

Outdoor Activities as a Basis for Environmental Responsibility

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ABSTRACT: Different environmental education programs (field trips, hiking, camps, adventure activities) aim to develop pupils' affective relationship to the natural environment, their environmental sensitivity, and outdoor behavior, as well as their social relationships, through personal experiences. This study discusses the results of experiences from outdoor activities involving 11- and 12-year-old pupils in Rovaniemi and Vaasa, Finland. The qualitative research methods comprised case studies involving questionnaires, individual interviews, drawings, photographs of landscapes, and participant observations during camps. Nature experiences developed the pupils' self-confidence and feelings of safety, in particular, which in turn increased their willingness to participate in future outdoor activities. In this way, nature began to have new meanings for them on a personal level. Comparing pupils who were experienced in outdoor activities with pupils who were not, it was found that the former seemed to have a strong and clearly definable empathic relationship to nature. They also exhibited better social behavior and higher moral judgements. The reasons for conflicts between environmental attitudes and action, still observable in some experienced boys of the Vaasa group, are discussed in terms of conscious vs. unconscious action and applied knowledge. The role and possibilities of outdoor education in environmental education and natural studies are emphasized for schools as well as for teacher education.

There is a need to develop awareness about the total human environment through programs designed to foster positive attitudes toward environmental improvement (MacRae, 1990). Different environmental education programs (field trips, hiking, camps, adventure activities) aim, through personal experiences, to develop pupils' affective relationships to the natural environment, their environmental sensitivity and outdoor behavior, as well as their social relationships.

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Teaching hiking skills is one basis of the environmental education program in the Teacher Training School of the University of Lapland. For Grades 1–6, the activities and main aims include (see details in Kuru, 1996a) trips to nearby forests (students learn to take responsibility for themselves, their personal belongings, and the environment by not littering and by tidying up), hiking in forests (learn about the terrain, animals, and plants, as well as the legal right of access to open country in practice), farming (learn about farm life), canoe trips to a national park (experience the national park through adventure), overnight skiing trips, and a three-day hiking trip (learn about winter nature, take responsibility for setting up camp, for equipment, and for food).

Corresponding outdoor activities are also included in the

program of outdoor/environmental education in the Teacher Training School of Åbo Akademi University with the additional inclusion of one-week camp schools in collaboration with the Department of Teacher Education. Outdoor education and environmental education are current projects at the Department of Teacher Education in Vaasa. These include teaching programs and research work that involve both student teachers and teachers.

The purpose of the outdoor activities is to give pupils out-of-classroom educational experiences involving direct contact with various environments. These experiences are intended to give pupils in-depth knowledge of environmental issues and to develop their self-confidence, environmental sensitivity, action skills, responsible action in nature, and their social relationships.

The purpose of this research was, in the context of responsible action (Hungerford & Volk, 1990), to get answers to and understand possible tendencies related to the following questions:

1. Do experiences in nature develop pupils' *self-confidence and action skills*?
 - Are there any differences between pupils who have experience with outdoor activities and pupils who do not?
2. What kind of relationships with the natural environment do pupils have?
 - a. What conceptions of nature do they have?
 - b. What do they appreciate in nature?
 - c. How do they value nature?
 - d. How important is nature to them (egocentric and/or ecological approaches)?
 - e. What kind of personal meanings do they have?
 - f. What kind of places do they prefer?
 - Are there any differences between pupils who have experience with outdoor activities and pupils who do not?
3. What does *protection of nature* mean to pupils?
 - a. Do they recognize/know about environmental problems?
 - b. What kind of attitudes to environmental problems do they have?
 - c. Do they have moral judgements from the point of view of ecological values?
 - d. Do they worry about nature?
 - Are there any differences between pupils who have experience with outdoor activities and pupils who do not?
4. What kind of *responsible action skills* do pupils have?
 - a. Do they want to take action for nature?
 - b. Do they know how to take action?
 - c. Do they themselves act according to their own attitudes?
 - d. Does self-confidence in general influence action competence?
 - Are there any differences between pupils who have

experience with outdoor activities and pupils who do not?

