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Competence Centre of Regional Learning, University of Vechta
Postfach 1553
49364 Vechta

Phone +49 (0)4441-15 426
Fax +49 (0)4441-15 445
E-Mail: info@regionales-zentrum.de
mflath@ispa.uni-vechta.de
jschockemoehle@ispa.uni-vechta.de
Homepage: www.regional-learning.org

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About the Academic Initiative on Farms as Sites of Learning

For several years now, numerous research projects have centred on farms as sites of learning. These studies take up a multitude of perspectives which are founded in methodological, subject-specific and interdisciplinary approaches such as aspects of extra-curricular and regional learning, education towards a sustainable development, social farming and animal-assisted learning as well as school-garden educational programmes.

The Federal Consortium on the Farm as Site of Learning (Bundesarbeitsgemeinschaft Lernort Bauernhof – BAGLOB) along with the University of Vechta has now launched an academic initiative aimed at stimulating and establishing national and international exchange of thought among academics who work in the aforementioned areas and in other fields related to learning on farms. For this purpose, an online presentation was designed to provide targeted information on academic studies regarding farms as sites of learning (http://www.baglob.de/05wissenschaft.html) and a mailing list was compiled to inform all members of current dates of interest.

Moreover, conferences are organised and held which provide opportunities for direct and personal exchange and discussion.

This volume comprises all papers presented at the first conference on farms as sites of learning in Altenkirchen on 11–12 June 2010.

The academic initiative is ever open to new members and to all interested parties as well as to questions and comments concerning studies and research on farms as sites of learning.
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School-farm Cooperation in Norway: Background and recent Research

Linda Jolly\textsuperscript{a}, Erling Krogh\textsuperscript{b}

\textsuperscript{a}Norwegian University of Life Sciences, linda.jolly@umb.no
\textsuperscript{b}Norwegian University of Life Sciences, erling.krogh@umb.no

Abstract: In this paper three cases of cooperation between agriculture/horticulture and schools are described, evaluated and discussed. The first case, The Agriculture Game, is carried out by farmers who come to the school for one day in the 10\textsuperscript{th} class. In the second case the pupils are integrated in the work of a farm in the vicinity for one week each year (8\textsuperscript{th} to 10\textsuperscript{th} class). In the third and last case the pupils of the 10\textsuperscript{th} class live and work on a farm for 2 weeks. The research question is: How can the different offers in learning about food production give pupils insight in fundamental life processes as well as an understanding of their own potential as participants in these processes?

The theoretical basis for experiential learning is presented and developed further to accommodate the learning at the farm. Research in phenomenology and neurology are exploited to deepen the understanding of experience as immediate knowledge. Mastery is a key experience for experiential learning where the pre-reflective affects of experience influence both the process of doing a task and the one who does it. Research on the prerequisites for good health shed light on the pre-conditions for mastery which can lead to knowledge.

The empirical basis is carried out with help of qualitative methods. Pupils/former pupils are asked to describe their learning and experience with each of the three learning situations.

After presentation of the three cases, the findings in case 3 are discussed in relationship to our model for relationship-based experiential learning. Education for sustainability is shown to be a result of experiential learning when the work of the pupils is organized to allow for the forming of relationships and for the realization of meaningful goals which have relevance for the pupil and lead to an experience of resonance. This results in a foundation for reflection and re-creation of further relevant actions.

Keywords: farm-school cooperation, education for sustainability, mastery through practical farm work, relationship-based experiential learning

Introduction

This paper is written on the background of extensive work in Norway with agriculture/horticulture as an arena for learning. One of the authors began with school-farm cooperation as a teacher in a Norwegian Waldorf school from the beginning of the 1980’s. Parallel to this development, the farmers association (Norges Bondelag) in Norway launched an outreach program to bridge the growing gap between children and knowledge of food production. Their program, "The Green School", which distributes free materials to schools at all age levels, was evaluated by the authors of this paper in 2007 (Jolly and Krogh 2007). In addition to these fields of experience, a national project for state schools, "Living School" (1995-2000) was initiated at the Agricultural University of Norway (AUN, now the Norwegian University of Life Sciences, UMB). Pilot schools integrated outdoor cultivation of grounds and gardens in their curriculum as well as farm-school cooperation. On the basis of experience from "Living School", the authors have led accredited courses for teachers and farmers throughout the country: “The Farm as a pedagogical Resource” and "Ecological Gardens and healthy Schools" (Jolly and Krogh et.al. 2004). The work in Norway has inspired initiatives in Finland, “School goes to the Farm” (Risku-Norja and Yli-Viikari 2008) and in the Netherlands (www.boerderijschool.org) as well as an EU project between Finland and Estonia.

Although research on the courses and the farm-school co-operation has been done (Nergård og Verstad 2004), it was first in 2009 that a larger investigation of learning as a result of
participation in a project was carried out (Jolly 2009). Since the Norwegian farm-school co-
operation has inspired similar projects in other European countries, one of the main purposes
in this paper will be to present findings concerning what type of learning can be made
possible through use of the farm as an arena for learning. We will lay special emphasis on
the development of competence which is vital for sustainable development. In addition we
want to contribute to learning theory. On the basis of the empirical investigations of pupils’
learning and the consideration of theoretical models for learning, a new and generally
applicable model for relation-based experiential learning has been developed. This theory
will be presented in this paper.

In this article we will first present the theory of relationship-based experiential learning
developed further from the models of John Dewey (1916, 1938) and David Kolb (1984) and
supplemented with perspectives from phenomenology, the theory of salutogenesis and
neurological research. Thereafter we will describe the projects which are the basis for the
investigation, as well as the methods which were used. The results of the empirical studies
and a discussion of the findings in relationship to the model for relationship-based
experiential leaning and learning for comprehension will form the conclusion of this paper.

**Relationship-based experiential learning**

John Dewey outlined a model for experience-based learning early in the 1900’s. The model
was based on a spiraling cycle where an impulse for action gave opportunity for observation
and led to new knowledge which became the basis for judgment (Kolb 1984). This spiral
makes learning visible as progression of a continually more refined course of action. The
model was a result of Dewey’s own personal experience as a teacher and founder of a
school for children.

First hand reports from teachers in Dewey’s school tell about excursions, the school garden,
cooking their own food, sewing clothes and making equipment which was needed at school.
Dewey protested against the opinion that theoretical subjects had a worth of their own,
whereas practical subjects were only utilitarian. With this point of view, he maintained, the
value of practical professions for the (self-) understanding of human development would be
overseen. Today we might designate such activities as critical for building a cultural identity.

![Figure 1. Experiential learning as a cyclical process (Dewey cited in Kolb, 1984).](image)

Such a learning process would, according to Dewey, give rise to a new impulse for an
improved action on the basis of a new and improved experiential foundation. Whereas
Dewey emphasized the roll of experience in learning both in his own school and in theory,
David Kolb (1984) emphasized the forming of concepts with basis in experience which is
reflected upon, conceptualized and tested in a new situation.

Kolb presented a model for learning as a cyclical process which bridges dialectical opposites.
In Kolb’s model, all learning begins with concrete experience. Observation from experience is
reflected and formed in abstract, generalized concepts. This is the basis for new concrete
experiences or actions which have their point of departure in a new and improved
understanding. In this way concrete experience is connected to abstract concepts as
reflection is connected to action/experimentation in a cyclical phase (Figure 2). Opposite elements become integrated.

![Figure 3. Kolb's model for experiential learning (Kolb 1984).](image)

Kolb’s model is primarily concerned with cognitive learning. Illeris (1999) questions how clearly the definition of experiential learning is made in Kolb’s model as opposed to other types of learning. Dewey said himself that the learning of abstract concepts in the classroom was also a type of experience, but not in accordance with the needs of the children. He pointed out the need for research concerning the nature of experience as a basis for understanding learning. Kolb’s own experience is in the field of organization psychology, not from the classroom and work with children. In our opinion Kolb’s model is best suited for this research field in relationship to adults whose work is characterized by goal-oriented tasks. His model, focused primarily on cognitive learning, leads to a reduction in the breadth and character of experiential learning.

When we turn our attention to children and pupils, it is necessary to understand and apply the whole spectrum of experience and its nuances in the creation of learning situations. Children learn, in many ways, such as through emotional engagement, through imitation and physical activity.

Phenomenology underlines the role of the physical body as a vehicle for sense experience in a world of deeds (actions) (Merleau-Ponty 1962). The physical body and senses are often under-stimulated in the classroom. Neurological research shows the importance of experience in formation of the nervous system, for example, in how the skills of the hands modify the structure of the brain (Wilson 1998). The discovery of the mirror neurons and the resonance reactions of the body document learning which occurs before reflection and conceptualization (Lacoboni 2008, Bauer 2005, Rittelmeyer 2002). This provides a physiological basis for the phenomenologist’s appeal to re-instate the body and sense perception as our primary gates to the world. Experience occurs through the body as the acting subject (Krogh et.al. 2008). This means that the participation in concrete events is a fundamental prerequisite for experience.

Mastery shows itself to be a fulcrum in the development of learning from experience. With mastery there are two processes occurring simultaneously: the first is that the person who achieves some degree of mastery recognizes this; the other is that mastery shows itself as a result of solving the task. To enable mastery to occur, there must be tasks at hand which can be solved through practical experience. Mastery can be understood as the immediate realization which occurs when a person experiences the solving of a task in a new or better way. When prepared in the proper manner according to the needs of the pupil, mastery can have considerable effects on learning.

The focus on mastery can help us understand the conditions for maximizing learning from experience. Aaron Antonovsky’s theory of salutogenesis (Antonovsky 1987) illuminates the connections between health and fundamental conditions for learning and mastery: comprehensibility, manageability and meaningfulness. When pupils participate in meaningful, manageable and comprehensible processes, their sense of identity can be strengthened further through a concrete relationship to place, to specific tasks and to people they work...
together with. What is learned is thus a result of both reflected and pre-reflected processing of experience.

With the theory of experiential learning, especially as we have seen in David Kolb’s model, most attention has until now been paid to conceptualization and conscious reflection. Our experience has led us to attempt to make a model of experiential learning which includes the immediate effects of experience and how emotions and motivation are activated.

First, the pupil enters into the task which is embedded in the whole enterprise (in our case a farm or production garden), thereby creating relationships underway towards solving and mastering tasks. The result is new knowledge and understanding, which is the basis for new goals and actions. Within the circle, the inner human processes are designated, while the outer task-related stages are designated on the outside of the circle. According to our relational approach, the concrete outer stages of the process will always correspond to inner processes within the person who is participating in solving the task.

![Figure 3. Model for relationship-based experiential learning.](image)

The foundation for relationship-based experiential learning is that the pupil forms relationships connected to the task. To begin with the pupil (learner) stands outside, but is invited in through an introduction to the task which is embedded in the necessary work and production of the farm. Depending on the character of the task and on the calibration or organization of the task to meet the premises of the pupil, he/she will form different types of relationships. The social relationships can include other pupils, teachers and instructors, such as the farmer. Relationships to tools and equipment, and especially to development of physical skills in wielding the tools will occur. In addition there will also be relationships to the phenomena (in nature) at hand - rather be it soil, plants, animals, stone, water or weather.

Together the relationships form the context for the task which is being done. The larger context of the enterprise (the farm and production) is also placed within a still larger societal context which implies meeting an objective need in society, being part of a connection to social interaction and having a place in the overall organization of society, such as through the simple mode of production (Krogh 1999). The learner meets the phenomena with his whole sense-perception, his body and his earlier embodied experiences, and further develops his experience through doing the task. The more the pupil is motivated emotionally, physically and mentally by doing the task and the richer the opportunity for experience, the larger the depth of insight is which can be achieved. But the learner can also choose to distance himself or reject the relationships which the task offers. This will lead to diminished relationships Execution of the task can lead to a degree of mastery, but also to failure.
Between these outer poles there is a continuum of possible outcomes. Mastery and completion of the task can be made possible through competent organization and adaptation to the pupil’s proximal development zone (Vygotsky 2001) such that he/she can overcome the resistance which the solving of the task implies.

If mastery and the sought result are achieved, possibilities for both knowledge and self-insight are opened. The learner will experience a greater connection to the task the more comprehensible, manageable and meaningful the task has been. We have also stressed the importance of an anchoring to place, active participation and the presence of role models ("significant others") to achieve an experience of meaningfulness and belonging. Identity and self-insight will be influenced by the experience of connectedness made possible through the task. It must be emphasized that the social relations are extremely important during the whole process.

Comprehension is dependent on the depth and breadth of the relationships which can be developed from the start to the finished task. The broader the foundation for experience, the better the basis for comprehension will be. Comprehension can be said to be a function of the three R's: Relationships, Realization and Relevance. Comprehension is strengthened through broader relationships, clearer realizations expressed in mastery and results and a strong experience of relevance. The occasions for experiencing mastery will thus affect the basis for comprehension, but the most important basis for comprehension is the quality of meaning and connectedness which the task opens for. The more these qualities are experienced, the broader the basis for comprehension and the more interesting it can be to reflect and learn more about the connections, i.e. increase the motivation for learning.

