

Relationship-based experiential learning in practical outdoor tasks

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How can we help children and youth find a balance between a global pace of accelerating change and a meaningful, sustainable way of life? We will present our experience in using practical outdoor tasks in gardening and farming as a means of anchoring pupils in their local environment. Participation in productive activities contributes to identity-building which is a pre-requisite for development of a global perspective. To be able to contribute to the global challenges of our time, it is our contention that young people need grounding in practical, positive work with nature such as in ecologically sound gardening and farming.

We build upon 15 years of experience which started with the project *Living School* in Norway. The project implemented gardening as well as cooperation between schools and diversified farms as arenas for learning in primary education (class 1.-10., 6-16 years of age). Experiential learning for sustainability is a central aim in these projects. As in other industrialized countries, Norwegian youth are increasingly estranged from cultivation of nature and other practical arenas for learning. This results in a scarcity of experience in mastery of skills and practical know-how. In addition, most youth have a limited understanding of where food comes from, few connections to local enterprises and little experience in contributing to practical tasks. Accompanying this lack of concrete experience, we see behaviour problems at school which deter learning, especially among boys. In psychiatric health care, sadness and depression represent a rapidly growing diagnosis for youth between 13 and 17 years of age, in addition to a flora of food-related disturbances. The lack of a sense of one's own purpose and meaning in life and the lack of opportunity to contribute illustrates an existential challenge in a society which emphasizes identity and gives each individual responsibility for creating his/her own self. There are complex causes for the decline of a sense of meaning, but it is obvious that the dissolution of connections between youth and society, role models and local anchoring is of great importance.

This is the background for the question posed at the University of Life Sciences in Norway: "How can we contribute to fostering hope, courage and resolve in children and youth so that they are able to participate in a productive way in shaping their surroundings?" The concrete goal was to create pedagogical spaces where committed, caring and continuous work with and in nature could promote local "rooting" and a feeling of belonging. The purpose was to give pupils an opportunity to develop basic competencies in interaction with others and learn to know the local culture and use of their surroundings in a sustainable manner.

Since the work started, more than 300 projects with school gardens and/or farms and schools have been established. The societal changes which motivated the original project have become more obvious.. School age children use more time in front of screens. Communication with others occurs increasingly through MSN, Facebook, SMS and similar media. Climate change, financial crisis, natural catastrophes and unemployment create uncertainty about the future and thus, rising fear and insecurity in youth. The drop-out rate is more than 30 % in the first year of secondary schools (16/17 years of age). During this time, we have harvested positive results from the experience and reflections of youth on their participation in the projects already established through *Living School* (Jolly 2009, Jolly and Krogh 2010, Jolly and Krogh 2011). Their experience has given us insight into how outdoor arenas can contribute to fostering sustainable action and sustainable lifestyles. In addition, this feedback has inspired a new model in relationship-based experiential learning.

In the following text we will explain why the cultivation of nature is used as an approach to learning in Living School. On the basis of concrete examples and theoretical reflections we discuss how this form for relationship-based learning can stimulate pupils to become active participants in sustainable development. Our model for relationship-based experiential learning comes at the end as a synthesis of the learning process which is described in the text.

Meaningful contexts and relationships as a basis for learning

“What are we going to do next time we come to you, Gunnar? This question is one Gunnar Alstad has heard many times when he meets pupils from the local school. Gunnar runs the family farm with milk production in Northern Trondelag and has begun a partnership with the school. The parents say that the children come home excited about their experiences and tell many stories after a school day on Gunnar’s farm. This is not what they usually hear. Earlier Gunnar was a teacher of math and science. He can’t remember such enthusiasm for the next lesson as a classroom teacher.

The excitement and interest of the pupils experience in participation in practical outdoor tasks promotes motivation.. The will to act is awakened and strengthened by the focus on a concrete goal. Focus has to do with the relationship between the one who acts and the task at hand. Gardening and farming are characterized by tasks that call on us to be done. The plants wilt if they aren’t watered; the pigs howl if they don’t get fed. When the needs of the plants and animals are met, they radiate health and well-being. Through participation in the tasks, the pupils establish relationships to living organisms which are dependent on cultivation and care. Two different effects are to be noted in this process. The first is training in regulation of different qualities of the will (Assagioli 1974). The tasks demand control, discipline and mastering to be able to be done in a satisfactory manner. Tenacity, patience and perseverance are examples of qualities of the will which are developed. The second effect is the transition from immediate experience to in-depth experience and conscious empathy. The living organism and its well-being becomes a personal concern.

