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CONTENTS

ECOLOGIA BALKANICA
2019, Special Edition 2 pp. 1-7

Opportunities for Further Qualification in Environmental Communication in Protected Areas

Hristina Bancheva-Preslavska*

University of Forestry, Department of Ecology, Protection and Remediation of the Environment, 10 Kliment Ohridski Blvd., 1756 Sofia, BULGARIA
*Corresponding author: h.bancheva@ltu.bg

Abstract. Environmental communication is a nature conservation tool that uses communication approaches, principles, strategies and techniques, involving different social and age groups. The interaction with people is essential for efficient environmental protection and prevention, thus practitioners more often need to communicate environmental problems and solutions with children, adults, citizens and the society as a whole. In this regard, the study aims to identify opportunities for further qualification of university students and to verify an environmental communication training program in protected areas. Based on a literature research, a training program was developed, implemented and evaluated in "Vrachansky Balkan" Nature Park with a group of 18-29 years old youngsters. The results show demand for environmental communication skills and confirm the potential of the training program. Young people share that the acquired competences open new perspectives for their professional development. The study underlines the importance of such qualification for environmentalists and recommends its integration in their curriculum, its provision from nature and national park administrations, regional inspectorates of environment and water, centers of continuing education.

Key words: environmental communication, protected areas, education for sustainable development.

Introduction

LUHMANN (1986) underlines that there would be no public impact on solving environmental issues, while they are not discussed.

Environmental communication is the exchange of information about environmental problems and solutions. This is a nature conservation tool, which uses communicational, informational and educational approaches, principles, strategies and techniques for environmental protection. It includes diverse forms of interpersonal, group, social, organizational and media communication for prevention or solution of environmental threats. It covers knowledge in the fields of ecology, biology, geology, sociology, economics, politics, communications, etc. and is based on a professionally endorsed opinion, recommendation or a message, targeted to different age and social groups - children, youth, adults, local communities, local authorities, citizens, the public as a whole (FLOR, 2004).

According to MICHELSEN (2007), environmental problems require communication between different systems – political, legal, economic, educational, etc. and environmental communication is a "soft" instrument, which includes education for sustainable development, reports, initiatives, actions and campaigns for environmental protection, environmental consulting, etc. It is a very young scientific discipline and there is no certain theory for it, also as professional field, it is multifaceted. He defines four environmental communication methods, which are social marketing, civic empowerment, exhibitions and education.

The predominant studies in the education in environmental science in Bulgaria are focused on the high school stage and the fewest publications address the bachelor and master degrees. Non-formal education is insufficient explored. Studies about training of teachers, epistemology and philosophy of environmental science raise (Hadjiali & Kolarova, 2016). The research on information and digital technologies in environmental education also increase – virtual courses, gamification, distance learning systems are implemented to develop students' social and professional skills (Brezin *et al.*, 2013a; b; Asenova & Yotovska, 2014; Tuparov & Tuparova, 2018; Yotovska & Genova-Kalou, 2018).

Regarding environmental communication in particular, Bulgarian higher education institutions introduce it in the students' curriculum in different ways. As optional, in some universities in Ecology and Environmental Protection Studies, it is possible to choose a course of "public relations" or "communication skills", as part of their master's program (University of Forestry, South-West University "Neofit Rilski"). In "Konstantin Preslavsky" University of Shumen, students in bachelor could even choose among other disciplines "environmental education for high school students". In Sofia University "St. Kliment Ohridski" and Plovdiv University "Paisii Hilendarski" there are master programs dedicated to "environmental/biology education". Although there are possibilities for training in particular aspects, the efforts remain fragmented and a complete specialized course, where pupils can explore and practice vary environmental communication approaches, is still not integrated.

At the same time, the professional realization of graduate environmentalists in various state, private and non-governmental organizations daily requires from them to communicate problems and solutions of environmental issues to diverse target groups, using different methods and approaches. For instance, experts from park administrations need to implement more and more communication activities, because in the management plans of the Bulgarian nature and national parks, by law (Bulgarian Protected Areas Act, 1998), in their long-term and operational objectives, it is set to develop information and interpretation infrastructure for better understanding of the protected areas' conservation significance among the public.

In this context, this case study aims to identify opportunities for further qualification of university students and to verify an environmental communication training program in protected areas.