The less and the narrower the experience of meaningfulness and connectedness, the more meagre will be the basis for comprehension and motivation for learning. Failure in solving the task can also lead to a negative self-image. This requires reflection to work through the failure and analyze the reasons for failure and the conditions needed to succeed next time.

Comprehension forms both the foundation for setting new goals and for concrete planning of further tasks. In this connection reflection will be important both to recall and to be able to improve the procedures in doing the task, and also in communicating the procedure to others such as through instruction or a handbook. In this connection the formulation and use of concepts will be important. Reflection is also important for development of deeper understanding and relevant learning in the subject matter. Teachers can help the pupils use their reflections to implement curriculum goals. All school subjects and exercises can gain from the experience from the tasks at the farm which are vividly recollected by the pupils.

However, it is also important that teachers do not focus solely on conceptual reflection, but also utilize the possibilities for comprehension which lie in practical and artistic activities. In this way the immediate, pre-reflective experiences can be taken into account and deepened. We have attempted to show that the significance of the experiences which the pupils can have at the farm has a potential for their sense of self and for their general understanding that cannot be limited to conceptualized knowledge measured through school subjects.

According to our argumentation comprehensive learning can be understood as a function of 5 R’s. In addition to Relationships, Realization and Relevance, Reflection and Resonance are a part of the process. Conscious reflection is in most situations necessary to consolidate and structure knowledge for the learner. But it is also important to recognize the potential for resonance in the pupil. Bråten (2007) uses the term inter-subjective resonance to describe the capacity for immediate and creative interaction with the environment through the mirror neurons. Both the entirety of an experience and the instantaneous pre-reflective comprehension can be enhanced in the learner through tools which supplement cognitive reflection, such as practical and artistic activities. The spontaneous resonance in the pupil will according to Bråten (2007) also be potentially activating for mental representation and expression through language.

Therefore we can also add a sixth R in the functional process of experiential learning on the farm - **Re-creation**. From the experience of comprehensive learning, the learner will in different degrees develop skill, drive and will to act, to re-create anew. The act can exist in
the span between repetition and new creation, dependent on the type and quality of the task and the way in which the other R's vary in the process of comprehensive learning.

Figure 4. Learning through comprehension.

The model for learning through comprehension can pictorially be compared to a ballgame in a hexagon, where a hit in one corner shoots the ball further to another corner. If relationships are formed in connection with a task which is then realized with a relevant connection, the ball goes from corner to corner. The ball gets a force which propels it toward resonance in the learner. Resonance can again trigger reflection and conceptualization. This motivates the pupil to do and re-create in the spirit of the learning process. However, it is not necessary that the R factors are activated in this order, but can be imagined as cross-related. Formation of a relationship can cause an experience of resonance in the learner or immediate reflection. Therefore lines are drawn between all of the factors. The point is that the ball, in form of a preparation of the task suited to the premises of the learner, motivates the learning process. The better the pupil's premises are known and taken into consideration and the more of the R-factors which can be included, the greater the probability will be that the execution of the task will create a self-motivated learning in the pupil.

The cases in this study

Recognition of the fact that children and youth today have little or no contact with agriculture and the practical tasks which bring the food to the table each day has led to different attempts to make learning about and with food production available for schools in Norway. Since the focus in school is mostly on cognitive, representational models and there is little contact with the actual life processes, projects where garden and/or farms are used as learning areas have grown rapidly in the last years. Over 200 school-farm cooperation projects have been established throughout Norway in the last 15 years. In this paper we will describe and compare 3 projects which attempt to bridge the gap between experience and knowledge in food production and school-age pupils. Although the farm-school cooperation in Norway occurs throughout general education from the kindergarten to the 10th grade, this study takes up three cases primarily for pupils in the 10th grade, ages 14-15 years.

The first case is an evaluation of an initiative of the Norwegian Farmers Association (Bondelaget). In their program, The Green School, the local units offer the schools both literature on agriculture and the opportunity of inviting farmers to the school in the 10th grade
in what is called "The Agriculture Game". Farmers come to the school with the necessary materials and take over instruction from the teachers on this day. The game consists of a progression of written tasks which lead to the result of an annual account for 3 types of farms. By holding the books for income and expenses, the intention is that the pupils achieve a better theoretical understanding of the conditions for food production.

The second case started as a pilot project in national program "Living School". From the question posed by teachers and students at the Agriculture University of Norway, “How can we contribute to fostering hope, courage and resolve in children so that they may participate in a productive way in shaping their surroundings?”, examples of gardening and co-operation between schools and farms were developed (Parow 2000, Hugo 2000, Jolly and Leisner 2000). In the school-farm cooperation in this case the pupils have a week of their school hours each year (8th to 10th grades) at a nearby farm doing the everyday tasks of farm work and food preparation. The farmer is also a teacher at the school and incorporates themes from different subject areas into the work at the farm. These themes have to do with the factors of soil formation, recycling through compost, plant growth, animal welfare, transport and distribution of food in global perspective, in short the topics that are vital for understanding the role of food production in today’s society, but also for a sustainable future.

The third case is taken from the work of one of the authors during her years as teacher at a Waldorf school. These schools have a tradition for school gardens and farm experience for the pupils going back to the first school in Stuttgart in 1919, although these arenas were first developed in the Norwegian Waldorf Schools thirty years ago by the author. In the 10th grade the classes have travelled to a farm in Sweden where they work and live for two weeks. Before hand they have begun working with themes concerning agriculture which will be further developed and presented as oral reports during their stay at the farm. Although in this case, as in case 2, the emphasis is laid on practical first-hand experience in horticultural and agricultural tasks, there are also daily sessions for working towards an understanding of the premises for food production and sustainable alternatives.

Methods

We have chosen to focus mainly on qualitative research methods in this study. Phenomenology informs both the theoretical and the methodical approach in our research (Denzin & Lincoln 1994, Jackson 1989, Østergaard 1998 and 2006). Description of the cases and their context will therefore be important in able to draw a picture of the frame of each case as a basis for understanding. Case study is one of several research strategies (Yin 1989) for qualitative studies. Within the framework for case study, the methods of field work (Wadel 1991, Krogh 1996), semi-open questionnaire and the qualitative research interview (Kvale 1997, Fog 1994) are the basis for the empirical data.

The start for this comparative study was done already in 2006/2007 through the work with an evaluation commissioned by the Norwegian Farmers Association (Bondelaget) (Jolly and Krogh 2007). As one part of this evaluation, the authors participated in execution of The Agriculture Game in 4 schools and 18 classes. A questionnaire was made for the pupils to answer in the first days following the school day where the game had been played. The farmers and the teachers who participated were also given questionnaires. All questionnaires were composed such that there were both questions for quick ratings done by checking off answers and questions for open comments with room for written statements. A log of experience during participative observation, as well as a telephone survey in the local units of the Farmers Association, was a part of the empirical basis in this study which is here designated as case 1.

In case 2, the authors have also participated in workdays at the farm with classes from the school. On the basis of familiarity with the project over several years, as well as interviews with the school leaders and the farmer (Jolly 2007), a questionnaire was prepared which followed the structure of the questionnaire in case 1, but was adapted to relevant questions for the 10th graders immediately after they had participated in their last period at the farm.
The questionnaires from the pupils in all the 10th grade classes (classes A to F), together with the background from interviews forms the empirical basis for case 2.

In case 3 where one of the authors was the teacher and prime initiator of work that had occurred over a period of 28 years, the methods described in the first two case studies was not sufficient. While only one class participated each year, there are many older pupils and former pupils who can give wider perspectives. A questionnaire with the same structure as for the other cases was used, to be distributed over the spectrum of pupils who had participated from the previous year to nearly 30 years ago. In all 83 questionnaires from pupils/former pupils that experienced a similar farm-school learning period from 1980 to 2007 were collected (12 %). In addition 10 interviews were carried out with former pupils between the ages of 19 and 35, as well as with one parent.

Framework for and findings in the three cases

In able to give the reader a clearer picture of the conditions for learning about and working with agriculture in each case, it is necessary to begin each case with a description of the setting and the tasks in which the pupils participate. Following a description of the framework and organization in the three cases, a summary of the results will be given. The concluding discussion compares the results in all three cases on the background of the theory for experiential learning presented in the first part of this paper.

Description: Case 1

In contrast to the other two cases, the “Agriculture Game” takes place in the classroom where the 10th grade is divided into groups of 4-5 pupils for the course of the day. A team of 2-3 farmers introduced the theme of agriculture by telling what they themselves produce and what is being produced in the area where the pupils live. After this general introduction, each group of pupils chose one of three types of farms which they “run” by holding the books and making choices as to purchase of machines, sale of products and similar activities. Each group received a booklet with texts which provided the information for solving the written tasks which are written up specific to the choice of production which the group has made. For example, the pupils calculate the amount of feed which must be purchased and find the prices in a price list. Later in the course of the second and third quarter of the year the pupils are also asked to pull cards which describe advantageous or disadvantageous circumstances which are also written into the accounts. The concept of the game is that the group which makes the best decisions should get the best financial result and win the game. During the day the farmers go from group to group answering questions and assisting.

Findings: Case 1

The observation of the game in different school classes revealed a largely positive attitude towards the event on the part of the pupils at the onset of the game. The teachers were most often absent from the classroom after the introduction, but the dialogue with the farmers functioned well. Some pupils used the opportunity to stretch the rules for school conduct, but generally the presence of the farmers was met with polite response from the pupils. However, the amount of written material to be read and answered took its toll as the day progressed. Few groups came through all the tasks to achieve a result and still fewer had opportunity to discuss the last and most relevant questions. There was a clear “winner” in just one class during the study. Therefore a summary and discussion at the end was inadequate to relate the results to societal and political perspectives.

The questionnaire showed that the pupils valued the game as a break from the usual content of a school day and as an opportunity to do group work. However the question as to if the game had increased their interest for agriculture was predominantly answered negatively. Some felt they understood more of what it means to run a farm, whereas others objected to the impression that holding accounts gives a correct impression of the work in agriculture. When asked to describe what they had learned through the game, most pupils wrote that they learned math and accounting, but that this was what they already had at school. Most
were positive to visiting a farm as a basis for getting more out of the game, for as one girl wrote, they could at least see the machines they were asked to buy. Although the teachers and farmers were largely positive to the game, they also expressed doubt as to increased interest in agriculture created by the playing The Agriculture Game.

Case 2: Description

In case 2 the pupils are integrated in the tasks at a farm for one school week each year in the 8th to 10th classes. The farm is within walking distance from the school. Each class walks to the farm and starts their school day there. The farm is not large even by Norwegian standards (14 hectares of plowed land) and has a herd of around 15-20 milk cows in organic production. In addition there is a large vegetable garden, chickens, geese and pigs for use at the farm. Many of the buildings are of historic value as one of the few original examples of farms from the middle of the 1700s. One of the buildings has been restored to accommodate the pupils with two adjoining rooms for eating and working with log books, simple cooking facilities and a cellar for storage, showers and wardrobe. The stall and milking facilities were built in connection with the start of the pedagogical project in 1999.

The intention with this project has been in part to give the pupils access to an experience of farm life such as it was earlier. All heating is done with wood which the pupils have taken from the woods cut with manual tools. The cooking is for a great part done on the hearth and wood burning oven. The toilet is a pit privy and the garden is cultivated with hand tools. The idea is that the pupils produce and cook their own food, wash the dishes by hand and clean the rooms each day, and in general are exposed for the most basic way to meet the daily needs through the work at the farm. Experiencing the consequences of their own work such as we have shown in the model for experiential learning is the basis for the work at the farm. When the pupils arrive each day, they take their place around the tables and have, in addition to a cup of tea or hot chocolate, also a program and a theme for the day. Perhaps it is plants, seeds or soil which they observe and get to know before the tasks are presented. On the program there is a short description of the work which each group of three pupils will do before the main meal and another task for each group after the meal. Many of the tasks are routines such as cooking, wood cutting, washing up, but many are connected to the seasonal work at the farm. The 8th grade begins in the spring with sowing and planting in the garden as a main task. They come again after summer holidays to harvest what they have sown, run a vegetable stand, conserve products for winter and partake in slaughtering. The 10th grade has one week in the winter where they prepare and design a banquet for their grandparents. The serving of a meal to their grandparents where they tell about what they have learned during their work at the farm is the last part of their instruction at the farm.

Case 2: The Findings

The pupils in this project were given the questionnaire after they had finished their last week at the farm in the 10th grade. Many of the concrete descriptions of what they had learned came from the previous week at the farm. None the less, the pupils had much to write about when answering the question about what they had learned during their time at the farm.