Learning for sustainability is often equated with education of a critical sense of judgment. Sustainability presupposes the ability to make well-grounded choices in a complex society which is characterized by considerable uncertainty. The capability of critical judgement is however no guarantee for making a contribution to sustainability. Both research on the motivation of environmental activists as well as our experience from Living School indicates that a positive emotional and purposeful relationship to the environment is an important premise for wanting to know about the natural environment and for taking responsible action. In a book which was published posthumously, Rachel Carson wrote, “I sincerely believe that for the child, and for the parent seeking to guide him, it is not half so important to *know* as to *feel*. If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow.” (Carson 1965: 46)

The social anthropologist Kay Milton (2002) concluded on the basis of her own research and a literature review connected to environmental activism that our relationship to nature is directly affected by the experiences we have had with nature and with use of nature. According to Milton, those who are engaged in environmental issues are characterized by earlier, emotionally positive experiences in nature. Louise Chawla’s (2006) study of biographies of environmental activists shows that both their engagement as well as their

interest for knowledge is founded in childhood experiences in nature, especially experiences together with significant adults. David Sobel (1996) concludes that we take care of what we care about, and that we care about what we are familiar with. According to Milton (2002) the opposition between feelings and rational knowledge is a myth. Research to which she refers indicates that feelings connect people to nature, and that emotional attachment prepares the ground for acquiring knowledge through remembering and reminiscence. In Finland where 10 schools in a community have initiated garden, farm and forest work, Risku-Norja and Korpela (2009) have found that the pupils' learning is strengthened through practical work with nature. The pupils tell eagerly about memorable events during the work which can be used for learning various subjects at school. In the latest Finnish research with 161 12-13 year olds from both cities and rural areas, over 80 % of the pupils were positive to learning in a rural setting on farms. Among the teachers 85% were in agreement that farm camps had a positive effect on learning (Smeds et al. 2011). Studies done in Great Britain, Canada and USA also confirm that participation in school gardens, caretaking of animals and other hands-on activities in nature increase both engagement and understanding (Bell and Dymont 2008; Blair 2009, Malone 2008, Percy-Smith 2009).

Sustainable development is dependent on people who will and can act for change. Relationships to nature characterized by an engagement of feelings and opportunity to contribute form an important foundation for motivation for learning about and caring for nature. This type of connection calls for physical, bodily participation in activities in nature which is in accord with the view of the French phenomenologist Maurice Merleau-Ponty as well as John Dewey. Merleau-Ponty (1962) maintained that "I can" precedes Decartes' "I think". Experience from *Living School* indicates that gardening and agricultural tasks offer a relational foundation for meaningful reflections and comprehension.. In addition, such comprehension is connected to tasks embedded in a meaningful context.

Aaron Antonovsky (1987) has shown how meaningful contexts play a role in establishing pre-requisites for health. In his theory of salutogenesis, he pointed out how the sense of coherence is fundamental for being able to cope with stress factors in life. Coherence must be experienced not only at the level of intellectual understanding, but also as participation in meaningful contexts where it is possible to contribute personally and make a difference. Coping is a learning process, learning to handle the challenges in a complex world. When pupils participate in comprehensible, meaningful and manageable processes, their learning also encompasses a sense of identity, not just in relationship to those they work with, but also to a concrete place and to specific tasks. We will sketch briefly two such contexts for youth who encounter practical work on farms as a part of their learning at school.

Two examples of outdoor learning in care and cultivation of nature

After shovelling manure out of the milk stall and into a big pile for the tractor, one of the pupils, obviously impressed by the volume of the cows' production, asked the farmer/teacher, "Do the cows shit just as much as they eat?" The farmer said he should just think over this a bit. Some minutes later boy said, "I know, they produce milk", but as he continued to muse over the question he announced, "And they also give us meat!"

On a small organic milk farm in Nannestad, outside of Oslo, there is bustling activity five days a week as the local junior high school pupils come to spend 1-2 weeks of school at the farm each year over 3 years. The junior high school with over 500 pupils uses the farm as a learning arena in combination with school subjects. The pupils come to the farm each day during the week their class is scheduled and work the whole day. They help to produce most of the meat and vegetables which they use to cook a warm meal each day and also have a turn at the spinning wheel, the loom, the carpenter's bench and all other skills that are necessary for a small, ecologically self-sustaining farm and for acquiring a basic understanding of where the products of daily life come from. The farmer is a member of the teaching staff with her "classroom" at her own farm. Each class ends their farm experience by inviting their grandparents to a banquet. One week is used to prepare the menu, the program and the setting, to relate a bit of what they have learned to a generation which recognizes many of the tasks from their own childhood.