Materials and Methods

"Vrachansky Balkan" Nature Park and its biodiversity conservation is selected as an environmental communication object for target group of children and youth. The choice is related to the need for support in the multiplication of nature conservation activities among school pupils in the Vratsa region, expressed by the Nature Park Administration. Important reasons are also the continuous effective collaboration with the Administration and the possibility for advancement of previous results in this protected area.

This study is based on the existing and verified Methodologies: for conducting educational activities in the field of ecology and nature protection through non-formal education for sustainable development in "Vrachansky Balkan" Nature Park; for training of trainers and for educational tourism in the Park (Bancheva-Preslavska, 2019).

An additional literature review is carried out and various theoretical and practical sources of information about methods and techniques in communicating environmental problems and solutions to children and youth are analyzed. Respectively, an educational program consisting of theoretical and practical training is elaborated, implemented and evaluated in Vrachansky Balkan with 15 young people between 18 and 29 years old.

The participants in the educational program are randomly gathered during its popularization in the Vrachansky Balkan region. The information about the training is spread by local media channels (radio, TV, newspapers), via e-mail straight to 713 interested contacts and during personal meetings in 3 high schools in Vratsa and the pedagogical university department there.

Out of 21 candidates, 15 young people from 18 to 29 years old are selected by motivational letters. Unintentionally, about 30% of the participants study Ecology and Environmental Protection (EEP). The rest are freshmen in other sciences (biology, tourism, etc.), high school students and employed from Vratsa, Mezdra and Sofia.

The theoretical training includes 8 hours to broaden and deepen the knowledge of ecology and biodiversity conservation for the specific nature park and 24 hours of methods and approaches to work with children and youth in environmental protection. Both theoretical parts are integrated and presented in a complex four-day educational program. The program is built by three interlaced interpenetrating thematic elements: ecology and environmental protection, environmental education and non-formal learning methods (Table 1).

Table 1. Schedule of the theoretical training.

	Day 1	**Day 2**	**Day 3**	**Day 4**
Aim	*Introduction in the theoretical topics. Teambuilding*	*Deepening the knowledge in ecology and non-formal learning methods*	*Deepening the knowledge and developing skills for environmental education*	*Consolidation of the new learned*
Morning activities	• Arrival • Outdoor non-formal learning methods for knowing each other.	• Excursion with environmental education games – experiencing and reflecting. • Fauna of the "Vrachansky Balkan" Nature Park – typical species, terms.	• Threats for biodiversity in "Vrachansky Balkan" Nature Park. Challenges and possibilities for environmental protection and nature conservation. • Best practices in environmental education for youth – projects, programs, etc.	• Practice of educational environmental communication among each other. • Reflection and analysis. • Feedback on the training.
Afternoon activities	• Trainers' introduction. • Rules of the group. • Knowing each other & teambuilding games. • Protected areas and "Vrachansky Balkan" Nature Park. • Basics of environmental communication – theory and practice. • Environmental teambuilding games. • Teamwork. • Feedback and reflection on the day.	• Flora of the "Vrachansky Balkan" Nature Park – typical species, terms. • Educational communication – dimensions, functions, practical areas. • Tools for non-formal environmental education. • Teamwork on environmental scenarios. • Feedback and reflection on the day.	• Recommendations and rules for organizing environmental education initiatives. • Practical tasks – independent work outdoor. Preparation of a training program for a specific age group. • Feedback and reflection on the day.	• Departure
At night	• Environmental teambuilding games.	• Sharing skills' night. Self-organization	• Free time	

The theoretical training is conducted according to the "flow learning" principles of CORNELL (2015): inspiration – concentration – nature experience – sharing/reflection and according to the KOLB'S (1984) four-stage experiential learning cycle: concrete experience – reflective observation of the new experience – abstract conceptualization – active experimentation. Non-formal interactive teaching methods are used.

The practical training consist of 16 hours of developing and implementing their own communication strategies and direct work with school pupils. In this part, participants are mentored in 3 groups per 5 person to apply independently environmental education programs with 81 high school students and to establish their own campaigns and initiatives for environmental protection, targeted to children and youth.

The evaluation of the educational program is based on specially prepared tests and self-assessment surveys. The tests check the level of knowledge after the theoretical training about ecology and biodiversity in "Vrachansky Balkan" Nature Park and about methods and approaches for environmental communication with children and youth. Self-assessment surveys measure certain knowledge and skills before and after the entire educational program. The analysis is made according to the grading scale in the Bulgarian education system from 2 (failed) to 6 (excellent) and the results are processed statistically in MS Excel.

