

A conversation with Bernard Graves

Ways of knowing, know-how & knowledge with reference to Steiner Waldorf Education

The Rosenhill Gardens and outdoor environment on Ekerö have, for some years, embraced an inspiring educational project, formed and facilitated by Bernard Graves. The content of this course provision was outdoor education, delivered through practical work, craft and science. The start-point was the setting and natural conditions offered by the Rosenhill environment.

In summer of 2011, for the whole of a week in June, teachers, therapeutic educators and teacher trainees gathered at Rosenhill to participate in the 2011 course. Throughout the week, I took advantage of available opportunities to have a series of conversations with Bernard and follow up various thoughts and ideas, touched on during previous visits, which formed the basis for the project. Our discussions primarily centred around the need for and the potential this project at Rosenhill opened up for developing hands-on knowledge within the educational provision for science, as well as handwork, art and history. Our discussion centred around the importance of the potential and the role of this type of practical education. Furthermore apart from the range of knowledge required within the separate disciplines, Bernard was looking at wider and more encompassing implications of experience-based practical education.

Nurturing Relationship To
Nature, Deepens Our Own
Capacity For Self
Knowledge.



The project began with a study of the Rosenhill landscape. Under Bernard's guidance, we studied the topography, vegetation and traces of geological/biological processes in our environment. The aim was to make an inventory of resources in the landscape, in order to find

a suitable clay, one that could be used for stoneware, as well as other materials required to transform the clay. With these objectives in mind, we took ourselves out into the environment.

Everything in nature is there for a reason. All natural deposits of material, animals and plants have come into existence interdependently in a given spot. Occurrences of clay, gravel,



specific plants, trees and birds form a whole and manifest a context of interdependence, development and origin.

When looking for resources in nature, a raw material for a specific purpose, a kind of knowing is needed to read the surroundings and find the particular quality of raw material required. By reading the processes, which have fashioned the landscape, we can find the

kind of wood, plant, sand, soil or quality of clay we need for a specific purpose.

The course participants in this way, with Bernard's guidance, studied the topography, vegetation and traces of geological/biological processes in the surroundings.

These seams of knowledge connect us with nature in several ways. We began by studying the surrounding landscape to learn to read the geological, physical, chemical, biological processes that formed the landscape. This reading of the landscape gave us an idea as to which natural resources might be available, as well as providing an orientation within the landscape geography.

After the orientation in the landscape came the work of collecting minerals, wood, plants and more. Through this involvement and our various activities, finding and transporting material to the place where we would be working, we connected with our surroundings in a new way. This gathering activity provides experience about the quality of the natural materials, and in what way and in quantity they are located in the surrounding landscape.

I find clay in the lowest point of the valley, but sand on the slopes, some plants and trees in moist shade and others growing in drier, lighter locations. This connecting with the environment, forged by the project work, also builds up an intuitive faculty that leads me to the material I need. Something familiar to anybody who goes mushroom or berry picking in the woods.

To determine the quality of the collected material, I must now taste, smell and feel it to help me discern how the material might be used.

This involvement and interaction with nature can be as much a source of self-knowledge as it is a way towards knowledge of the natural world. Knowing and being involved with the materials, natural world and surrounding landscape evoke empathy. In order to understand and form a judgment about how the natural processes have fashioned and imbued certain materials with specific qualities, I need to live into, appreciate and be able to imagine the potential in a material. Sensory interaction will help me obtain as full a picture as possible of the material in question. The experiences received through empathy and working with the material also teach me something about myself. When I dig, drag, trample, saw, chop, lift etc, I engage with my will. Work and empathy teach me through my body about inner qualities and characteristics of the material I am working with. I connect that which is nature within me with the nature outside of me.