In a study, the pupils, 15-16 years of age were asked what they had learned at the farm (Jolly 2009, Jolly and Krogh 2010). Some wrote that they had learned that all food comes from animals and plants, others that they had learned about the path of food from the field to the table, while some wrote about the role of agriculture in society and the importance of sustainability. They also told about acquisition of skills, like taking care of animals, sowing and harvesting cooking food from raw ingredients, tending wood ovens, butchering meat and other activities. Almost all pupils described positive social benefits from the work at the farm: "I learned that I can talk with everyone in my class" or "I learned that I can work with anyone in the class". One wrote that working on the farm was "a revolutionary new way to learn useful facts". And one girl wrote that she hadn't really learned anything, just "to never give up". According to the comments from the pupils, the spectre of learning which the farm facilitates includes learning on a social and personal level, as well as comprehension of concrete pre-requisites for daily life.

There were only two days left on the farm, but a group of pupils, 14-15 years old, had decided they were going to finish sawing up and stacking the winter wood supply. The teacher, who had been there with classes many times before, had to tell them that although they had worked very hard, she didn't believe it was possible to finish all the logs. From that moment they hardly had time to eat before they rushed back to work. All their free time was directed towards one goal. The last day when the whole class came to inspect the wood pile, there wasn't a log left to be seen. Asked to write afterwards about what each in the class had learned, one of the boys in the wood group wrote: "I have learned an incredible amount! We have learned to work effectively, not complain, eat healthy food and be happy."

In this example, the last class at the junior high school level (14-15 years old) travelled to a farm in Sweden where they worked and lived together for two weeks. The farm, also a school for organic agriculture, had every type of production from milk to wood-fired greenhouses. The leader of the school greeted them the first day and guided them around the farm, showing especially all the tasks which needed attention. On the last day, he took them around the farm again to see everything they had done. In between they worked in groups together with the staff of the school, weeding, harvesting vegetables and fruits, repairing machines, turning compost piles, sawing logs and working in the kitchen, to name some of the tasks. The history of agriculture and contemporary global food production were topics that were taken up in a classroom session each day.

Former pupils responded to questions about their experience on the farm both in interviews and questionnaires (Jolly 2009, Krogh and Jolly 2010). Similar to the previous example, they cited many different learning outcomes. These included: “interplay in nature”, “insight into the connections between things, how a farm functions”, “learned a lot about food and ecologically-sound production”, “greater insight into how natural resources can be managed in a sensible way”, “the importance of supporting local food production”, “understanding of agriculture and its position in a larger societal perspective”, “consumption in the West in relationship to poorer countries”. In addition, almost all commented on building relationships to each other, the teachers and the co-workers on the farm: “I got a lot from meeting those who worked on the farm and learned from the way they worked”, “They got us to really work hard.” One said: “We worked on different things, things with fundamental values – no, not values, but basic needs. When you harvest potatoes one day and see that they are used in the kitchen the next day, and there is a classmate in the kitchen cooking, this creates a feeling of connection. You are part of a team. The connections are easy to understand and this is very positive for the social life of the class.”

Their comments on co-workers highlight the importance of relationships to teachers, instructors and fellow pupils for learning. This is in accordance with Bandura’s social cognitive theory (1986) that ascribes learning to observation and imitation, as well as identification with role models. The pupils not only identified themselves with the technical handwork of the workers at the farm, but also with the attitudes and values which were expressed through the work and the instruction. This aided their belief in their own capacity to master the tasks, their self-efficacy, in remarks such as, “My self-image was changed, I got more self-confidence”, and “I learned more about myself and what I can manage”. One young man, 28 years of age, said, “I have dyslexia. On the farm I got into learning in a physical way. This enabled me to contribute in another manner. I could be myself and not be afraid. This was incredibly exciting for me”.

What can we learn from these projects?