Results and Discussion

The tests of the theoretical training show that the group's results in both training topics do not differ significantly. In the theoretical training about ecology and biodiversity conservation in "Vrachansky Balkan" Nature Park, not surprisingly, the students in EEP have full excellent mark (6), but in the tests about methods and approaches in environmental communication with children and youth – 5,5 – less than the group result (Fig. 1).

Based on the survey, that measures certain parameters from 2 to 6 before and after the training, it was found that the self-assessment of the participants increased by 0.27 to 1.33 for essential knowledge and skills. These include knowledge in ecology and environmental protection, knowledge and skills for working with children and young people, communication skills, confidence, teamwork (Fig. 2).

Students in EEP have individual differences regarding some questions of the survey. For example, one student assesses his/her knowledge of ecology and environmental protection after the training lower, another – higher, and by the rest the assessment remains the same. The situation is similar to other questions of the survey, but benefits of the training are clearly highlighted, namely, with 1.50 and 1.25 respectively increase their overall assessment about their knowledge of methods and approaches and their skills to work with children and youth for environmental protection (Fig. 3). They categorically point out that the participation in this training broadens their professional horizons.

Still in their cover letters, students in EEP state the belief that this participation will extend their professional horizons. In their motivation to participate they also share, that they want to gain new knowledge and experience in their specialty, increase their professional confidence, and improve their communication skills. While their motivation is professional, the other participants show a need for information in environmental protection.

The own environmental communication strategies, which the participants developed during the practical training, include 3 campaigns and initiatives for environmental protection.

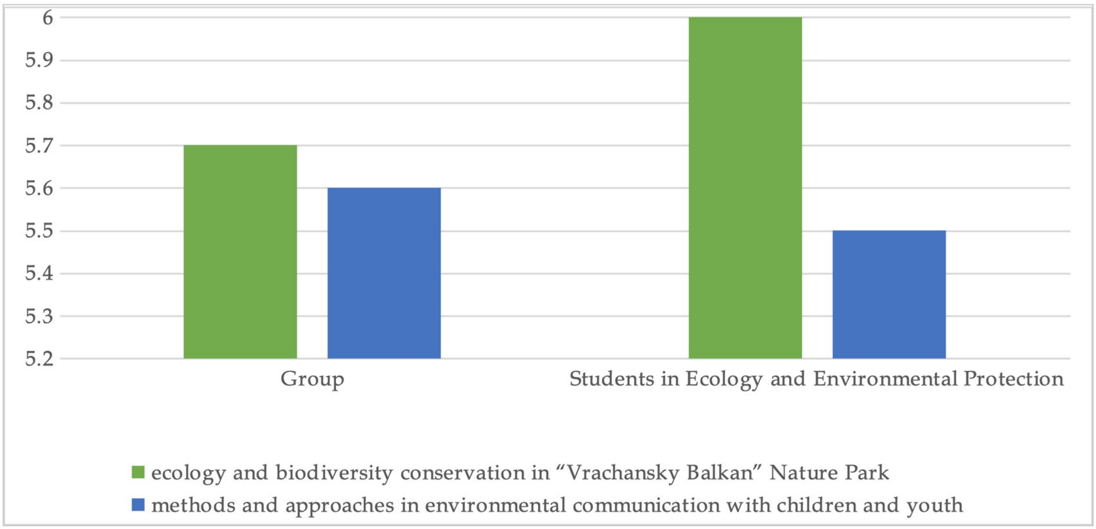

Fig. 1. Marks from the tests of the theoretical training.