The natural world is built up with meaning and context in its structures and processes, in which I can participate, by involving myself in the ways described above. The knowledge I receive by exploring natural materials and phenomena like this are formed in direct relationship with context and meaning in the natural world. This is not knowledge based on assertions or models of nature. It is a skill, formed in relation with the experience of the natural world I am investigating. When natural context, materials and processes become available to me, when I

experience the qualities and potential in a material, my own creativity can enter in. In this manner, Human creativity and creative processes become a prolongation of the creative power of nature.

Science, by and large, shares its origins with handcraft, agriculture, etc. Once the concepts that describe the characteristics, qualities and processes in nature are coordinated and systematized, there is a shift from “something you do” to “something you know”. This knowledge is transformed from craft and practical knowledge into scientific knowledge.

Teaching Natural Sciences - the new Swedish Curriculum Guidelines

The new curriculum guidelines and syllabus have explicit learning objectives and skills requirements that teachers need to take into account. At first glance, it looks like the phenomenological entry route to natural substances and matter, using the experiences of material, scent, colour and process we are used to in Steiner Waldorf schools, must give way to thinking in models and factual learning, even in the lower classes. But if you read what the objective of the natural science syllabus, it becomes quite clear that it contains the rationale for teaching as described above, and even more so than previously. The introduction to the science coursework is as follows:

Science has its origin in human curiosity and the need to know more about human beings and their surroundings. The study of biology has great significance for social development in areas as diverse as health, use of natural resources and the environment. In studying nature and humankind, people are given the tools to affect their own well-being, as well as contribute to sustainable development.

This introductory text shows clear similarities with the Steiner Waldorf approach with regard to how an awareness of nature arises, is developed and its bearing on human and social welfare. Of course, there are different views and interpretations of what “development” and “human welfare” might mean. Further on in the passage, more is given, that if interpreted and included in Steiner Waldorf teaching practice, could be used to support teaching in so far as it is concerned with deepening the relationship between humankind and the natural world.

What is taught should give students the opportunity to use and develop skills and tools to formulate their own arguments and examine those presented by others in contexts where some knowledge of biology is important. In this way, students should be equipped to deal with practical, ethical and aesthetic choices that involve health, natural resources and environmental sustainability.

This study of biology should also help students develop familiarity with biological concepts, models and theories, and to understand how these are developed along with experience acquired in studying nature and humankind.

The introductory text to both the chemistry and physics coursework is almost the same.

What constitutes an ethical choice in connection with nature, and what are the ethics, for whom? Bernard believes that an educational project, which gives us the skills to connect with nature, gives us the pre-requisites for ethical behaviour, instead of just conveying conceptual knowledge based on assertions about nature. Practical education instils an ethical approach, based on an awareness of nature arising from the natural world and also including the natural world. If the school, as stated in the syllabus, is to develop natural scientific concepts and models alongside, and with, the experience of nature growing in the students, should the start-point not be experiential and interactive? This requires the school to develop a teaching methodology with the focus on how concepts are formed out of practical experience. It is in this area that the outdoor classroom can become highly relevant.

Nature as the Outdoor Classroom

“There needs to be a bit of chaos to start with”, says Bernard. Chaos is a necessary part of the process whereby the individual in a group engaged in a project navigates through the various stages of the project and in the working environment. We have become accustomed to a way of cognition in which order, rationality and clarity are taken for granted as the starting conditions. In this educational approach, order and the overview are fashioned rather by each person all the while work progresses.

When the classroom moves outside, teaching must be planned according to the conditions given by the environment. Out in nature, the teaching space and class time no longer provide

a clear framework, by which teachers and students can orient themselves. An educational project, such as our 5-day clay project, contains so many stages and processes, making it impossible to give a clear idea in advance of everything that is to happen. Furthermore, it is not possible to give a detailed, step-by-step outline of the stages of the project, nor would it benefit the students' understanding of what to expect. Instead the project starts with individual tasks that do not of themselves provide a complete picture of the entire project. Collaboration occurs as a matter of course when the situation, the task requires it.