These two examples from work with teenage pupils in Norway demonstrate how the class milieu, social competence between the pupils and sense of self-efficacy were strengthened through the use of garden and farm as an arena for learning. In addition, an understanding of the work to get the food on the table was developed, not just in their own country, but in the world in general. Solidarity with poor countries was fostered. In the case on the farm in Sweden, former pupils were interviewed 10-15 years after their work at the farm. They stressed the importance of understanding the environmental challenges and acquiring a basic ecological understanding of sustainability. This affected the choices they made in their lives. Almost all told that they were aware of issues of quality and ethics in food production and made choices accordingly. A vegetable garden on a city plot, a house with a garden large enough for vegetables and flowers, even plans for taking over a family farm or buying a farm were related to what they had learned on the farm. One former pupil initiated the first organic bakeries in Norway; another runs a chain of stores for organic foods. In spite of many factors determining choices and lifestyles, the self-reported affects of the farm experiences shows that this has been a key experience for sustainable awareness and alternatives. Seeds had been sown which have had a long lasting impact.

In a study with younger pupils (6th grade) Haubenhofers et al. (2008) has investigated learning outcomes in three cases in the Netherlands: a one-day visit to a farm, a week's farm "camp" and 20 participative workdays at a farm over the course of one year. This research shows a gradual and considerable increase in learning outcomes from case 1 to 3. In addition, interviews with parents in case 3 revealed that these pupils became initiators for change at home towards a more sustainable living pattern.

The first pre-requisite for long lasting effect is the active participation in concrete, meaningful and manageable tasks. It is essential that the practical tasks are not just useful for the pupils, but also for others – other people, plants or animals. Through the relationships established in doing useful work, the pupils can expand their limitations and develop a sense of coherence which includes comprehension, as well as connection to the surroundings, to the needs of others and to the needs of society. Empathy and understanding are developed through concrete physical relationships. Abstract and intellectual comprehension is important, but activating engagement for sustainable change requires physical and empathic experience.

The second pre-requisite is that the tasks or needs literally call for participation. In this way the will of the pupils can be awakened for sustainable action. Sustainability presupposes a focused will and therefore the will must be engaged.

In contrast to the emphasis on cognitive skills in sustainable education, our experience indicates that knowledge in itself is seldom a motivation for sustainable action. However, through forming relationships and allowing for active participation, both empathy and critical faculties can be engaged in working for a better future.

Society needs young people who are flexible, energetic and have the possibility of finding new, creative and sustainable solutions to complex and changing challenges. In Living School the local environment is used as an arena for learning through the practical tasks of cultivation and care. There are several arguments that such a relational approach can open an educational path which both engages pupils and can enable them to manage demanding challenges in the future through:

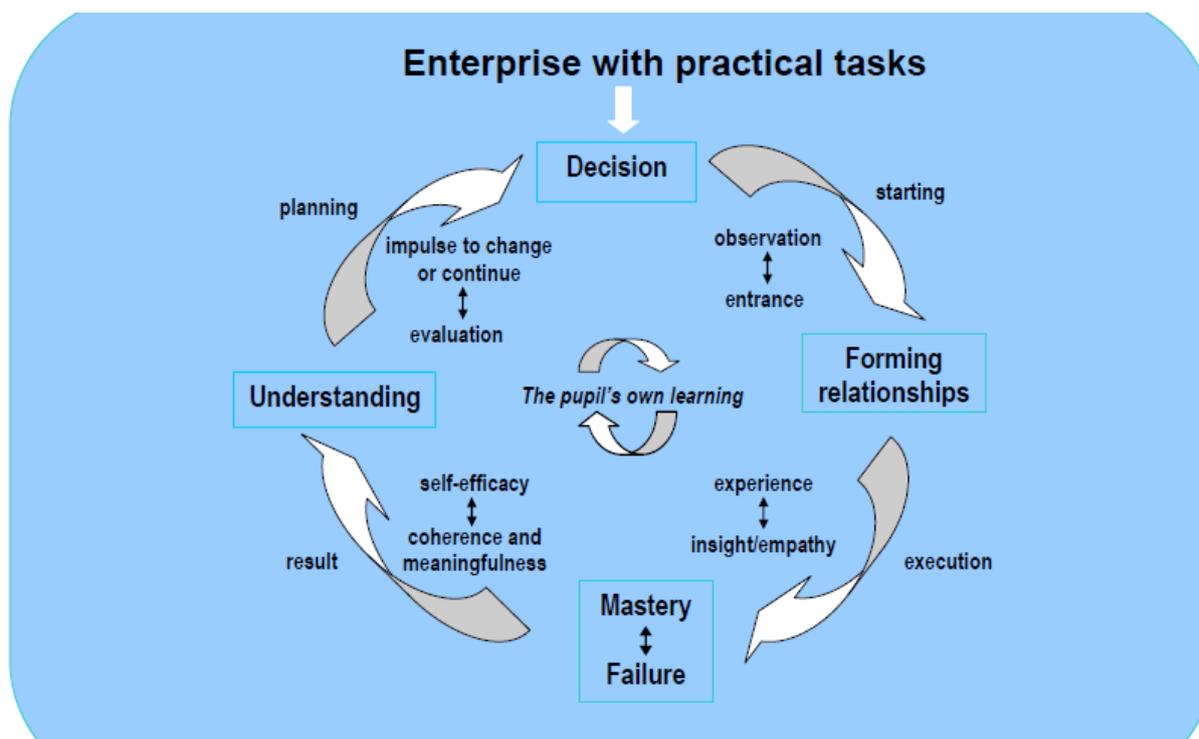
- *Motivation.* Encounters with the needs of animals and plants and experience in meeting these needs can lead to relationships where the focus is on goals beyond self-satisfaction.
- *Ability to act.* Execution of tasks demand the ability to make decisions and sustain implementation until the task is completed. The pupils can only experience and develop their ability to act in relationship to concrete tasks.
- *Co-operation.* Working together to accomplish tasks can often lead to the realization that the other has qualities and skills that enable a better solution to the task. The feeling of community which is achieved through the task also builds a common identity.
- *Mastering.* How the task is done shows its self in the result. The proof of the pudding is the eating. The experience of mastering is an incentive and encouragement to solve further tasks and find creative solutions. It contributes to self-efficacy and empowerment.