They described knowledge they had acquired on farming and gardening: insight into the process from the field to the table, the roll of agriculture in society and understanding for sustainability. They also told about acquisition of skills, like taking care of animals, gardening, sowing and harvesting, cooking food from raw ingredients, tending wood ovens, carving up meat, cleaning, serving, holding a banquet, spinning and weaving. The pupils also mentioned experiences such as seeing that milk comes from farms, that all food comes from animals and plants and that practical work must be done to produce food. Attitudes towards farming and a sense of appreciation for the farm work was a part of their comments. Almost all pupils described positive social benefits from the work at the farm. It strengthened the feeling of solidarity, of better contact with their fellow pupils, as well as a positive attitude in the class. The personal benefits of the work at the farm were also important for many pupils. They wrote about mastering tasks, coping with the weather, improved teamwork, learning to take responsibility, getting better to do work and “never to give up”.

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The many answers as to what they had learned and if they would recommend such experiences for other youth show the influence the school weeks on the farm have had for them, both as individuals and as a class. Their comments also illustrate how their perspectives have been widened, both concerning agriculture and future sustainability in society. We will come back to the issue of sustainability in the last discussion.

Case 3: Description

Case 3 differs from case 1 and 2 in that the pupils travel to a farm and live and work there together over the course of two weeks. Being on a journey heightens the experiences at the farm. They come to a farm with an abundance of different productions. There are cows to milk, sheep, chickens, ducks, geese, bees and work horses to look after. There are fruit trees and berry bushes to be harvested. An herb garden produces large amounts of herbs and teas. On the fields there are all types of grain and vegetables. A little store sells the products and other items like fresh flowers from the nearby flower beds. There are also orders to be filled. The pupils also work with cooking and conserving. In addition there is one hour set aside each day for working with and learning about the history and principles of agriculture, as well as an hour in the evening for writing log books and reflecting together over the events each day.

With this short introduction to the framework for learning, we will now use the model for relationship-based experiential learning to further describe the process and highlight how this process is experienced by the pupils by weaving in their responses to the questions posed both in the written questionnaire as well as in the interviews.

Case 3 - The invitation to participation

In case 3 the invitation to participation in the enterprise which the farm represents is made already before the journey to the farm begins. In the 9th grade the pupils began to work with questions concerning modern agriculture. During a week before summer holidays the pupils chose a theme and worked together in groups with topics such as hunger and food distribution, erosion, use of energy in different systems of production, leakage of nutrients from farming to water systems, irrigation and water resources, genetic engineering and animal welfare. They continued working with their themes at the farm and made an oral presentation for the class at the end of the two weeks at the farm. In this way, the pupils are already prepared for their work with farming and take along questions as a part of their baggage.

When the pupils come to the farm they are welcomed and shown around all the arenas where the tasks are waiting for them. They can see that the farm needs their help and has prepared for their contribution. The invitation to participation is also repeated each day when the tasks are presented for the pupils. As far as possible they are allowed to choose which tasks they take on, but it is also clear that the intention is for them to become acquainted with many different types of work at the farm during these two weeks. Some need more time than others to dare to do certain jobs for example with the animals. The teachers must sometimes ask, encourage, coax and even order them to try as a part of the “invitation” to participation.

Building relationships

When they have begun with a task at the farm, the pupils begin to build relationships. The place is new for them as they are for those they meet. It is a challenge to begin with so much that is new and uncertain, but for many it is a chance to start afresh, unburdened by the reputation they have had at school. One former pupil said:

"I remember this as a very positive break from our lives in Bergen since we travelled to another country and another climate. I think this was what gave us a new start. Already then the foundation was laid for something very positive.”(24 years of age)

At the farm they worked together with their fellow pupils in different constellations. There are also older pupils, or former pupils, who work as group leaders at the farm, in addition to teachers. Working together with others is a strong motivation. Shoulder-to-shoulder pedagogy is what we have called this form of building relationships through doing practical tasks together. The workers who are engaged in the farm motivate the pupils through their
connection to the tasks and their insight into how the tasks are a part of the whole farm. One pupil wrote: "I got a lot from meeting those who worked on the farm and learning from the way they worked." The youth who work as assistants during the period on the farm and who have been there as pupils themselves are inspiring both as role models and companions: "They got us to really work hard". Also the relationship to the teachers changes when pupils and teachers are working side by side.

In addition, the pupils built relationships to the animals, the plants, the soil, the tools and, not least, to the weather. Both the importance of the social relationships as well as the significance of relationships to the phenomena which they met at the farm are mentioned often on the questionnaire and in the interviews. Several pupils stated that the class milieu was greatly improved, that they experienced good team work and were welded together, that they learned to respect each other's strengths and weaknesses and take responsibility for each other. One former pupil (22 years of age) wrote:

"When we worked on the farm we were all teenagers. Everybody wanted to be cool and no one wanted to get their hands dirty. After one day at the farm we were all digging in the compost pile, clipping the hedge or taking up potatoes. And there was NO ONE who complained! In relation to mastering and self-confidence the tasks were something that all could manage. And all worked together. The "cool" ones became best friends with the "dumb" ones. The ones who were struggling at school had a chance to show themselves. This was a lift for many."

There were also many comments to their relationship to nature, to familiarity with animals and to working with the soil. Several pupils mentioned that they had a different relationship to what they ate and to making food from raw ingredients.

**Experience and insight (empathy) developed underway with the task**

In case 3 there were many who responded to the question of what they had learned by telling of experiences and insights they had had underway during the work with the tasks at the farm. They wrote about life in the compost pile, the wasp nests in the hedge and the temperamental geese that chased them. They wrote also about how hard it was to not give up, to fight on until they had achieved a result. The tasks at the farm are often repetitive and offer a great deal of physical resistance. The first week is especially demanding on their physical and psychological stamina. One of the group leaders invented the competition he called "100 meter hedge" where the pupils were divided into two groups that clipped from each end of the hedge, racing to see who could get to the middle first. In such situations the pupils experience not only flow (Csikszentmihalyi 1998) and that the resistance is conquered, but that they can also achieve impressive results when they work together.

Insights and empathy are also developed during the work with the tasks. Some pupils described their appreciation for the work that must be done to produce the food we take for granted, that the farmers work hard to provide us with products:

"The experience on the farm awakened in me a good deal of curiosity and astonishment over the relationship between man and nature and opened my eyes for a part of the world which city kids know little about."

These experiences are also strongly related to how the pupils felt that they had mastered the tasks. This is the next station in our model for relationship-based experiential learning.

**Between mastery and failure**

When working with the tasks at the farm the pupils experienced varying degrees of mastery and failure. With a good organization of the work and an individual consideration of each pupil it is usually possible to create a situation where most will feel that they have reached a positive result. They referred to many small and large victories which strengthened their feeling of mastery. One wrote of driving a tractor, another about learning to milk and taking care of the animals, another on holding a short lecture for his fellow pupils. Some pupils found affirmation in the most exhausting tasks such as digging draining ditches in hard packed clay. One girl (22) wrote:

"I learned that the work on a farm can call for a lot of perseverance and physical endurance - generally both at the same time. But you can also develop techniques. I thought that I would
find the work more and more boring, but it was actually more fun. It was especially good to learn to cast concrete. This is usually real man work, but I felt I did it as well as any of the boys.”

It seems for many that the more resistance they met, the more valuable the experience was for them. There were many that told of learning to work effectively and to take responsibility. Generally the respondents gave the impression that they had mastered challenges.

This feeling of mastery was also very important in relationship to the social challenges. When they are dependent on each other for achieving a result, there are often conflicts which must be resolved. “We learned to tackle different social situations and take responsibility for each other” was one such comment (22 years of age). One former pupil said:

“We worked on different things - it was a trip where we worked together on things with fundamental values - no, not values, but basic needs. When you take up potatoes one day and see that they are used in the kitchen the next day, and there is someone in the kitchen cooking the food, this creates a feeling of connection. You are a part of a team. The connections are easy to understand and this is very positive for the social life of the class. We have had other trips, but it is something different when we worked together for our basic needs. This created another type of unity and connection to each other”.

The experience of accomplishing something useful together resulted in a feeling of mastery, but also of connection and coherence. This leads to the next stage of our model.

**Results and the experience of meaningfulness and coherence**

The experience of mastery with tangible results from the activity at the farm became increasingly meaningful in the course of the two weeks at the farm as the feeling for connection to the place and the people grew. The pupils saw more and more of the interconnection of the tasks and gradually achieved a better understand of the life processes which govern the work. At times the pupils have voluntarily worked overtime and taken initiative to do further tasks, for instance, when they see that rainy weather is on way and there are still onions to be harvested or that there is still more wood waiting to be transported from the forest to the wood pile to provide heating for the greenhouses. They see directly what their contribution means. Some comments from the questionnaires and interviews were:

“We got a lot of work done for the farm. It was very useful work.” (15 years of age)

“There is a lot of work to do on a farm. One has to make an effort. Things just have to be done. You understand that things have to be done. That is not obvious at school. At the farm you dig until you are finished.” (23 years of age)

“Doing useful things, doing something for others was important. One felt that what we were doing was important for the farm. A good feeling.” (27 years of age)

This feeling of coherence and meaning strengthened the self-understanding and self-image of the pupils. They commented on their acquisition of self-confidence through mastering the tasks and how their self-image changed. Many said they knew themselves better and that they had come to realize that they could tackle most situations. Two pupils mentioned their difficulties with dyslexia and how the experience at the farm strengthened their self-confidence:

“This trip had a great affect on my self-image. I had more self-confidence. Especially the lecture which I held for the class gave me new belief in my abilities to cope at school.” (19 years old)

“I have dyslexia. At the farm I could come into things in a physical way. I could contribute in another manner. I could show myself without being afraid. It was incredibly exciting for me.” (27 years old)

From the pupils’ comments, there is ample evidence of personal growth and an experience of meaningful tasks in the work at the farm. We now turn our attention to what the pupils reported concerning formal learning, with focus on sustainability in food production and the effects their attitudes and choices.

**Knowledge and comprehension**
Both on the questionnaires and in the interviews the pupils/former pupils referred to topics which they gained insight into during the time at the farm: "insight into the connections, how a farm functions", "understanding of consumption in the West in relationship to poorer countries", "learned a lot about food and ecological production", "greater insight into how natural resources can be managed in a reasonable way", "the importance of supporting local food production", "understanding of agriculture politics and agriculture's position in a larger societal perspective", "interplay in nature".

Many concrete examples of retained learning were also mentioned in the interviews. When asked what they remembered, one former pupil answered: "the importance of crop rotation and the cultivated landscape". Another said spontaneously: "I learned about the prices for food. Most people complain about the prices. I remember this. Food is not expensive. It is too cheap to be produced in an ethical manner." Topics such as nutrient leakage from agriculture and the affect on the Baltic sea, genetic engineering, use of energy were remembered and of further interest: "I follow much more in the news " and "I have understood the importance of food and knowledge and attitudes to food." One pupil formulated his learning in the following:

"This is of course also a political choice. We have had school debates, but they are just confusing. Politics is one thing, but a fundamental view, a view of the whole should lay at the basis in politics also. I think we got a good understanding of this at the farm."

And:

"We heard lectures and about different problems with food production in the world. For me this has made a definite impression and is something that I have taken with me further and that I think about when I buy food. I wasn't one that was the most interested at school because I always wondered why we were learning these things and what use we had for them later. But at the farm I had a feeling that what we were learning had a real meaning." (22 years of age)

When asked to rate the importance of such learning for other youth, the pupils/former pupils who were interviewed gave this high importance. As a reason for their opinion, most of the interviewees commented on the importance of understanding the environmental situation and a having a basic ecological understanding of sustainability. This affected the choices they made in their lives. Almost all told that they were aware of the differences in food quality and made choices accordingly. One former pupil told that she has her own vegetable garden in the city, another that he and his wife (both former pupils) are looking for a house with a garden large enough for vegetables and flowers. Even plans for taking over a family farm or purchasing a farm were related to learning experiences with agriculture during this two week period. One former pupil initiated the first organic bakeries in Norway, another is running a chain of stores for organic foods. Inspite of many factors determining choices and lifestyles, the self-reported affects of the farm experiences shows that this has been a key experiences and the source of knowledge and understanding for those who answered the questionnaire and were interviewed.

**Conclusion: Case 3**

In the interviews and on the questionnaires the pupils/former pupils maintained that they have greater insight into the connections between food production and environmental issues, food quality and prices. They experienced pleasure and gratification in doing practical work. They told of knowledge and interest in agriculture and many things like cooking and sustainable management of resources. Ethical issues became a part of their daily lives and affected their choice of products. Mastery and development of new capacities were important aspects both personally and in relation to appreciating others. The social relations through cooperation in the practical work led to a better social climate, motivation in tasks and even a good relationship to the teachers. Many told about the importance of meaningful tasks which were useful and valuable for others. For some of them the experience has made its mark in their further choices: in what they eat, where they live, use of leisure time and choice of training and profession.
Comparison of the three cases

These three case studies have very different frameworks and conditions, but they are all engaged in building a bridge between agriculture and pupils to give them understanding and affect their attitudes. We will try to describe the span from case 1 to case 3 in relationship to the results which have resulted from this study.