Work starts with each person finding his or her bearing in the landscape and gathering various materials that might be used for the project. The collected material is worked through and sorted depending on what it will be used for. The wood was sorted into three different grades and lengths, depending on the area of usage. Wood for the kiln, wood for charcoal burning and scrap for firing up the heat in the charcoal burner. The ground areas were also prepared for their different purposes. Long sessions of work were interspersed with gathering together, with people describing the properties of the materials and reflecting on their experience. Through this, concepts and terminology are deepened, entering a more detailed level when linked up with practical experiences.



Without needing to talk about the elements beforehand, it became apparent that this work was engaging us qualitatively in four different ways through the various processes. There was the clay, the earth element, as the start-point of the project. To process the clay, water is needed to dissolve it and to flush out matter that is not wanted in the fired product. The element of air has to do with the drying, but also has a relationship with fire. The kiln and the charcoal stack we were constructing were built so that the fire could be controlled through regulating the

airflow; and finally the element fire, is used as the transformative power. It needs the right conditions to bring about the results we were after. Of course, fire was made in various ways without matches in the project week, including bow and sticks, flint and tinder. The elements of earth, fire, air and water form the interface between myself and the natural world, on several different levels. Interacting with the elements provides qualitative Gateways into different areas of experience, both out in nature and of myself as a human being.

The focus and tempo change as work progresses. What was initially a range of individual tasks, scattered around the whole of Rosenhill, gradually, with all the gathering in and working through of the various materials, took on a collective focus, with everyone concentrating on making objects from the clay, building the kiln and the charcoal stack.

The charcoal stack, clay dryer and the kiln are constructions based on a process and with a function. All the design solutions and considerations serve a purpose. The form of the kiln did not come about through predominantly aesthetic decisions. Yet the function-led aesthetic has its own appeal mainly because it is practical and right for the purpose.



Does The Approach To Teaching In This Area Need Re-Thinking?

Last spring, a report was published by the Swedish Environmental Protection Agency, entitled: “The Healthy Outdoors? - Research perspectives on the significance of contact with nature for children's health and relationship to the environment”. The report includes descriptions by four researchers within different disciplines – human ecology, medicine, environmental education and environmental psychology – about various aspects of the importance of contact with nature for children and young people in their development. The report raises questions about what is happening to us now by living our lives with very little connection to nature. One manifestation would appear to be a growing fear of being out in nature. The natural world is seen as dangerous, dirty and full of infection or allergens (p 103f). Nature itself is not experienced either as an interesting space by young people and being outdoors needs to be filled with activities and stunts. Another part of the report underlines the importance of the pre-school and school working consciously from early on to create a positive attitude to being out in nature. The attitude and relationship established in our early years shape the way we relate to nature in our adult years.



Being outside and connecting with nature are also important for forming identity and belonging in a child's development, the report states (p 98). The landscape surrounding us and our relationships to it, create a cultural affinity and a reference point in the forming of identity in a child. The concept of sustainable development has already been extended to include cultural, salutogenic and social aspects of what is considered sustainable for the future. Here again the new State Science syllabus in Sweden requires the Steiner Waldorf movement to revise its traditional approach and review how to introduce and then develop an understanding of the natural sciences.

There are demands from society and this will put pressure on the Steiner- Waldorf schools, Class Teachers and Upper School teachers to be more explicit regarding it's science education throughout the Curriculum. Much of what was done in the more senior classes must now be done in younger classes but still retaining a 'phenomenological' approach. The question is, how can Steiner schools provide a foundation of personal experience and relationship with nature that in the Upper school needs to be understood more conceptually?

If the school is able to offer students a rich and diverse foundation of experience for developing cognitively, it needs to make some carefully thought out educational and methodological decisions. Teaching outside the indoor classroom requires completely different capacities and skills of a teacher than working inside a classroom. Fundamental to this is that the teacher emits and transmits integrity in what is done and taught. To meet the learning targets, schools need to develop and foster a teaching and learning culture that thrives in 'welly boots' and outdoor clothing.

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