- *Knowledge building.* During the execution of tasks, interest is ignited to find knowledge that can contribute to the best possible solution. This interest for knowledge can be transferred to new tasks.
- *Sense of coherence.* Both in the garden and on the farm, the tasks illustrate the path of food from the field to the table. This path is the basis for human existence and the foundation for all contemporary societies.

In courses and advisory work with school gardens and farm-school cooperation, we have integrated the learning experiences in a new model. We believe that this model can also be used more generally in learning for sustainable development.

Relationship-based experiential learning

The model for relationship-based experiential learning integrates research from the pedagogical field, from psychology, health science, phenomenology and brain research. It is a further development of the circular model of John Dewey (1938) and David Kolb (1984). A thorough description of the theoretical background is to be found in Jolly (2009: 68-132).



Within the grey field representing the enterprise, the first step is taking on a task. Through the work, relationships will be built between the pupil and the task before the pupil experiences a degree of mastery or failure and comes to a realization of his/her capability on the basis of the result. After the task is completed, the pupil has a basis on which to decide on a new and probably modified attempt at the task. Within the circle, the inner processes of learning are described, whereas the stages of the task are indicated on the outside of the circle. According to a relational approach, the concrete, outer stages of a process will always correspond to an inner process in the person who participates in the task. The teacher's or

instructor's responsibility is to calibrate the outer demands in order to facilitate an inner learning process in the pupil.

The right side of the model places emphasis on the building of relationships and awakening the will. Reflections and thoughts will always be a part of human activity, but in this part of the learning circle, the main emphasis is on motivation for participation and development of a multitude of connections to the task and the co-workers through the work. The pupil must often overcome resistance in order to carry out the task. Different aspects of the will, such as patience, perseverance, courage, discipline and resolution are generally invoked in such tasks. In the Living School projects, the learning and the training of the will is connected to cooperation between pupils and between teachers/instructors and pupils. The will to cooperate is a fundament for social sustainability.

On the left side of the model, the emphasis is on comprehension, reflection and self-efficacy. Insight into and connection to a meaningful task creates the potential to stimulate reflection in the pupil. Bråten (2007) uses the concept of resonance to point out that the activity and the result reverberate in the learner and stirs him/her to both reflection and understanding. The result can be that the learner has acquired enough knowledge and skill that he/she is confident about doing the task. The learner can want to learn more about the task in the course of the process and even have new ideas about a better way to do it. Since the connection to the task is already established and the will is focused on the task, the processes on the left side of the model potentially lead to a feeling of empowerment and self-efficacy for the learner. This in turn is a foundation for deciding that he/she will lead the task the next time and serve as an instructor for others.

The model for relationship-based experiential learning is a model for empowerment, for development of cooperation and self-efficacy and for expanding reflections. Empowerment, self-efficacy, cooperation and a broader experience for reflections are four necessary pillars for sustainable development. Pedagogical work in gardens and in farm-school projects fosters the values of sustainable development in young learners. These arenas have inspired us to develop a model for learning. Pupils who learn in this way are often inspired to engage actively in issues of sustainability.

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