Participants and Methods

The participants were 11- and 12-year-old pupils from (a) the Teacher Training School of the University of Lapland, Rovaniemi ($n = 22$; 16 boys, 6 girls), (b) the Teacher Training School of Åbo Akademi University, Vaasa ($n = 8$; 6 boys, 2 girls), and (c) a municipal comprehensive school in Vaasa ($n = 6$; 2 boys, 4 girls). They were selected on the basis of a (questionnaire) survey of their experiences with outdoor education and outdoor life conducted in schools. Groups A and B consisted of those pupils who had the most experience with outdoor education and who attended the school that had had continuous outdoor education during several years in the forms of canoeing, hiking, sailing, tent overnights, and camp schools. Group C consisted of those pupils who had the least experience with outdoor education and who attended the school that had had only one outdoor program or sports day per year.

The qualitative research methods comprised case studies involving questionnaires, individual interviews, drawings, photographs of landscapes, and participant observations during camps (Fogelberg & Riih , 1996; Kuru, 1996a). The first selection of pupils was based on the questionnaire. Then the participants were interviewed individually about their conceptions of and feelings for nature and asked what nature means to them and how they can protect it. They were asked to name some local and global environmental problems that they knew of and to suggest what they could do to eliminate these problems. They were also told to describe pleasant and unpleasant experiences in nature. Furthermore, the pupils could express their feelings and emotions by drawing a natural environment in Finland that attracted them most and by choosing the most and the least attractive environments from a display of photographs of landscapes. Their concrete actions were observed by participant observations and filmed during the nature trips and camps in the school program, which included hiking to a campsite, pitching and unpitching a tent, preparing food, and participating in several adventure games and the camp fire program. Their abilities to orient, to find their way in the varied terrain, to take responsibility for their equipment, and to take into account the natural environment were observed, as were their ways of cooperating, taking initiative, being creative, and leading the group.

Results

The results from this investigation, together with previous studies, are analyzed as overviews and tendencies in relation to the main questions, including comparisons between pupils *with* and *without* outdoor education experience.

Pupils' Self-Confidence and Action Skills

The findings agree well with previous research (see, e.g., Dresner & Gill, 1994; Palmberg, 1989) that shows experi-

ences in nature with learned or improved action skills developed pupils' self-confidence and feelings of safety, in particular, which in turn increased their willingness to participate in future outdoor activities. This was obvious especially during camp and field observations when pupils who had experience with outdoor activities were compared to inexperienced pupils. The self-confidence and feelings of safety of the experienced pupils were expressed as independence from adults (teachers) and power of initiative in all practical work during camps. They also knew their own limits and were spontaneously open-minded and cooperative ("we try it together"). The inexperienced pupils were considerably more uncertain and needed a lot of help. They were anxious about trying new things (e.g., lighting a spirit stove), were very quick to express their inability to do things ("I can't"), and had more difficulties in working as a group. Adventure education appeared to have a good chance to confirm group feelings, especially through problem-based learning where all group members are needed for the group to be successful.

Pupils' Relationships to the Natural Environment

Through the study of adults and their relationship to nature, three main groups of conceptions have been identified (see Ballantyne & Packer, 1996):

1. The *egocentric* conception that is interested in preserving individual health, safety, or quality of life. Environmental problems are immediate and local, and the environment is seen as something to be used.
2. The *guardianship* conception in which the future of one's children and the survival of the planet are important. Environmental problems are long-term problems, including global concerns. The environment is seen as something to be managed to ensure a sustainable future.
3. The *ecocentric* conception in which humankind is seen as an equal or interdependent part of the environment. Problems concern complex issues of interrelationships.

In this study, the pupils' *conceptions of nature* varied widely and could be seen in the light of their experiences and the importance of nature to them. These conceptions had various meanings on the personal level, mostly according to how nature was used (e.g., hiking, camping, hiding, or places for games), and most of the answers fell into the category of *egocentric* conceptions. Additionally, a majority of the pupils named only some part of nature (e.g., "plants, trees and animals" or "wood and animals" or "flowers"), but some of them defined it also by feelings, like "exciting," "just wet and humid," "peaceful," or "beautiful." In general, the more experienced pupils had more comprehensive definitions and conceptions than the inexperienced ones. Thus, there were differences with how and what they appreciated in nature. Some pupils looked for beauty in the natural environment, others sought privacy and peace from outside noise or the freedom to express themselves.