The three cases span over varying spaces of time. Whereas case 1 is confined to one school day for the 10th grade, the 10th grade pupils in case three are on a two week trip to a farm in another country where they live and work integrated in the rhythm of the farm. Between these two extremes, case 2 provides experience and learning at the farm during the school hours of three weeks, spread over the 8th to 10th grades. This span in time for the different cases is reflected in the answers given by the pupils on the questionnaire, especially where they have answered in open questions. The comments in case 1 are sparse. They experienced a school day which was considered a break and opportunity for group work, but the learning they did was considered as almost the same as what they otherwise had. In case 2 the pupils had much more to tell. They mentioned many aspects of learning. Mastery in practical work as well as knowledge and concrete experience was described by many pupils, whereas almost all commented on the importance of the experience for the social life of the class. In case 3 there is in addition to these aspects a focus on experience at the farm as a key to understanding coherence in nature and society and one's own roll in relationship to the challenges of contemporary food production.

Relationship-based experiential learning in agriculture for pupils

In Dewey and Kolbs models for experiential learning, knowledge or judgement is the point of departure for further actions which again lead to new experiences. We have called the path from knowledge to new actions for "goal orientation" where new actions are motivated on the basis of understanding won from experience. We presented six key concepts to define the conditions for experiential learning more precisely. These concepts can be used to describe what happens in case 2 and 3 when the pupil goes into the enterprise of the farm. When the pupil accepts a task, relationships are created as he/she does the work. Through work with the task, concrete results will be realized. The results have relevance in relation to the needs of the farm, but also relevance through the experience of mastery. Mastering the challenges of the tasks creates a resonance in the pupils because the task are anchored in a coherent and meaningful context which gives the pupils a confirmation of their worth and self-understanding. This forms the basis for reflections where learning can be worked through and made conscious. The resonance seems to be stronger and the reflections richer and deeper according to the breadth of relationships which are formed, the amount of concrete realization which has been experienced through carrying out the task and amount of relevance which the pupils meet in the task. Re-creation designates the urge to plan and execute further actions on the basis of this experience. If the other R's open for this, re-creation will be expressed in the form of sustainable values and ability to act in accord with those values.

Our model for relationship-based experiential learning builds upon the recognition that comprehension triggered through mastering tasks in a meaningful context leads to capability of action. Especially in case 3 where the pupils have had the chance to develop broad and deep relationships in mastering meaningful tasks, this study shows how capability for action is acquired. The empirical data verify our model as a relevant tool for understanding experiential learning with the farm as arena and is not yet tried out in other experiential learning situations. However it is interesting to note that what they learned in case 3 was still a vital element in the awareness of former pupils after many years and still plays an important role in their reflections and understandings. According to the results of the inquiry, their learning also exercises a lasting influence in determining their actions. In this case seeds seem to have been sown for development of citizens who think and act according to the viewpoint of sustainability.
Learning for sustainable development is an important issue in our time. Several projects in other countries show that school lessons which take their point of departure in concrete tasks outside of the classroom and in nature improves learning in all subjects (Hoody and Liebermann 1998, Ballentyne and Packer 2009). In the opinion of the authors it is unlikely that the school of the future will continue to lead an isolated life outside of the vital functions of society and the daily work which secures our existence. The school will need to place itself within the real tasks which will motivate pupils in another manner than through examinations. Agriculture and horticulture can be arenas for learning which meet the demands for learning sustainability in an experiential learning process.

References


Results of a Dutch effect study on different farm education programs

Dorit Haubenhofer, Jan Hassink, Imke van der Meer, Nicolette van de Kamp, Evelyne Schreurs, Yvon Schuler

Abstract: The phenomenon of farm education develops fast in the Netherlands. Its main point is to open farms for educational purposes. The visiting groups of children are mainly primary school classes from eight to twelve years of age. This is the first study in which three different types of farm education programs were examined in matters of their aims and successes: (1) Daytrip to a farm, (2) A school camp of one week on a farm and (3) a school year in which one whole school term is influenced by farm life and a class works on a farm once a week for a whole term. The study reviewed the aims of each of the three types and whether or not these aims could be achieved for the participating classes. Six classes took part in the study, always two in one of the three types of farm education. The results were evaluated by using questionnaires that were given to the students and the teachers before and after they had visited the farms. Additionally, there were interviews with the parents and the visits were documented by research assistants. The instruments that were used enabled the researchers to detect both changes in the theoretical knowledge of the children as well as in their attitude and skills. The study showed all kinds of positive results and obstacles of a pilot study. The conclusion is that all types of farm education were able to reach their defined aims. These aims were, first of all, an increase of knowledge of the daytrip students, building on that, developing group dynamics and practical learning for the school camp students, up to sustainable development in thinking and acting of the school year students.

Keywords: farm education, the Netherlands, primary school children, comparison, aims, effects, development

Introduction

“To give children and adolescents the opportunity to get in touch with nature, plants and animals”...“To bring across knowledge of foods and their production”...“To bring across knowledge about animal-keeping and modern farming”...“To develop motor skills, enhance common knowledge and to arouse interest in people and all living beings”...“To enhance self respect and to minimize the dangers of peculiar behavior.”

These and other aims are mentioned by people who work in the field of farm education (Jolly and Krogh, 2007; Powers and Powers, 2006). In this connection, it is striking that these aims are widely spread and that some of them appear rather ambitious. Can one or several visits on a farm really bring across knowledge, teach physical skills and even influence the mental development of children and teenagers? That was the question to be answered in 2009. Due to the fact that farm education is a quickly developing phenomenon in the Netherlands, the Department for Agriculture, Nature and Food Quality (translated Ministerie LNV – landbouw, natuur en voedselkwaliteit) wanted to know whether farm education is really as successful as is claimed by the practitioners and whether different types lead to different results. Therefore a study was initiated which was carried out by Wageningen University and practitioners (Stichting Educatief Platteland, Stichting Boerderijschool, Orgyd procesadvies). All results were published in a Dutch academic report; a summary of the methods used (as well as their advantages and disadvantages) and their results is presented here.
Farm education in the Netherlands and its aims

In the Netherlands, children from the age of four to twelve attend primary school. There are 7,000 primary schools and 350 primary schools for children with learning deficiencies throughout the country. That means that more than 1.5 million children attend Dutch primary schools at the moment. Additionally, there are 700 secondary schools for about 900,000 teenagers. This shows that the potential market for farm education is a rather large one (Haubenhofer et al., 2008).

Therefore, it cannot be surprising that more and more programs offering farm education are appearing throughout the whole country. In 2007, more than 8,000 farmers offered a tour on their farm to tell the students something about food production, to let them breathe country air and to give them an accurate picture of modern farming (Platteland Impuls, 2007). These programs are mainly offered to primary school classes or secondary schools and can be described as a singular one-day trip. The class attends a tour guided by the farmer or his wife and the students can ask questions, watch them do their daily work or even help a little. Furthermore, they can watch the animals and probably interact with them, they learn something about food production on the farm and – in many cases for the first time – see what a farm looks like and what is going on there.

In 2007, about 200 farms offered such programs on a more or less regular basis throughout the year and some dozen farms had already specialized in these programs and generated their main income from their educational offers. It can be assumed that the number has increased over the last years. The growing economic importance of farm education in the Netherlands becomes obvious as there is a national platform for the topic which offers quality standards for farms, supports a farm education network and offers information for schools, parents and other interested parties.

On farms which have reached a certain level of specialization, school classes and groups of children can sometimes stay longer than one day, possibly for a week or they can even work on a year-long project. When analyzing the structures of farm education programs, one can see that during longer stays on a farm more attention is brought to the physical and psycho-social development of the children. That means, if they have more than one day on the farm, the children are more readily animated to actively help on the farm.

Concluding one can say that farm education programs have different goals depending on how much time the children spend on the farm. The basis of all programs is to provide the children with theoretical knowledge. When the stay is longer, practical experiences can be made, which, due to the teamwork, can have an effect on the psycho-social development. These relations are shown in Figure 1.
Figure 1. Self-education goals of different programs, depending on their duration.

Although there are results from practice and public interest is rising, too, there was no academic study up to the year 2009 that collected and analyzed the impact of different farm education programs. This step was essential in order to know whether the goals set by practice are in fact reached.

Participants and methodology of the study

One of the biggest problems of the study was to make the effects of farm education at all measurable. It was also the purpose of the study to find a way to obtain results from different programs with various participating schools; this means, such methods had to be chosen that considered differences and individualities, but still delivered comparable results. The following points were analyzed in this study.

- Information about participating schools and businesses
- Information about the process and the structure of the respective farm
- The aims of the farm education programs
- Whether these aims could be implemented and achieved

The study team was composed of both researchers and people working in the practical field of farm education. They included representatives from education and agriculture, and representatives of farm education associations.

Firstly, the participants, as well as the organization, structure, and aims of the farm education programs will be outlined. Secondly, a detailed description of the methods used will be given.

The participants and the farm education programs

When selecting the schools it had to be ensured that the results were comparable, despite the classes' individuality. Therefore, only classes from certain grades were selected to match the children's age-specific level of development. In addition, three different types of farm education were evaluated. For each type of farm, two classes were selected. That means, although in such a study neither "randomized trial" nor absolute uniformity (of schools, farms, or education programs) is possible, the differences were minimized as far as possible.

Overall, six school classes participated in the study, as well as their teachers and some parents. Each type of farm education was attended by two school classes either the "day trip" (two different farms), the "school camp of one week" (the same farm twice) and the "school year" (two different farms).

A. The day trip: The two classes comprised 19, respectively 21 children from a sixth grade of primary school. The children were 9 to 10 years old. Both classes visited a dairy farm, each visit lasted about 1.5 hours. During their visit, the classes were given a tour by the farmer and got information about him and rural life, farming structures, milk production and processing, as well as the cows and how they were kept. The children could ask questions and get into contact with the cows and calves. The dairy farms were "normal" agricultural farms and therefore not specialized in welcoming school classes, although the farmers already had some experience in farm education, and one of them had even attended a corresponding training. It was the responsibility of the teachers, whether and to which extent the visit was discussed with the children before and after the visit. School directors and parents found little involvement; some parents were involved because they offered transportation for the children and supervised them during the visit. The visits were financed by the schools or privately, and both the headmaster of the school and the parents had to give their consent.

B. The school camp: Two classes comprising 10, respectively 16 children visited the same farm for a few days (at different times). Both classes were from primary school, one in grade
8(11-12 years), and one in grade 5/6 (8 to 10 years). The farm was not a “normal” agricultural farm anymore: The farmer himself was a teacher and had, years ago, specialized himself and his farm entirely on welcoming groups of children and on organizing farm education. The groups slept on the farm in a converted barn, which also included a kitchen and sanitary facilities. That means, the children became ‘co-farmers’ during the day under supervision of the farmer and his co-workers; otherwise they lived on the farm in a self-sustained way, had to clean up their rooms, toilets and bathrooms by themselves, cook their own meals, wash their dishes, etc. During the day, the farmer met with the children and their accompanying adults (teachers, parents, or employees from the farm), and in teams that changed every day performed the duties of the day. The farmer offered a place to stay as well as the necessary equipment (coveralls, rubber boots, food for the animals, shovels and other tools, etc.). The farm offered a variety of options: There were many different types of large and small animals (usually only a few individuals per species), which had to be provided for; in addition, there were small fields and pastures which had to be tilled. In the children’s spare time – which they were given every day – they could play under supervision on the farm, play with one another or with the animals. Tasks that were too hard or dangerous for the children were performed by the farmer or other adults. This form of farm education constituted the main income of the farmer who had no operational production anymore. The teachers were responsible, whether and to which extent the visit was discussed with the children before and after the stay. Again, school directors and parents played no major role, although they had to give their consent and finance the camp out of school funds and privately.

C. The school year: In the Netherlands there is a foundation that has specialized in the organization of so-called farm educational school years. The aim is to allow a class to visit the same farm on a weekly basis in order to work as co-farmers throughout the school year. This results in a total of 20 visits. Hence life on a farm can be experienced through all seasons. Furthermore, the school curriculum is linked to agriculture during this school year. In maths lessons, calculations are done in connection with the farm, in language classes, texts are read that deal with agriculture, and so forth. Each week, the day-long visits to the farm are prepared before and discussed after the stay. Discussions are held regularly with the children so that they can reflect on their experiences and impressions. In addition, logbooks and diaries are kept. One can imagine that not only the children but also the teachers, school directors and parents are closely involved and committed to the program features. The selected farm is usually a mixed "normal" productive farm which provides both plant and animal production. The main income of the farm is generated on the farm; the education program provides only a small contribution. The children are there to help the farmers and to give the farmer/the farmer’s wife a hand in all possible activities. Here, too, the children work in alternating teams, under the necessary supervision and assistance of adults (farmer/ farmer’s wife, teachers, farm employees). The farmer/farmer's wife signs a one-year contract with the school to ensure that the whole class can come throughout the whole year. The foundation is growing, and now there are already several schools that participate with multiple classes. Two classes participated in our study, one with 26 and one with 29 children.

