



## FORMATION OF PRIMARY SCHOOL STUDENTS' ATTITUDES DURING SCIENCE LESSONS

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### Abstract

The main aim of environmental education is to form students' attitudes and positive emotional relationship with the surrounding nature. The science teaching at the primary school level is connected with the basis of general education (2009) and it is oriented on the implementation of modern educational tasks. They include, among others understanding of the relationships existing in the natural environment, human dependence on environmental conditions and human impact on the environment. So, asking questions and posing the hypothesis about the phenomena and the processes in nature is priority. The science knowledge which constitutes only the traditional canon of contents, is considered by students as unsuitable for everyday life (Silent, 2006, Wojcik 2005, Tuszyńska 2008, Potyrała, Walosik 2006, 2007). In this context we should take into account students' living situations and the possibility of undertaking decisions based on acquired knowledge and problem-solving activities. An important task facing the nature and biology teachers is to show students a variety of life situations requiring the use of biological and ecological knowledge. The formation of attitudes, especially pro-environmental behavior, is assumed from years (Mika 1981, Mądrzycki 1977). The main aim of this research was the evaluation of the level of environmental awareness of primary school students, participating in the workshops and definition of the influence of experimental teaching on shaping students' attitudes and level of understanding of the principles of sustainable development. The purpose of the survey research was the study of connections between the activities for the environment and these principles. 45 students of 6 primary school classes in Jaworzno participated in this survey. The results of participation of students in the workshops, point to the large role of the direct contact with nature in shaping the nature of activity and interest in the environment. Analysis of expression revealed differences in students' awareness and has shown the need for changes in existing methods of accounting for these issues. The research results point to the fact that the proposed forms of environmental activity help to increase students' ecological awareness and their proper pro – environmental attitudes.

*Keywords:* school trips, science education, workshop of science education, attitude research

## INTRODUCTION

Primary school students are attentive observers of the surrounding world. It is important that at the secondary level of education each student have an opportunity of developing their interest in nature. Those students not interested in natural sciences at all have to be considered as well. It is a teacher's responsibility to make the surrounding world as approachable as possible. And thus, not only should nature class take place indoor, but also one should consider conducting outdoor class. Any contact with natural environment is of cognitive and, particularly, emotional nature to a child. Maintaining the primary bond between a student and the environment gives birth to pro-ecological attitudes. When in the open, a child rarely manifests indifferent attitudes towards observed phenomena. Each observation produces particular kinds of feelings. Children experience happiness, worry, they even laugh or cry. One of the very main responsibilities lying in the scope of a teacher is to develop in students the ability to perceive relations and dependencies between living organisms, shape a caring attitude towards plants and animals, and discern the beauty of the surrounding world.

School not only offers a range of different class, but also school trips. These forms of didactic educational work are considered the most important elements of schooling and, at the same time, the most anxiously awaited events by both children and the youth. It turns out after years that school trips and all events connected with them bring the best and unforgettable memories. They enable the penetration of the unknown and facilitate human relations – we make friends for life (Goźlińska 2009).

A trip is a lesson of seeing, listening, thinking and speaking. Each one opens our mind and prepares for individual expeditions to satisfy our own curiosity, which is known as activity implementation, or otherwise tourism (Gutowska 1982).

During outdoor class, students are quicker at internalizing information; they are introduced to new subjects and real phenomena to which references are made at school, and can confront the book knowledge against practice and reality.

1. Trips in a form of a few days' workshops involve establishing relations with newly met people. Moreover, they are conducive to tightening bonds of already existing friendships and teach us how to cope with difficulties related to bashfulness, efforts taken and activity. In addition, they help develop perception and conclusion abilities.

School trips play a crucial role in education and didactics because: they facilitate experiencing the surrounding world, activate our observatory skills and provide us with perception material. Furthermore, participation in trips influences not only the speech development and thinking

process, but also enhances the emotional sphere and taste; it shapes proper social attitudes, makes emotion and cheerfulness sharing easier, introduces human relations, social discipline, solidarity, and brings about the attachment to the family surroundings, to one's own country, and patriotic feelings. What is more, trips make us more resourceful, resistant, cooperative, more persistent in overcoming difficulties; we learn different types of behaviour at different social occasions; excursions also give birth to multifarious interests and introduce new methods of experiencing reality (Gutowska 1982).

Involvement in science includes certain types of behaviour such as persistence, effort, concentration, as well as attitudes such as motivation, positive values of learning, enthusiasm, genuine interest (Connell, Wellborn 1991).

## METHOD

**The study aimed at** analyzing the influence of natural science class (in a form of 3 days' nature workshops) on developing an analytical attitude among primary school students.

**The following research problem was formulated:** 1. Does participation in nature workshops contribute to developing analytical attitudes in students? 2. Do students' interest in nature and their parents' encouragement to pursue such an interest impact the accuracy of addressing research problems by students?

**The following assumptions have been made:**

1. Participation in nature workshops exerts influence on the development of analytical attitudes in students.
2. Students' interest in nature as well as their parents' encouragement to pursue it affects the accuracy with which research problems are approached by students.