Nature was important to most of the pupils. To some of

them it was an important place to go, to others it was important from an ecological point of view (e.g., as the home of animals or as a maintainer of life). In general, they experienced nature as an alternative to the constructed environment. To pupils who mentioned active conceptions of nature, nature had an instrumental value, whereas to pupils with beauty and privacy conceptions, nature was considered to be a value in itself and their concern was especially directed toward the welfare of animals.

Activities in nature, aesthetic meanings, and meanings connected to psychic self-regulation were the three categories of *personal meanings* constructed by personal experiences. Swimming, skating, skiing, hiking, and different kinds of games mostly evoked emotions like pleasure and acceptance, whereas fishing, exploration, adventures, and walking alone were experienced as curiosity, excitement, interest, and pleasure. Pupils who had different kinds of sports as hobbies saw the natural environment as a field of action. The pupils' drawings indicated that to them a pleasant, natural environment was also a beautiful environment, being a typical Finnish landscape. When viewing the displayed photographs, they preferred places with smoothness, light, complexity, mystery, and water. These preferences were, of course, connected to personal meanings that were based on pupils' own experiences and emotions (Kuru, 1996b).

Comparing the pupils who were experienced in outdoor activities with the pupils who were not, it was found that the former seemed to have a strong and clearly definable empathetic relationship to nature. They also exhibited better social behavior (i.e., they easily agreed on how to share tasks, how to work efficiently as a group, and, even more, how to enjoy the experience) and higher moral judgments (see next section).

Pupils' Knowledge of and Values in the Protection of Nature

In addition to the concern about the welfare of animals, the pupils emphasized the importance of the protection of nature in general. Most of the values and concerns were based on personal feelings, like "it makes me sad when they fell trees because animals lose their homes" or "it feels like somebody broke toys." About half of the pupils expressed anxiety concerning nature. They had, however, difficulties in distinguishing environmental problems at different levels. Pollution of nature was named as a major problem in most of the answers, but pollution was explained in several ways from a littered environment to air pollution (with breathing difficulties) or water pollution (resulting in dead fish and nasty water). When they were asked to give examples of global environmental problems and how to solve them, many of the pupils mentioned exhaust fumes from cars and solved the problem simply by recommending bicycles instead of cars. Only a few mentioned unleaded petrol or the use of public transport. Other suggested problems were war, oil from ships, accidents, forest fires, and poisonous waste-

water from industry. Several of the pupils (mostly found among the "inexperienced" ones) could not, however, give any examples. The most experienced pupils, on the other hand, showed strong *reactive empathy* to nature (in association with pictures) and could, more strongly than others, express feelings that even included the feelings of other people and organisms. They had strong emotional reactions and a need to do something against man's unfairness to nature and, especially, to animals. Thus, the level of moral judgement from an ecological point of view was high among the experienced pupils. This, of course, also had to do with other things like the development of their cognitive structures.

These results confirm previous results about the same kind of worries and values, observed after two-week camp programs with children 10 to 13 years old (Dresner & Gill, 1994). According to them, the pupils were active in talking to others about their concerns for environment. They felt a deep concern about pollution wrecking trees and ruining animal homes and about animals and trees being used wastefully.

What emerged was that pupils 11 to 12 years old mention very concrete environmental problems, like littering, but have difficulties in understanding the consequences of and connections to other global problems. Their knowledge of the problems is still on the level of news (e.g., from current topics in media, they can mention them but not explain them) or something not concerning themselves (like problems concerning rain forests or ozone layers, which they think they cannot do anything about). On the other hand, they easily worry about things that they do not fully understand or things they do not have any action strategies for. The pupils' knowledge of environmental problems is still very fragmentary and out of their context. These are facts to be taken into account when planning environmental issues education for primary schools.

