature) will operate better on the sick from the disease. Patients who received the second treatment immediately noticed the improvement and reduction of pain (Diette et al., 2003).

Conclusion

From the results we came to the following conclusions:

1. Children who live in big cities spend much more time at home, with the computer or TV.
2. Children who live in rural areas spend much more time outside, playing in nature, in compare with children who live in cities. They play computer and watch TV too, but also spend much time and outside the home. In this childrens there is a healthy balance between technical activities and activities in
3. Although modern society in all spheres of education prefers the use of ICT in teaching, some appears whose creations are phenomena of nature, the best experience is if you take the children outside and feel directly through their senses. Educationalists in kindergartens, and in schools through the Internet may show a variety of plants and animals, seas and lakes ... But if children cut their connection with nature, which is the subject of research in this paper, they unfortunately will not know what plants and trees growing outside their window. They may not know what an abundance of natural beauty where we have not heard a bubbling brook, the song of birds, the breath of wind ... and it all will feel if they are referred out of their homes. Slowly but surely effervescent children's voices before our yard disappears, various games such as folk etc. are forgotten, and full communication and socializing children and young people is through the keyboard and monitor.
4. As authors of this paper and educators of future educators of children from preschool through training courses, "Environmental education" and "child and nature" should teach our students how to find the mode and manner in which the children most of the day to

real live real life and virtual world is only a small segment of their daily education, because in contrast to create a generation that will not be able do to adapt to the challenges that life brings.

The main goal of harmonization of children to nature is to help build a society in which the public would be considered normal and it will be expected for the children to be outside and play in nature. Achieving this goal will require major changes at all levels: personal, political, institutional and cultural. We need a deeper understanding between parents, children and the environment - barriers that exist in urban, suburban and rural areas, but also the barriers that are more specific and have geographical, ethical and economic background.

Children and society as a whole have much to gain by increasing informal play and formal learning opportunities that schoolyards can be offered to children. Schoolyards are places where children can go back to the magic that is their right acquired by birth, ability to learn their unique way through research and discovery of the natural world. Also when schoolyards are integrated with the overall curriculum, comes to raising the academic education of children and education environment. But perhaps more importantly, schoolyards offer hope that future generations will develop the environmental values to become drivers of the Earth and the diversity of nature.

General conclusion

As general conclusion we can give our recommendations about how children can increase their interest in nature, and their contact with them. The final answer is passing more time playing outside, explaining to them how to plant a tree and how to care for them, to show how they should love an animal and to make a break from computer games and television.

REFERENCES

- [1] Bagley S., Ball K., Salmon J. (2006); Where do children usually play? A qualitative study of parents' perceptions of influences on children's active free-play, *Health & place*, vol. 12, no. 4, pp. 383-393.
- [2] Baranowski T, Thompson WO, DuRant RH, Baranowski J, Puhl J. (1993); Observations on physical activity in physical locations: Age, gender, ethnicity, and month effects. *Research Q Exercise Sport* 64(2):127-33.
- [3] Belden Russonello and Stewart. (2003); *Valuing Housing: Public Perceptions of Affordable Housing in the Chicago Region*. Prepared for Housing Illinois. Available at: www.housingillinois.org/pdf/Valuing%20Housing%20Short%20Report.pdf.
- [4] Bodin, M., & Hartig, T. (2003); Does the outdoor environment matter for psychological restoration gained through running? *Psychology of Sport and Exercise*, 4, 141-15

- [5] Burdette, H.L. and Whitaker, R.C. (2005); Resurrecting free play in young children. *Archives of Pediatric Adolescent Medicine*, 159: 46-50.
- [6] Clements, R. (2004); "An Investigation of the State of Outdoor Play." *Contemporary Issues in Early Childhood*, Vol. 5, No. 1, pp. 68-80.
- [7] de Vries S, Verheij RA, Groenewegen PP, Spreeuwenberg P. (2003); Natural environments — healthy environments? An exploratory analysis of the relationship between greenspace and health. *Environment and Planning A*. 35: 1717-31.
- [8] Dymont, J. E., & Bell, A. C. (2006); "Our garden is colour blind, inclusive and warm": Reflections on green school grounds and social inclusion. *International Journal of Inclusive Education*. PrEview article, 1-15.
- [9] Ginsburg KR, Committee on Communications, Committee on Psychosocial Aspects of Child and Family Health. (2007); The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics* 119: 182-91.
- [10] Hofferth, Sandra and John Sandberg. (2001); "How American Children Spend Their Time." *Journal of Marriage and Family* 63:295-308.
- [11] Hofferth, S.L. & S.C. Curtin (2006); "Changes in Children's Time, 1997-2002/3: An Update." University of Maryland, College Park, MD.
- [12] Kellert., S. (2005); *Building for Life: Designing and Understanding the Human-Nature Connection* (Washington, DC: Island Press).
- [13] Klesges RC, Eck LH, Hanson CL, Haddock CK, Klesges LM. (1990); Effects of obesity, social interactions, and physical environment on physical activity in preschoolers. *Health Psychol* (4): 435-49.
- [14] Maas J, Verheij RA, Groenewegen PP, de Vries S, Spreeuwenberg P. Green space, urbanity, and health: How strong is the relation? *J Epidemiol Community Health* (2006); 60: 587-92. Pretty J, Peacock J, Sellens M, Griffin M. The mental and physical health outcomes of green exercise. *Int J Environ Health Research* 2005;15(5): 319-37.
- [15] Sallis JF, Nader PR, Broyles SL, Berry CC, Elder JP, McKenzie TL, Nelson JA. (1993); Correlates of physical activity at home in Mexican-American and Anglo-American preschool children. *Health Psychol* 12(5): 390-8.
- [16] Stavreva-Veselinovska, S., Stojnic, M. (2007); – *Moving from biophobia to biophilia*, Congress of ecologists of Macedonia with international participation and marking the 80 anniversary of Prof. dr Ljupce Grupce's life and 60 years scientific work, 6-9 october, Struga, Makedonia.
- [17] Stavreva-Veselinovska, S. (2007); *The children's familiarity with the natural environment*. Международной научно-практической конференции "Традиции и инновации в дошкольном образовании" посвященной 135 – летию МПГУ, Московский педагогический государственный университет, 7 – 9 ноември, Москва p. 285-294.

[18] Ulrich, R. S. (1984); View through a window may influence recovery from surgery. *Science*, 224: 42-421.