**In order to verify the study assumptions,** a study was carried out in a group of 6<sup>th</sup> grade primary school students. The group included 45 students, both female and male ones. The study was based on students' participation in 3 days' nature workshops. The workshop activities took place in the town of Chełm Śląski, Śląskie Voivodeship. The main workshop topics covered ecology and various manners of invertebrate adaptation to habitats in which they live (field class at accommodation quarters). Moreover, students were offered the chance to acquaint themselves with the topic of water quality in our country, in particular, water quality in their immediate surroundings (a visit to Water Treatment Centre in Chełm Śląski, an occasion to measure the current water level of Potok Goławiecki). Additionally, students were introduced to the subjects of land reclamation (mine dumps in the town of Bieruń) and endangered species protection (European bison in Pszczyna). Students were noticeably active during the workshops. The activities included not only group class (journalism, computer science and fine arts interest groups) whose main purpose was preparation of news sheet, but also individual meetings (job

sheets) as well as elements of laboratory methods (working with a microscope). Nature workshops constitute both knowledge gathering and fun at the same time. The students participated in group integration games, attended a disco party, and a common camp fire.

The study was carried out by means of a diagnostic survey. Two identical surveys were introduced; the first one was handed out before the commencement of nature workshops, the second after their completion. The survey questions referred to parents' support by broadening students' interest in nature, reason for nature workshop participation, leisure, experiment planning and formulation of research problems.

## FINDINGS

### **The following results were obtained:**

1. Students manifesting interest in nature, among others by participating in nature trips (95 % of respondents), watching nature films (70 % of respondents), animal breeding (70 %), independent observations (50 %), accurately formulate research problems.
2. Before nature workshop commencement, 30 % of students accurately addressed research problems, whereas after the workshops, as many as 84 % correctly approached research problems.
3. Field activities (particularly favoured by 90 % of participants) improved experiment planning.
4. Students encouraged by their parents to broaden their natural science interest (73 % of respondents) do not manifest significant difficulties in experiment planning.
5. Students who found time spent with their peers particularly appealing (95 %), that is a camp fire, group games, improved at formulating research problems.

## DISCUSSION

The basic educational purpose of natural science class is to develop observation and experimenting skills in order to experience the surrounding world. A student should learn by practice as it is individual experience with nature and knowledge applicable in real life that best work for children's learning process.

A well-organized school trip helps understand the surrounding world and, at the same time, satisfies the youth's hunger for adventure. Moreover, it ensures well being among the group of peers, cheerfulness, laughter, and allows spontaneous actions (Goźlińska 2009), which contributes to a student's enhanced analytical attitude. By means of games as well as participation in group activities organized during the workshops, a young person stimulates their imagination, which results in improved acquisition of research attitude. Owing to these efforts, a student learns the appropriate research behaviour.

A trip, just like any homework assigned to students, constitutes an integral component of teaching-learning process. In particular, it is a tool for realization of didactic tasks which may not be performed in class in a more demonstrative and comprehensible manner (Kupisiewicz 1996). Such

a component of teaching process stimulates creative, independent and critical thinking, which, subsequently, leads to improved formulation of research problems. This was verified almost three times by the study results.

Students who show interest in natural science (nature trips, watching nature films, at home animal breeding) accurately addressed research problems and correctly planned experiments. This results from a deeper knowledge of natural phenomena and dependencies between living organisms. Such students put effort into developing sensomotoric content representation from a number of research areas, which, consequently, leads to processing of them at a deep level. Taking it into consideration, each time they learn something new.

Trips cannot be replaced by even the most modern technical teaching methods which, in each case, are only intermediary means of experiencing reality (Zaczyński 1990). A student tangibly experiences research problems which haunt the youth at all times.

Workshops, which stimulate active participation of the youth, constitute the most appropriate form of activities which is conducive to attitude shaping, encouraging pro-ecological behaviour and emotional engaging in environment protection issues. Creative and emotional engagement facilitates taking deeper interest in green topics, and provides a strong drive to use the acquired knowledge for future behavior and actions. Workshop activities are particularly favoured by children and the youth (adults as well) due to the fact that each participant is treated as equally important, each may contribute and contributes their own opinions or experiences (Stawicka, Świderek 2002). Spending time together at a fire, singing and common games integrate participants, which influences self-acceptation of an individual. It is noticeable in active participation and more accurate experiment planning.

Students eager to be active in and outside the class succeed in learning (Newmann 1992).

## CONCLUSION

Trips, a few days' workshops are the basic form of shaping habits of human natural environment protection, and, at the same time, are a form of developing students' research attitudes. This type of activity satisfies a natural curiosity of experiencing the surrounding world by enriching the emotional sphere of a young human - a secondary school student. Workshops teach us that our attitude towards plants, animals and nature is a measure of our own sophistication and human social culture. Outdoor class accompanied by well-prepared observation and experiments contributes to learning and understanding of the natural law. It allows better understanding of various relations and dependencies occurring between environment elements, and, additionally, it encourages individual search for answers to haunting questions. Well-planned and organized excursions constitute a form of active mental work as well as relaxation to a student. Field activities introduce a student to a world in which not only proper relations to all living organisms are established, but also the sense of responsibility for our own actions against the natural environment is born. They should make students aware of the fact that they are an integral part of the surrounding world.

Not only do field activities contribute to developing observation skills, but also to extending knowledge and interests. Outdoor class makes us more attentive to the beauty of our planet, and by means of direct contact with nature and peers, we acquire knowledge which will persist.

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