Pupils' Environmentally Responsible Actions and Action Skills

Responsible environmental behavior is a learned response or action. Research shows that increased awareness and knowledge of environmental action strategies contribute to increased motivation to take action. Self-esteem and pupils' beliefs and values are other factors related to taking action (Dresner & Gill, 1994; Sia, Hungerford, & Tomera, 1985). The importance of the action component of environmental education programs is now well recognized (Aho, 1984; Aho, Permikangas, & Lyyra, 1989; Gough, 1990). However, the results of a previous study (Sjodin & Stenström, 1989) and the present one still show that there is a deficiency in action competence among pupils in primary schools (and, therefore, also in educational programs).

The most commonly suggested action for nature was to stop littering and to pick up litter. This is a very concrete action, but it was not understood as part of reducing waste and recycling. Thus, minimizing the amount of waste products was not seen as a possible way to act, although this is a very popular subject in environmental education in

schools (again, an example of a subject out of context). In the Vaasa group, the pupils almost always answered first that they do not sort their waste at home, but, when asked specifically about paper, glass, and batteries, they knew the different colors of the "litter boxes" for different waste products (the color scheme is according to the instructions of the Town of Vaasa). Most of them could also explain that the amount of garbage decreases in compost because it turns into soil. Other actions they suggested were the use of bicycles instead of cars, the use of paper bags instead of plastic ones, discovering better things (technology employed in solving the problem), talking to adults, or participating in some environmental society. Many of the pupils, however, had difficulties in thinking of some actions to help nature. Some of them did not want to help. It may have been easier for the pupils to get various problems presented and, in this way, try to find ways of solving them (cf. Aho et al., 1989).

Although most of the pupils mentioned not littering as a positive way to act for nature, many of them confessed that they still occasionally threw litter in the streets. Also, during the one-day camp in Vaasa, some pupils whittled at living trees. The remarkable thing is that two of these boys are scouts, and they both liked having many activities in nature. The reasons for conflicts between environmental attitudes and actions may be explained in terms of conscious vs. unconscious action, as well as fragmented knowledge, which does not reach the level of applied knowledge.

Conclusion

A multivariate approach to the study of environmentally concerned behavior is necessary to fully account for differences in environmental action (Axelrod & Lehman, 1993). According to Dewey and modern constructivism, teaching has to be anchored to the everyday life of the pupils. Pupils learn best from the problems that arise from their lives, which they themselves solve. There is, however, no educational end in itself to pupils' own activity. The importance lies in what is done, what the aims of the action are, and how the action is controlled to make it part of a systematic overall process, where the teacher directs the constructional processes of knowledge (von Wright, 1996).

Both knowledge and values play a major part in decision making. Knowledge that enables pupils to understand the dependence and interactive relations between man and nature will, together with personal values, form a basis for a willingness to act. Scouting organizations have many outdoor activities and aims that coincide with those of environmental education (e.g., two principles in their four basic elements, i.e., "learning by doing" and "action in nature," Hult, 1994). In addition, they have environmental education as an overall aim, and they have as individual goals responsibility for themselves, their environment, and a healthy way of life. Knowledge of nature and nature conservation gives the scouts the action skills to visit nature during all seasons and conditions. Experiences in nature and the social

aspects of this interaction are also emphasized as they are in environmental education. Scouting, which involves both value education and reflective thinking, is one way of learning about nature *in* nature and developing action skills to protect nature. Further research is still needed about scouting in practice and its effects on the development of environmentally friendly behavior.

Another important matter to address is pupils' feelings of being capable of doing something important in order to save nature (in their own neighborhood). This is one way of making environmental issues an integral part of instruction designed to change action, with instruction going beyond "awareness" or "knowledge" of the issues (Palmberg, 1995). It is essential that pupils are given the opportunity to develop a sense of ownership and empowerment (Hungerford & Volk, 1990) so that they are prompted to become responsible, active citizens who can also affect the attitudes and behaviors of the older generation.

Various activities in outdoor education can stimulate environmental education and nature studies in suitable ways so that pupils learn about and experience nature while, at the same time, they learn action strategies to protect it. Experiences in outdoor activities offer great possibilities for the development of a strong empathic relationship to nature among pupils (and their teachers!).

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