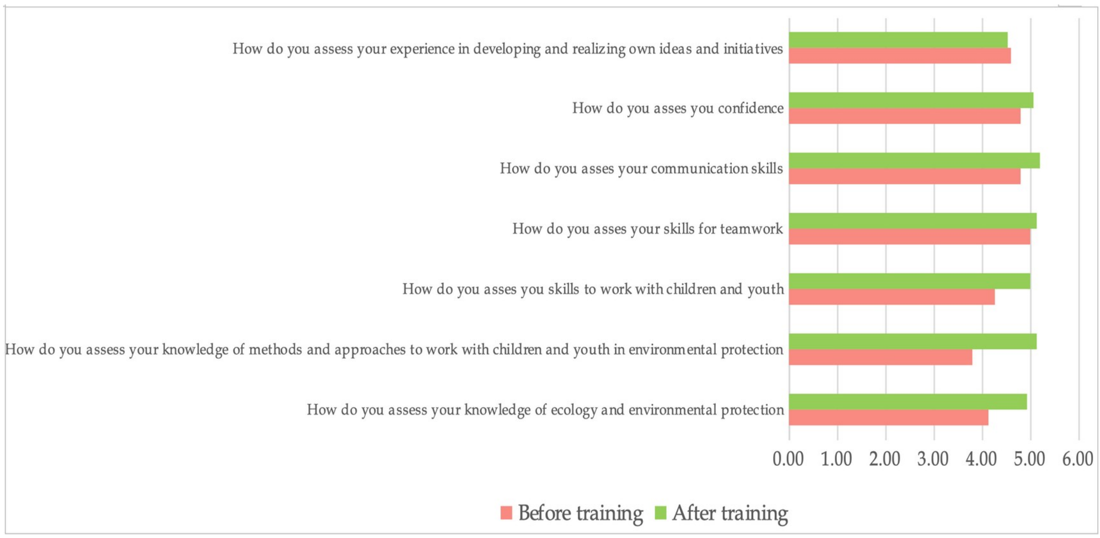

Fig. 2. Self-assessment of knowledge and skills acquired during the educational program.

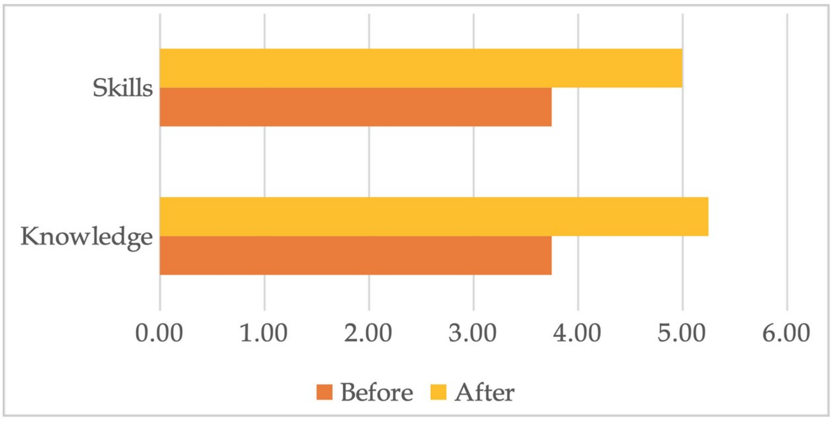

Fig. 3. Environmental communication with children and youth.

An award competition "The greenest class in Vratsa region" involves all local schools and requires from the school classes to proof their sustainability lifestyle and environmental protection activities through presentations, pictures, essays, videos, etc. 92 children (under 15 years old) and 76 youth (above 15 years old) take part.

Reality game in the nature "Hunting for adventure" for youth teams presents the biodiversity of "Vrachansky Balkan" Nature Park and the threats to it through experiential learning, with the purpose to motivate youths for its protection. It involves indirectly 12 742 followers from Bulgaria in Facebook and directly 64 young people from Vratsa who compete live in games.

"Otter in class" is an initiative of practical lessons for high school students from Vratsa, which introduces the anthropogenic impact on the biodiversity in "Vrachansky Balkan" Nature Park through non-formal education methods. It involves 124 pupils from three high schools.

Besides enhancing their knowledge about environmental protection and exercising independence in accomplishing their own project ideas, the participants in the environmental communication training program improve their social skills, their ability to work in teams, with and for other young people, develop their interests, their confidence and practical skills. This in turn helps young people to establish themselves as individuals and competitive professionals.

Environmental communication is becoming an increasingly topical issue faced by graduate environmentalists and the need to further their competencies in this area for better competitiveness in the labor market is growing.

Conclusions

The case study presents environmental communication, as a nature conservation tool. It proves the efficiency of a training program with university students for communication of environmental issues with children and youth in protected areas, after the example of "Vrachansky Balkan" Nature Park. It indicates a demand for such qualification from students in Ecology and Environmental Protection and underlines the importance of such a training for them.

A training in environmental communication could be offered as a specialized course for further qualification at the nature and national park administrations, regional inspectorates of environment and water, continuing education centers, etc. It could be complemented with more communication approaches and techniques not only for children and youth, but also for other target groups – adults, citizens, local authorities and communities, etc. to provide wider support to graduate environmentalists. It could be included in existing disciplines or be a separate one in the curriculum of students in Ecology and Environmental Protection.

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