Table 1. Characterizing aspects of the three forms of farm education pursued in the present study (translated and adapted from Hassink et al., 2009).

<table>
<thead>
<tr>
<th>aspects</th>
<th>daytrip</th>
<th>school camp</th>
<th>school year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>1.5 hours</td>
<td>A couple of days</td>
<td>One school term</td>
</tr>
<tr>
<td>Aims</td>
<td>To see a farm, gain knowledge about food production</td>
<td>To see a farm; strengthen the group; to learn in real life</td>
<td>Learn in and about real life; gather practical experiences</td>
</tr>
<tr>
<td>Visions of the school about learning during the farm program</td>
<td>Daytrip; learning</td>
<td>learning; fun; feeling of being a group; to learn in real life</td>
<td>The farm as a new authentic learning environment; real working conditions as basis; to start</td>
</tr>
</tbody>
</table>
The respective features and aims characterizing each farm education program are summarized in table 1.

### Methods

A series of customized questionnaires for children and teachers was developed and tested on independent classes to study their suitability. Furthermore, log sheets and interview templates were designed for academic observations on the farm and for interviews with the parents. Furthermore, all farm visits were followed and documented by one of the researchers. In group A (day trip), a researcher was present the entire time, in group B and C (school camp and school year) the researcher visited the groups on several days.

All questionnaires were filled out by the children and teachers of groups A and B (daytrip and school trips) before and after the visit to the farm. In group C (school year), the questionnaires were filled out before the start of the school year and at half-term. The aim was to detect possible changes in the behavior of the participating children which may have been caused by the visits to the farms.

There were different questionnaires for children and teachers: to evaluate the theoretical knowledge, the subjective attitude and skills of the children, and to measure the views of the parents concerning the effects on the children. The exact structure of the instruments is described below.

1. Questionnaire for the children about their theoretical knowledge: This questionnaire included 18 questions to test the theoretical knowledge of the children before and after their farm visits. It was adjusted to the age of the children, the core objectives of the Dutch educational program and to the particular production type of the farm, and included questions about the general life on a farm, production and the things, plants and animals that you can see there, or learn about. All children had to fill out the questionnaire alone during class, before and after the time spent on the farm.

2. Questionnaire for the children about their subjective attitude: This questionnaire was used to determine whether the farm visit was able to influence the subjective attitude of the children. The questionnaire included 23 questions: Firstly there were 15 questions about the rural area, life and work on the farm, food production, the professional image of the farmer/his wife, the farm animals and safety and hygiene. The remaining eight questions were related to additional topics such as being physically active, teamwork, eating habits and self-confidence (Hassink et al., 2009). All children had to fill out the questionnaire alone during class before and after the time spent on the farm (along with questionnaire 1).

3. Questionnaire for the teachers about the theoretical knowledge of the children: The questionnaire included 51 questions that matched the educational goals of the Dutch primary education system in the subjects of (-) mathematics and language, (-) flora, fauna, fungi and bacteria, (-) natural processes, (-) food, health, reproduction and life style, (-) communication (techniques) and self-reflection, (-) geographical heritage, and (-) the human relationship to

<table>
<thead>
<tr>
<th>Adjacent on the farm</th>
<th>Offering information and learning materials</th>
<th>Offering information and learning materials; adjustments of the structure and the daily plan</th>
<th>Education is part of daily farm activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of the farmer</td>
<td>Source of knowledge</td>
<td>Source of knowledge, authority</td>
<td>Authority, coach</td>
</tr>
<tr>
<td>Working methods</td>
<td>Excursion; lesson</td>
<td>Active participation; group program</td>
<td>Active participation; reflection; evaluation</td>
</tr>
<tr>
<td>Embedding into the school curriculum</td>
<td>Low</td>
<td>Medium (connection to other subjects possible)</td>
<td>High and growing</td>
</tr>
<tr>
<td>Role of the parents</td>
<td>Low</td>
<td>Low - middle</td>
<td>High</td>
</tr>
</tbody>
</table>

25
nature and the environment (environmental processes). The teachers completed the
tasknaires during the same lessons as the children.

4. Questionnaire for the teachers about the attitude and skills of the children: There were 25
questions that measured whether the visits to the farms affected the attitude and skills of the
children. The first 10 questions dealt with the attitude of the children towards team work, food, the farm and local life, physical work, nature, responsibility, respect, care for animals
and plants and exploration drive. The following eight questions focused on the skills of the
children in respect to tool use, their senses, physical tasks, cognition, teamwork, learning desire, and understanding. And the last seven questions covered the children’s development
in the areas of self-confidence, independence, assertiveness, self-reflection, respect, voluntary cooperation, and leadership.

5. Furthermore, telephone interviews were held with parents of participating children (one to
two per class). These interviews were carried out after the classes' farm visits, in an open,
narrative way. That means, the parents told the interviewer what they had heard about the
farm visits from their children and whether they could see any changes with respect to
theoretical knowledge, attitude or abilities of their children. They were also asked whether
they and their family had already been on farms and what they thought of their children
participating in the farm visit.

After completion of the survey phase, all data were qualitatively and quantitatively processed
and analyzed.

**Main results on the effects of the three forms of farm education**

Once the aims of the educational programs had been evaluated, it was determined whether
the defined goals had been reached. In this context, it was interesting to see the impact of
the different farm education programs and to observe that the amount of effect increased
with the duration and intensity of the programs. The most significant results are shown in
Tables 2 and 3 and are discussed additionally below:

1. Results of the questionnaire for teachers about the theoretical knowledge of the children:
as a result of the day trip, the teachers were of the opinion that the children had mainly
gathered theoretical knowledge about plants and animals, the supply of animals, the
seasons, the purchase of food and the relationship of people with their environment. The
amount of knowledge gained was related to the type of farming and the amount of
information given during the visit. During the school camp, the teachers also thought that the
children had learned something about reproduction and about issues of security, hygiene,
landscape, and nature. Furthermore, the teachers of the school year program saw
developments in the areas of language, mathematics, natural processes, mold, bacteria, and
sustainability (table 2).

**Table 2. Teaching objectives of the Dutch primary school system achieved by the three types of farm
education (translated and adapted by Hassink et al., 2009). Observed changes indicated with a “+”***
2. Results of the questionnaire for the teachers about the attitude and skills of the children:
The teachers of the day trips noticed changes in the attitudes of children based on appreciation of the farm, the farm animals and the amount of physical work done on the farm. During the school camp and the school year, the teachers expected and realized that the farm visit had positively influenced the children's level of physical activity and their appreciation of nature. In addition, both programs enhanced the children's relationships with their peers and their sense of responsibility, self-reflection and self-confidence (table 3).

Table 3. Opinions of teachers (average), based on the changes in attitude and skills of the children in the three forms of farm education (translated and adapted by Hassink et al. 2009). Observed changes are indicated with a "+")

<table>
<thead>
<tr>
<th></th>
<th>Day trip</th>
<th>school camp</th>
<th>school year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appreciation of the farm</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Care for the animals</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Appreciation of physical work</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Appreciation for nature</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Amount of physical activities</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Children's relationships with their peers</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Self-reflection</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Self-esteem</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

Regardless of the findings, it was interesting to observe that the teachers of the school camp and especially the school year group were more critical with regard to the expected effects of the education program on children in comparison to the teachers of the day trips. It seems that the teachers in groups B and C had prepared themselves more intensively and had therefore developed a more critical approach.

3. Findings from telephone interviews with parents: All parents came to the conclusion that their children were excited about the time they had spent on the farm. However, it was only the parents of group C (school year), who actually noticed changes in the development of their children. These parents explained that their children now participated more actively in house work, that they ate a healthier diet, and that they even advised their parents about the choice of products in the supermarket. In addition, the children had developed new learning
techniques, new interests as well as new plans for their professional future, and they generally favored going to school.

4. Findings of the questionnaire for the children about their subjective attitude: The children welcomed in particular the following aspects of the time spent on the farm: The happy mood, lots of space, the opportunity to work together but also independently, to be physically active, to be outside and to work with animals and care for them. In addition, the children showed much respect for the farmer/the farmer's wife. It was also interesting to observe that the participants of the day trips showed little enthusiasm for working on the farm and for nutritional aspects. These attitudes become clear when one considers that the short day trips included little practical activity but mainly imparted theoretical knowledge. It seems that children do not appreciate certain aspects if they do not get the opportunity to gain practical experiences in relation to them. As May Zedong has already said: "All true knowledge arises from direct experience."

Discussion and conclusions

In this study, three different forms of farm education were analyzed for the first time as to their aims and effects. Since this was a pilot study, it had to deal with all related difficulties and problems:

The final selection of participating classes was a problem just as the choice of the measuring instruments. In such a field study, it is never possible to find statistically comparable individuals or to create the same conditions. A "randomized controlled" study design is not possible, either, as only schools participated which took part in the farm education programs anyway. The number of participating schools – six – might seem quite low as well.

Since there was no comparable experience from previous studies, the choice of measuring instruments was also a sensitive issue. On the one hand, methods had to be found that could be used for all participating classes and farms. They also had to correspond to the development of the children, the general educational objectives of the Dutch primary school plan, as well as the expected goals of the education programs. Only then was it possible to detect changes or developments in the children’s knowledge, attitude, and behavior.

The results of the study and its significance have to be seen in this light. The study combines two study goals – to collect as many results in different aspects of farm education as possible and to remain within the given study margin.

A summary of the main results: All three self-education programs observed have different objectives. Day trips are mainly about having been on a farm once, and gaining theoretical knowledge of the work and food production. For the school camp, the aim is to strengthen the group feeling within the class and to let the children experience the farm first-hand – to learn in "real life", so to speak. The school year program went even further and dealt with topics of gaining long-term experience, which also extends to the thoughts and actions of the children. It is our opinion that the objectives of each farm-education program are not too ambitious, and that – at least in this study – all goals were achieved. A comparison of the various forms of education on the farm under this approach must therefore necessarily be seen as a free evaluation. It is not possible, and was not purpose of this study, to determine whether one or the other form of farm education is better for children. All forms have their individual advantages and disadvantages that must be taken into account. Short trips are cheap and easily organized and implemented. Longer visits cost more energy, time and also money but generate multi-layered impressions and effects. Much can be achieved during the time spent on the farm if the schools, parents, and farmers pursue clear aims. It is therefore important that the stakeholders plan their aims beforehand. Much can be achieved through proper preparation and reflection of the visits.

At the end of the study, the feeling remains that we have achieved much but not enough. We see this study as an important first step in which we have learned much about the possibilities and feasibility of such studies. Further studies should explore and deepen these results.
References


How is the farm as site of learning related to social services?

M.Sc. Heike Delling

Justus-Liebig-University Gießen, University Of Cooperative Education Sachsen,
heike.delling@ba-dresden.de

Abstract: How can the term “social services” be classified in relation to agriculture in Germany? How can farms as sites of learning be classified with regard to social services performed by farms? What potential do farms as sites of learning offer to senior citizens as a fairly new target group? In this paper, the author presents the current state of academic research as well as her further planned research on the topic of “social services by farms”. As the core of current research, a basic definition of the term “social services by farms” will be presented and systematised. On the basis of this definition, the author analyses the relation between farms as sites of learning and social services. The author further determines prospective links between farms as sites of learning and various offers for senior citizens.

Social Services by farms are being integrated into the concept of multifunctional agriculture. The dimensions and characteristics of the activities carried out in the scope of social services by farms pose sufficient criteria for a clear definition of the term in question. Hence the farm as site of learning is distinguished as an educational offer in the social service network and is set in relation to therapeutic and occupational forms of offers. As a result of the developments caused by demographic changes in Germany, offers for senior citizens as target group are integrated into the developed concept. Moreover, further research steps are specified.

Key words: social services, farms as sites of learning, farms, strategic diversification, definition, children, senior citizens

Introduction

Problem statement

Farms are production facilities with the purpose of supplying and refining food. In Germany, approx. 375 000 companies operate along this primary agricultural goal (Federal Statistical Office 2009). In addition, agriculture shapes our culture and environment; it creates landscapes and social networks, provides jobs and habitats and supplies renewable natural resources as well as renewable energy sources. Shifts in the market economy and in existing social structures entail changes in farms and in the entire green sector. These changes manifest themselves, for instance, in the decline of farms by approx. 20 percent in the past 10 years (Federal Statistical Office 2009). The broad scope of the agricultural sector provides farms with diversification potential in order to meet structural shifts in the market economy and in society. Business strategies based on strategic diversification may constitute a sustainable solution to maintaining enterprises in sound condition (LfL 2007 BMVEL 2003).

The expansion of farms to comprise other industrial sectors, such as the supply of renewable energy sources and natural resources as well as agricultural environmental services, is supported by research, politics and consulting services in the practical field. In opposition to this, social services by farms are still in a project status and are promoted primarily by the initiative of individual parties. Social benefits by farms comprise offers in the educational, integrative and therapeutic range and thus also include offers centering on the farm as a site of learning (Kalisch, van Elsen 2009). Social benefits are not comprehensively structured across the country, nor are the related terms defined consistently. Any such offers are currently selective and sporadic, developed in various forms by a few precedents (Hermanowski 2006). Educational offers on farms as sites of learning, workshops for disabled people in the green sector as well as animal-assisted therapy are such precedents in the practical field (Kalisch, van Elsen, 2008, Hermanowski 2006, Matz, 2008).
precursors also initiated an exchange of the experience gathered in previous kinds of offers as well as an exchange of the results of accompanying studies. In contrast, very recent and less well-connected offers in the range of social benefits by farms lack this close connection to research and exchange of experiences. Van Elsen (2008, p.21) considers a common understanding of, as he calls it, "social agriculture", to be advantageous for its classification and differentiation. It is not clear, however, in which form and through which actors farms as sites of learning can be classified as to social benefits by farms. In addition to this, institutions dealing with farms have done little so far to promote social services as strategic diversification. In parts, it becomes apparent that the existing forms of offers in the range of social services have been inadequately monitored and accompanied on an academic level (Selig, van Elsen, 2007, Wüstemann, Mann, 2008, Hilger 2008).

**Objective**

This study shall provide a basis for future accompanying academic work as well as for studies on effectiveness of social services by farms. The necessity for action is to be pointed out and options for promoting social services by farms are to be presented in order to lay the groundwork for offers with a theoretical as well as a practical basis in the range of social services by farms. A foundation is to be provided for successful implementation of the knowledge gained in the practical realm, with the purpose of being able to deliberately coordinate the needs and requirements of individual target groups with the possibilities of farms in the scope of further studies.

A) The definition of the term "social services by farms" is to be presented and defined in the scope of nationwide development of forms of offers and the related accompaniment by academic research. The functional areas of social services and agriculture are to be assigned to one another.

B) The relation of the farm as a site of learning to social services is to be depicted and illuminated as an example of social services by farms. Stakeholders of educational offers on farms as sites of learning are to be categorized within the network of social benefits by farms.

C) Prospective points of contact for farms as sites of learning by way of a joint network of social benefits by farms are to be disclosed. Forms of offers for senior citizens by farms as a still very recent and barely interlinked field are to be set in relation to one another.

As a priority, scholars in the field of social services, agricultural educational institutions as well as decision-makers in the realm of politics and consulting are to be given an incentive to further develop and enhance social benefits by farms. The results of this literature study find direct application in the author’s research project in the scope of her dissertation on the subject of “farms as providers of social services”.

**Methodological framework and resources**

**Methodological approach**

The work on the above goals is embedded into the author’s dissertation project on the subject of “farms as providers of social services”. This paper develops and presents important sub-steps and results in view of the overall research project. In line with the “Phasen des Forschungsprozesses" ["phases of the research process"] by Friedrichs (1980, p.119), the approach and results of this paper are incorporated into the phases of “problem statement”, “conceptualization” as well as, in parts, “data collection” of the dissertation project.

With regard to methodology, the research question posed for this paper and the related goals are analyzed on the basis of empirical social research. The primary aim of the research project is, first of all, to identify social services by farms on an empirically verified basis. The intended model of the object of research – social services by farms – is to describe the empirical features and to be confirmed by same. The intended research plan first of all stipulates a dimensional analysis of social services by farms in order to thereby establish
theoretical aspects and dimensions. Common expressions are determined and defined for the resulting theoretical concept (in accordance with Zetterberg 1973, Kromrey 2006).

**Methods and instruments**

The object of research, initially expressed in very general terms, is to be examined as to any aspects which appear particularly significant as well as concrete points of interest by way of the information collected. Information is gathered as follows:

- Literature study for an understanding of terms and networks in articles in agricultural or educational professional journals as well as from symposia,
- Analysis of documents in public presentations and such addressed to the target group on the internet as well as informational brochures by the providers and key institutions,
- Attendance of conferences and expert forums in the field of social benefits by farms,
- Accompaniment of and participation in developing teams as well as network communities of providers and research institutions and key institutions.

The object of research and factual points become apparent on the basis of the information collected. The dimensions of the object of research are selected and analyzed as particularly significant aspects. The educational focus of farms as sites of learning, the target group of senior citizens as well as their relation to social services are treated in this paper on an exemplary basis.

**Definition of “social services by farms”**

Under the model of multifunctionality, farms are also defined by the function of non-commodity outputs (OECD 2001) besides their primary production of food and energy (commodity outputs). These so-called non-commodity outputs may, for instance, consist of efforts at environmental protection as well as preservation of the cultivated landscape. Moreover, outputs related to agriculture in the field of social benefits come to form a distinct function of agriculture on account of market potential and the influence of politics (Knickel 2004, Hermanowski 2006, Wüstemann, Mann 2008).

Both marketable outputs as well as outputs in the area of common welfare – for which no markets exist or any existing markets barely function as they constitute public goods or externalities – are classified as non-commodity outputs of multifunctional agriculture (OECD 2001). Hence social benefits may constitute both marketable forms of offers as well as effects by agricultural activities which are available to common welfare.

Fig. 1 classifies social benefits as a part of multifunctional agriculture.

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**Fig. 1.** Social benefits as a part of multifunctional agriculture (source: illustration by the author)
Numerous terms, self-concepts, delineations and classifications exist for social benefits by farms (Di Iacovo, O'Connor, 2009, Hermanowski 2006). The development of corresponding forms of offers and their accompaniment in the academic field have coined the terms “social services” and “social farming” in Europe (Di Iacovo, O’connor 2009) as well as the German terms “Soziale Landwirtschaft” [“social agriculture”] and “Soziale Leistungen” [“social benefits”] (Hermanowski 2006). The term of social agriculture is currently establishing itself as a general term denoting offers for the purpose of educational, therapeutic or occupational integration of people on farms (Kalisch, van Elsen 2008). These three intended purposes are interpreted differently and, in parts, also labeled differently. In the German-speaking area alone, the fields of health and social affairs (Wydler 2008), rehabilitation and inclusion (Limbrunner 2010) as well as care and attendance (LfL 2007) are drawn upon, for instance. Their common denominator is the circumstance that each describes a part of the forms of offers in more detail, thereby consolidating the definition of corresponding social benefits. However, there is a risk that too narrow definitions may rule out future forms of offers which have yet to develop. A common understanding of applied terms becomes apparent in the sense of a conscious and joint development of social services by farms in Germany. Van Elsen (2008) proposes the following as a “pliable” and open definition of social agriculture: “Soziale Landwirtschaft ist multifunktionale Landwirtschaft, die einen sozialen Mehrwert schafft” [“social agriculture is multifunctional agriculture which creates an added social value”].

Bauer (2001) created a systematic understanding of the concept of service in the field of social affairs and compiled typical features of social services along the dimensions of the above term. As per Bauer, social services are intangible items, for the creation of which producers and consumers must work closely together, which are not transferable, stockable or transportable (Bauer 2001). In accordance with the simultaneous and location-based interaction between service provider and the recipient of the service, social services may be classified as forming a part of social benefits if the process of the service is performed on the basis of a joint agreement between the parties concerned. Both the agreement as well as the performance of the service itself takes place between the farm and the target parties or target groups directly for and with the person. Hence social services by farms include the dimensions of personal processes (Bauer 2001). Social services are personal, non-transferable, non-stockable as well as bound in time and location and are therefore distinguishable from social benefits.

The following example serves to demonstrate the above: By rendering social benefits which sustain villages with regard to their appeal, the vibrancy of village life or offers for children, farms make an expedient contribution to the intrinsic value of rural regions. As per Roericht and Kunz (2007), this may have a positive effect on young families choosing to settle in rural areas. The quoted examples of social benefits may become a social service if a young family makes use of the educational offers of a farm for its child and thus becomes familiar with typical seasonal agricultural activities once a month, for instance.

With an ongoing research project in Switzerland, Wydler (2008) has put together a preliminary definition for “Soziale Dienstleistungen in der Landwirtschaft” [“social services in agriculture”]. In accordance with the specified characteristics listed by Kalisch, van Elsen (2008), Hermanowski (2006) and Di Iacovo, O’connor (2009) as well as the aforementioned characteristics listed by Bauer (2001), the author develops the following definition of social services by farms on the basis of the definition given by Wydler (2008):

Social services by farms consist of activities which

- do not serve the purpose of primary production,
- are rendered on the farm or within the enterprise itself,
- are rendered on either a self-employed or on an employed basis,
- are rendered by the farmer but also by all other parties affiliated with the enterprise,
include the resources of farms,
serve educational, therapeutic or occupational integration of people and
are performed on a personal basis with simultaneous interaction with the recipients of the service.

On the basis of the field of social benefits in the sense of multifunctional agriculture, as depicted in fig. 1, the terms of social agriculture and social services are classified as described and are presented graphically in fig. 2.

**Fig. 2.** Social services by farms as a part of social agriculture (source: altered in accordance with Kalisch, van Elsen 2008)

### Classifying farms as sites of learning

The National Initiative for Learning on Farms “Bundesinitiative – Lernen auf dem Bauernhof” (BMVEL 2003, p.5) coined the following understanding of farms as sites of learning: “Der Lernort Bauernhof bietet die Chance, Wissen rund um das Thema Landwirtschaft zu vermitteln. Er ist ein Ort, um Erfahrungen im Umgang mit Pflanzen und Tieren zu sammeln und zu verdeutlichen, was eine nachhaltige und produktionsorientierte Erzeugung von Lebensmitteln ist.” ["farms as sites of learning award the opportunity to impart knowledge related to the field of agriculture. These farms are sites on which to gather experiences with plants and animals and which illustrate the meaning of sustainable and product-oriented production of food"]. In this connection, emphasis is placed on the interaction between farms as sites of learning and schools as educational institutions for children and adolescents. Possibilities of combining the site of learning with site of experience and of adventure are stressed in particular.

A systematic classification of the farm as site of learning within the conceptualization of social services performed by farms permits the following conclusions:

Social services by farms are to be considered a partial function of multifunctional agriculture. Farms as sites of learning may comprise both marketable forms of offers as well as pro-bono services for the common welfare; for instance in the shape of a free visit by a kindergarten group. Social services by farms as sites of learning apply to diversified farms, on the one
hand, which provide forms of offers suitable to the target group in accordance with the actual demand in order to combine different sources of income; for instance the project day on the topic of potatoes with a school class. On the other hand, social services by farms also apply to specialized school farms with their educational offers of excursions of several days in the agricultural field.

Farms as sites of learning constitute a partial function of social services. Offers by farms as sites of learning emphasize their focus on educational forms. In practice, social services by farms as sites of learning are primarily directed at an educational integration of the target group of children and adolescents into the agricultural system. It is moreover conceivable to mix these forms of offers with therapeutic or occupational offers. In practice, such offers take the shape of integral measures for problem children and adolescents or rehabilitational measures for people injured in an accident.

Fig. 3 graphically depicts the net of relations between social services by farms and farms as sites of learning. As opposed to fig. 2, the three areas of offers are not consistently separated from one another in this depiction. Hence the option of hybrid forms existing between educational, therapeutic and occupational offers is left open.

Fig. 3. Network of relations between social services by farms and farms as sites of learning (source: illustration by the author)

Recognizing potential for the future

In view of the demographic developments in Germany, there are possibilities of addressing senior citizens as new target groups. In particular the increasing diversity within the elder generation contributes to generating new needs, challenges and thus new market niches for farms as providers of social services (LfL 2007, Rimmele 2004).

Upon consulting the specification of social services for senior citizens in the form of the graph from fig. 3, the corresponding social services can primarily be classified as educational and occupational forms of offers. For instance, distinct forms of living and offers integrating elderly people by occupying them on farms are emerging throughout the nation (Rimmele 2004, Wietheger 2003, LfL 2007). Moreover, there has been an increase in offers for
education and adventure/experiences for retired people which form a part of educational forms of offers. Does the future of farms as sites of learning lie in these educational forms of offers for seniors? What may farms as sites of learning expect from the target group of senior citizens?

In the scope of these considerations, it remains open to which extent therapeutical offers by farms for the target group of senior citizens exist or whether there are any forms of offers which deviate from the presented theoretical concept. Likewise, the demands placed on social services by farms which result from the needs of senior citizens as recipients of such services have been little analyzed to date.

A joint concept of networking and affiliation of the actors themselves would provide a possible basis for drawing upon experiences collected so far among the entire range of actors in social agriculture. Existing knowledge would thus become transferable onto new trends of development. The research project "Soziale Landwirtschaft auf Biobetrieben in Deutschland" ["Social Agriculture on Organic Farms in Germany"] which is sponsored by the National Program for Ecological Farming “Bundesprogramm Ökologischer Landbau” presents an approach for research on this topic.

Planning further research proceedings

A study is to be carried out in the scope of the author’s dissertation project for the purpose of further developing and reviewing the presented theoretical concept.

In accordance with the aims of this paper, the still unclear term of “social services by farms” as well as its relation to the farm as site of learning was structured theoretically and specified in a conceptual sense. The object of research was specified more closely in theory as well as in conception, and common expressions were subsequently chosen and defined for the object in question. The chosen descriptive research design as per Kromrey (2006) serves to present the empirical structure of social benefits by farms in Germany using the example of the farm as site of learning.

As a result of narrowing down the object of research as specified above, the “farm as site of learning” as well as the target group of senior citizens are selected as main elements of focus for further studies. In addition, the reliability of the defined theoretical concept is to be examined. In the process, criteria must be established for examining and confirming the defined term “social services by farms”. This examination is to be carried out by way of empirical investigations using the target group of seniors as example. On the one hand, it is the aim to check and verify the reliability of the established theoretical concept. On the other hand, further stakeholders and experts are to be identified and development processes as well as topics currently requiring further academic research from the provider’s point of view are to be mapped out.

On the basis of the results of this descriptive research project, the author strives to differentiate in more detail among the target group of seniors. In addition, necessary competences of the providers are to be identified for a successful structuring of offers. With regard to methodology, it is planned to perform case studies of selective areas of offers for seniors for these analyses, in the scope of which interviews with providers, consumers and other stakeholders (such as sponsors) are to be conducted and observational studies are to be carried out. An educational module is to be designed for parties interested in providing social services for the target group of seniors in order to ensure both the diversity of offers as well as their quality. It is further planned to test this educational module in practice and to devise recommendations for corresponding modules for further education.

Literature


Rimmele, G. (2004): Dienstleistungsangebot „Betreutes Wohnen für Senioren auf dem Bauernhof“. Thesis at the College Nürtingen, Department 2, program of study agriculture. URL: http://opus.bsz-bw.de; accessed: 10.05.2010


A storyline with farming as the basis for learning about sustainable development – experiences gained from a pilot-project

Christina Lundström a, Magnus Ljung b

aSwedish University of Agricultural Sciences, christina.lundstrom@mark.slu.se
bSwedish University of Agricultural Sciences, magnus.ljung@omv.slu.se

Abstract: Learning about sustainable development is connected to student's knowledge, commitment, willingness and ability to act. Traditionally, teaching this subject often involves abstract and global issues such as climate change, destruction of rain forests, the cultivation of giant prawns, etc. The Scottish 'Storyline' method is a pedagogical method for active learning on a special topic which is described as a story. The students create characters and design a model where the story takes place. The role of the teacher is to ask key questions and record events to move the story forward. The objective of this project was to study the experiences made of students and teachers using the Storyline method to study sustainable development with a farm as a starting point. A storyline work often includes study visits at the end of the work – in this case the students went to a farm. The storyline method has much in common both with John Dewey’s thoughts about experiential and active learning and with new criterias for learning about sustainable development.

Keyword: Storyline, sustainable development, farming, education, Dewey

Introduction

The period 2005-2014 has been declared as the UN Decade for Education in Sustainable Development. How will we educate our children and help them to develop their knowledge, senses and ability to act in a sustainable way? The needs are obvious, but the design is difficult since it is often about getting the individual to resist exploitation and the commercial forces that entice us to consume and often connects the lucky man to this consumption. Many people who say they are prepared to take environmental considerations will explain this with experiences from their childhood (Chawla, 1999). Often, this is grounded in natural experiences along with an important adult. Today's children and young people probably spend less time in the wild which reduces children's spontaneous play in those locations (Uitto et al 2006). Modern childhoods are often fragmented and have fewer places to explore and to use the imagination (Giesbrecht, 2008). A lot of free time is devoted to homework and structured activities as well as television, computers and so on. Louv (2008) notes that today's children are aware of global threats to the environment and nature, while their physical contacts, experience and personal intimacy with the same decrease. For older generations it was the exact opposite. For people to be prepared to take environmental concerns into their everyday lives, some factors are required (Chawla & Flanders, 2007). She or he must appreciate the environment for its own sake, or see its value to humanity. Each one must have sufficient knowledge about environmental issues so that they can see the consequences for themselves and their surroundings. You have to believe that you have influence on the development or feel compelled to act by social norms.

Education for sustainable development must include the three aspects, teaching about the environment (facts, knowledge of context), teaching in the environment (personal experience, the opportunity for personal involvement, artistic elements), and education for the environment (values, attitudes, ethics, reflection and action) (Yli-Viikari & Risku-Norja, 2009). Current schools normally focus on the first part and much less on the other two. In the Swedish commission report SOU 2004:104, it says that education for sustainable development must focus on long-term perspective from past to present from local to global, reality-based with close contact with nature and society, problem solving and stimulation of
critical thinking and action. In education for sustainable development the environmental concept is changed to ecologically, economic and socially sustainable development (Skolverket, 2001). In sustainable development “issues about environmental problems are seen as a conflict between different views and interests” (Öhman, 2006), and “environmental problems are therefore regarded as social structures in which groups of people from different views and values chooses to regard phenomena as environmental problems” (Skolverket, 2001). Therefore, there is no final solution on how to act. The standards must be provided through agreements and discussions between people representing different interests. Consequently the democratic process is included in education. The primary objective in education is to make the students actively and critically consider various alternatives against each other and take a stand. There are no universal criteria for right and wrong, no absolute truths (Öhman, 2006). Open discussion of these issues can make students aware of the moral dimensions of the knowledge. Consequently, the power of right and wrong in the classroom is spread, instead of being controlled by the teacher. The critical discussion is a way to confirm or validate moral choices and is the effect of different acting. The democratic debate is part of the education and the knowledge originates from it, and thus a core dimension of sustainable development.

Monroe et al (2005) shows four development stages of learning about sustainable development; to be informed, to create knowledge, to develop skills and ultimately to act in a sustainable manner. The trend is from a passive to an active student. The more students are involved the better the chance for understanding and learning. In addition the students learn about social aspects such as experience of conflict management, negotiating and teamwork. The last category of education meets all requirements for learning about sustainable development. Education for sustainable development requires a holistic approach, which in turn provides a way to manage complexity and increase the learning ability (Hanson, 2004). A holistic approach bridges the differences between disciplines and cultures, and helps develop logical thinking. A holistic approach demand involvement of both humanistic and scientific views in education. Building upon different types of resources, rather than environmental problems, allows students to relate both to culture and nature and facilitate the involvement of economy and politics into the discussion.

In school major global problems often are discussed and students are faced with questions they have neither seen or may influence, such as the cultivation of bananas, coffee, and prawns, climate change and logging rainforest. Giesbrecht (2008) argues that environmental education must start in the local community and then expand into the global arena. If you have to feel sympathy with the whole world you lose a sense of responsibility and reciprocity with the small place where you belong. Discussions about local issues such as how the neighborhood is formed and shaped probably occur rarely. What does the landscape in the neighborhood look like? What impact has the location of a new motorway, or a new shopping center? Where does the food come from and what impact has our decisions in the supermarket? Children and young people often have inadequate knowledge on issues concerning food, farming and land management (Dillon et al, 2003).

The Swedish school is goal-oriented, which means that there are goals for what children should learn. The teacher decides how to reach the goals. This provides methodological freedom to the individual teacher. In the Swedish national curriculum, there are no goals directly about food, farming and land management. However, there are goals in a variety of topics relating to sustainable development that can be applied to those questions. In the proposed new curriculum provided to the Swedish Government by Skolverket 2010-03-30, there are new articulations about needs for knowledge of how we use our nature, how community is formed, conflicts between different interests on land and water resources, etc. (Skolverket, 2010). To pass in biology in the 9th grade in comprehensive school: "Students will discuss current community issues and possible choices related to health, land management, ecological sustainability and genetic engineering and can distinguish facts from values, describe some of the possible consequences and formulate positions with
explanatory statements." If the student must manage these discussions, explanations and statements more knowledge about food production, agriculture and land use is required, which must be seen as central issue in the concept of land management. Food is also a good starting point for discussions about sustainability. Everyone has to eat and food influences both our health and the environment. Food is also an important matter of equity from a global perspective. Arable land is a finite resource that is often reduced at the expense of construction of highways, shopping centers, and housing. This results in conflicts between different interests in society. The most densely populated areas in Sweden coincide at least partially with areas where the best arable land is situated. In the new curriculum it is proposed that education of social sciences in grades 7-9 will include field studies of natural and cultural landscapes, such as planning of the local community (Skolverket, 2010). If our students will grow up to responsible consumers and policy makers they need a better understanding of these issues. Real knowledge comes from personal experience (Hartman et al, 2004). This demands increased contact between students on one hand, and food, farming and land management on the other. Some generation ago a large proportion of our Swedish children had contact with rural areas through grandparents, or similar. Today, the link often is broken - the knowledge and experience of how food is produced is deficient in many of our students, regardless of whether they live in rural or urban areas (Dillon et al., 2003). There are strong arguments for these connections to be reestablished. The only question is how to do it? Should the student have personal experience he or she must visit a farm. To enable this there are different strategies - the school can move to the farm for longer or shorter time, or the farm may move to the school.

In Norway they work with "the farm as a pedagogical resource". School and farms interact, and students spend part of their school time on a farm, participating in daily practice and the work is connected to classroom education (http://livinglearning.org/). The time on the farm varies, but it is always several times and sometimes up to four weeks. The main objective of the project is to find ways to "create hope and skills in children so that they can participate in a productive and constructive way in the development of their environment" (Krogh et al., 2005). It also includes learning about sustainable development. In a reality where the school's financial situations are difficult and the number of farms steadily decreasing, it is not reasonable to believe that all students will be involved in such activities.

Agricultural organizations around the world offer study visits for school children to learn about agriculture and food production. Often it is short visits, where students may passively watch and are informed of different activities. A study visit gives students first-hand information through their eyes, nose, ear, etc., but the understanding of the role of agriculture for a sustainable society does not necessarily have to increase. The students often only have a snapshot of a complex situation. Probably a deeper understanding requires more time and work with interconnected issues to be able to set agriculture in a broader context. We must ask ourselves what impact an occasional study visit has on students' thinking. It becomes a balancing act between the educational ideal and the economic potential. The Scottish Storyline method could be a possible method to turn the visit into a larger context and thus enhance learning. The aim of this paper is to discuss the potential of the storyline method as a way to increase students understanding of sustainable development.

**The Scottish Storyline Method**

The Scottish storyline method is a pedagogical method for active learning on a special topic which is described as a story (Cresswell, 1997). A storyline strive to develop students' creative and argumentative thinking and endeavor to make them aware of its value and importance (Gustavsson Marsh & Lundin, 2006). Students' work is respected and the starting point is the student's own pre-understanding. The student's create characters and design a model where the story takes place. The teacher's role is to ask key questions and record events to move the story forward. In a storyline the structure of the story is decided by the teacher, but the details are created by students and teachers in interaction. This gives students a sense of ownership of the story, which in turn increases the interest and
commitment. The students get involved with the story through their created characters. Students seek their own information through books, internet, etc. No information is provided unless the students ask for it. Every new episode starts with individual reflection and group discussion about what they already know. In this way the work is based on the student's previous knowledge and experience and the students can learn from each other. The method gives students the opportunity to explain to each other and discuss reasonable answers and solutions to issues and problems they face. The story progresses through new events and key questions from the teacher. A storyline often includes study visits at the end of the work when the students already have acquired some knowledge of the area. A storyline normally is presented to parents or others to show the students that their work is interesting and taken seriously. There is no regular monitoring of knowledge by tests or something like that. The evaluation of students' knowledge is mainly done by the assessment of oral presentations, discussions and written work.

The empirical experience

The empirical data which this paper builds on is a research project involving a three-step process. At first a unique storyline was developed in collaboration with Ylva Lundin, a Swedish expert in the field. The storyline was tested in two Swedish primary schools in the 8th grade (age of 14), one in Gothenburg and one in Eskilstuna. Totally 54 students and 6 teachers were involved. None of the teachers had worked with this method before. By triangulation, using surveys and interviews, the experiences made by teachers and students were possible to follow and investigate. The surveys used among the students were done before and after their work with the storyline. The last survey was followed by interviews with all teachers and in total twenty students.

This storyline focused on sustainable development from a regional perspective, taking a farm as starting point. The storyline begins with a letter which invites the students to a project where people are moving to a farm to work for a sustainable development in the region. Students will reflect on what kind of people that might be valuable in such a project. Then each student creates a character which then will attend through the whole story. Students and their characters are divided into small groups. The groups would create farms and describe what they would work with. The farms were put side by side on the wall in the classroom. Roads, waterways, etc. were drawn between the different farms, linking them to each other. In this way everybody could share the same picture of the landscape. When the farms were created the teachers could choose events which took place on farms. The teachers in this case choose to work with tourism, food and planning of a motorway. At the end of the work the students went to a farm for a study visit.

Results

Surveys
In general the results of the surveys showed a relatively small change in student attitudes between the two surveys. Exceptions, however, consisted of students' experience of knowing a lot about farming and how to work towards sustainable development. The proportion of students who agreed with these statements was significantly higher after the work. The majority of students indicated that environmental issues were important to them even before the storyline. A significantly smaller share was ready to decrease their personal environmental impact, through reduced consumption or travel. In the process, each group started a tourism business on their farm and the proportion of students who agreed that the countryside has much to offer tourists increased. A clear majority of students had a positive attitude to organic food both from a health and an environmental aspect.

Interviews
All students meant that the work was fun, with one exception. The interviews were colored by commitment and joy. Students reported that they learned about agriculture, entrepreneurship and sustainable development. They mentioned that they developed the ability to work
together, talk in front of a group, write, argue, solve problems, use their imagination and be creative. No student could come up with something that was boring. Many mentioned the satisfaction in the ability to take lead of work and be creative. Some comments on various issues: New approach when thinking of agriculture: After work: "When I see myself and my friends standing there with a bunch of cows everywhere and we will try to milk them." Before the work the same person said: "a large field with a lot of people who are there with their pants rolled up, as in China. It was the first thought I had." Understanding of animal welfare rules: "Most guys at our farm wanted to build a slaughterhouse. But you may not slaughter the animals yourself. There must be a veterinarian present, just to cause as little pain for the animal as possible. I think this is good. I do not like animals to be slaughtered or shot like that, but it's something you have to accept." Vision for entrepreneurship: "When I thought of companies (before, the author's comment) I thought of offices and computer. But now I found that if you have land you can build adventure parks or places for paintball playing." Approach to planning and design: "Yes it was a highway. I have not considered that there should be meetings and stuff. You do not consider that somebody's land is used planning a new highway."

Teachers were generally very satisfied and agreed upon that students were active and learned a great deal, also things that might be difficult to learn in 'normal' education. They also experienced a commitment from students that they had never seen before and noticed a new "look in his eye". The teachers made comments as: "It has been their own questions, lots of questions and I feel it has become real in some way." "They were thinking from the basis of real issues in society." "This (storyline compared to other methods for group work, author's comment) provides more because it seems as if they have been out in the reality, although they have been in the classroom". One teacher was astonished about the depth of some students' reasoning and their endurance to find information.

The results show that students' and teachers' experiences from this storyline was very positive in many ways. But it also clarifies limitations in the method with respect to students' ability to understand the connection between agriculture and sustainable development. To be able to interpret further and critically evaluate the results, it may be useful to compare with Dewey's theories of learning.

The Storyline method from a Deweyan perspective
To learn we need to think. Thinking is a way of reaching a conclusion and to examine, something strange (Dewey, 1916/1940). All thinking is research for those who think regardless of whether the rest of the world knows the answer. When faced with a problem or something strange or surprising thinking follows a certain strategy. First an observation is made, a hypothesis is defined, the next step is to compare with previous experience, discuss with others, and finally a solution is proposed. To confirm the solution it must be tested in practice. Any reflections will result in some form of knowledge, but the value of the knowledge varies with its value for further thinking. That is to say what use the new knowledge has on our ability to deal with new problems and tasks in the future. Considerations based on need are more powerful than just thinking. All materials are intellectual, not in its internal structure, but in its’ power to start and direct questions and reflections (Dewey 1900/1990). Practical information gives first-hand experience, but requires reflection in order to provide an intellectual depth. On the other hand intellectual training requires practice to provide a solid experience. Dewey believes that knowledge is the result of a continuously review of ideas and practices in real situations. Knowledge development takes place in concrete or problematic situations where you actively create ideas as problem-solving tools (Ljung, 2009). Knowledge you already own, pre-understanding, controlling the mind and makes it fruitful. The driving force behind thinking is curiosity (Dewey, 1910/1997). Curiosity always looks for new things to consider and is the driving force for further learning. Therefore it must be defended by the school and the
teachers. The process of a storyline is in line with Dewey's approach. Students' influence over the work challenges them and allows them to use creativity and imagination. Thus arises a need for new knowledge and curiosity increases. In the interviews several students mentioned how good it was to use creativity and imagination in this work.

All true education is based on experience (Hartman et al, 2004). Experience consists of an active and a passive part (Dewey, 1916/1940). The active part is trying and the passive is undergoing. Activity alone does not provide any real experience. Experience includes both performance and reflection. The value of an experience lies in the quality of it (Hartman et al, 2004). The quality has two aspects, the immediate and the longer term. The immediate result of a perceived experience is either positive or negative. The longer term is linked to its effect on the ability of future experiences. If a task is hard, but does make a positive sense, this will provide the person with incentives to meet and even get through hard experiences in the future. Schoolwork is usually about direct absorption of knowledge, which is not based on personal experience (Hartman et al, 2004). Absorption of knowledge from books threatens to separate the intellectual knowledge from the more natural. Dewey says that it is objectionable to distinguish the active part of the experience from the passive. Thinking is the link between what is done and what the consequences were. Reflections in their self can also provide useful experience, but not in practice (Dewey, 1916/1940). The Storyline method gives normally no practical experience of the subject studied. Own experience provides an emotional anchor of understanding. You can read of milking a sheep, but the experience of it, the smell, the feeling of wool and the warmth from the animal gives something more. This additional value is carried within the person through life and gives an opportunity to reestablish. It gives a deeper understanding. The storyline method gives experience of another character such as how to work in a group, discussing, etc. The positive attitude of students and teachers in the interviews, however, points out that the process itself, enhanced the students desire to learn which is a very important experience. The teachers claimed the students had showed an enthusiasm they previously had never met.

Activity is important in child development, first in a random way and then increasingly targeted (Dewey, 1910/1997). Play is a way to learn. The difference between play and work is according to Dewey, that work has an objective, while game has not. Young children like to play freely, but the older you get the more important is the aim of the game. The aim is important. It must relate and be anchored in the student's own world and experience to be interesting. If knowledge is valuable for the person, he or she will take it to heart in a meaningful way (Kruckeberg, 2006). Great truths that cannot be related to the student's own world is difficult to anchor and thus become part of the student's own knowledge (Dewey, 1910/1997). Storyline gives no practical activity in the sense that the students work with things they learn about. Instead, there is activity in discussions, search for information, creation of characters and models, etc. The activity is important to be an active participant and to increase students' interest. By creating characters and story, the students become involved and responsible.

The activity of the child is spontaneous (Dewey 1900/1990). The teacher's task is to use the student's desire for activity and instead of suppressing the urge direct it to support learning. The teacher shall arouse the student's curiosity and need for knowledge and then control the activity in the right direction. An experience can be based in reflection and discussion with others and not in direct action. Such experience is characterized by careful defining and clarification of the issues, investigation of various possible solutions and comparison with previous experience. Finally, to determine whether the conclusions were accurate, the results need to be tested in a real situation. Dewey believes that mental development needs both imagination and observation. Facts should be presented to stimulate the imagination, and learning will follow. Imagination must be used to provide images of reality that cannot be displayed under the actual circumstances. To create images of reality by means of imaginations, is central to the storyline method.
Learning requires activity and starts in personal experience, but it is not limited to the person's own experience. Experience can be shared, discussed and evaluated together with others (Hartmann et al, 2004). The knowledge created by an experience is thus never completely individual. There is always some type of interaction with either the environment or other individuals. Science is studied in school on democratic grounds, to maintain and develop a democratic society (Kruckeberg, 2006). Primarily science is taught to develop a scientific attitude in students by solving problems, methodically and objectively. The method of solving problems by making hypotheses, observations and reflecting on other solutions to complex problems is important. When we begin to understand concepts in science we also begin to experience the world as a system of connections and relationships. Everything is linked. When you realize that, you also begin to see your role - how interconnected you are to the world. Constructing scientific ideas will then be a process of thinking in systems. We can control some of the systems, but all of them are part of our responsibility for our doing in and with our world.

The teacher's role is to serve the students opportunities to experiences that make the student grow (Dewey, 1900/1990). Dewey expresses it as "the child is the starting point, the center and the end." Learning is an active action of a person. It is the student and not the substance that determines both the extent and quality of learning. Teachers have the responsibility to know their students, their subjects and find activities that allow everyone to contribute, and relate to the knowledge and experience that already exists. Teachers must entice previous knowledge and experience form the students, present opportunities to new experiences and strive to arouse need and curiosity to learn more. Dewey describes the role of the teacher as a map with the coarsest structures exposed by the teacher, but in which each student choose their own path and their own details in the map screen. Education is a matter of socialization and training in childrens’ ability to participate in society in different ways (Kruckeberg, 2006). The child's personal growth requires knowledge of the society it operates in. Dewey's thoughts about the roles of students’ and the teacher's are largely in line with the storyline model. It emphasizes respect for students' work, previous knowledge and influence on learning. The teacher provides a clear structure with the help of key events and issues while the students create the details.

Interest and discipline are aspects of activities with a specific objective (Hartman et al, 2004). The interest makes someone to start the work and the discipline is needed to endure and proceed until the task is finished. Discipline or the will to carry out a job can be trained. By increasing the challenge and build on students' own experience discipline can be trained. The teacher's role is to provide information and an environment conducive to such activity. The joy, pride in what has been done and the enthusiasm of the students expressed in the interviews testify that the storyline will benefit both interest and discipline. One of the teachers was really impressed by the students’ incentives to find information.

Discussion
Basic ideas of the storyline method confirm with education of sustainable development according to Öhman (2008), Monroe (2005) and Hanson (2004). The basis in students' pre-understanding and discussions in groups provides an opportunity to highlight different solutions and ways of acting. The creation of the characters gives students the opportunity to test different susceptible views and opinions. Salner (1986) believes that the knowledge about system understanding passes three stages, dualism, multiplicity and contextual relativism. The development causes students increased insecurity about their own knowledge when they realize that there is no truth. Truth can vary and they themselves are part of the answer. The surveys showed a larger uncertainty among the students from Eskilstuna about their knowledge in agriculture and sustainable development, though the work seemed to have been better performed with deeper discussions and more obvious problematization. A possible explanation is that students’ uncertainty reflects a greater insight
of the complexity of these areas.

The intention in the Storyline method is also on many points consistent with Dewey's theory of experiential and active learning (Hartman et al, 2004; Dewey, 1900/1990; Dewey, 1910/1997, Dewey, 1916/1940). An important difference is that Dewey essentially talking about learning through personal experience of actual phenomena, while storyline is based on students experience through imagination with anchoring to reality through facts, previous knowledge, discussion, reflection and field trips. Dewey emphasizes fantasy value for learning, and imagination should be used to provide images of reality that cannot be obtained under the actual circumstances. Here is a wide consensus between the storyline and Dewey.

A storyline requires certain conditions to give good results. Students have a great freedom to act within the current framework. Teachers' attitudes are important. They must respect and value what the student already know and what they create during the work. The quality in meeting the students, respecting their opinions and ideas are crucial for the work. Teachers must also be alert and observe demand for deepening information and further assistance in finding good material. If teachers do not meet the students with respect and interest, and take their views and opinions seriously, students will not either do so.

To learn you always need a place to connect and relate the knowledge to. A place is by its very nature interdisciplinary and part of a larger context. If the aim of the education is system learning, a good starting point is well-known places, where the students have influence, is engaged and have experiences of their own. Either the place is real - a farm for example - or it is imaginative. The actual location has advantages in that it is possible to observe real phenomena and test hypotheses and theories. However, there are limitations in what is possible in a real place. A fantasy site requires a kind of reference to reality, to be really credible, but it is limitless in what can be done. Hence there are advantages and disadvantages in both methods. For the imaginative place to give a deep knowledge and understanding, the creator of the site must have their own previous experience. The image will never be better than the experience from which it is created. Through collaboration between students they can reach further than what an individual student would be able to. A storyline is a way to create a place where learning is developed through the students' imagination. The site can be linked to reality by placing it on a map from the students' neighborhood. This increases the realism and makes the picture more detailed.

The results of this project show that the intent of the method is largely achieved. Interviews with students and teachers indicate that students appreciated the work, felt they learned a lot both on substance and on other aspects that are normally difficult to reach in normal education. The students showed a clear desire to learn more, get more information and satisfaction in creating. Although the students mainly worked in the classroom, both students and teachers commented that it felt real. One student described both a frustration and a clear satisfaction in the road project. He was frustrated due to hot feelings during a consultation and argumentation about where to build a highway, and satisfied when it was never built on the land of the group. One teacher commented that she noticed how much students have learned in a role play about this highway consultation. Not just factual knowledge, but how their understanding had increased and how this became clear in their arguments. This step gave the students an insight into society function and that there are various interests. The answers from the students suggest that the aim of knowledge about agriculture and sustainable development was not reached. Students also showed very little change in willingness to refrain from travel and consumption for the sake of the environment. Chawla and Flanders (2007) argues that it is just a person's own experience, particularly in childhood, which makes people willing to take environmental responsibility. The feeling is required, only knowledge does not seem to be enough. Dewey describes the feeling as the glue between different skills (Hartmann et al, 2004).

In a storyline the story is linked to a real situation by making study visits when students have
worked for some time. The study visits offer opportunities to check the reasonableness of what they have created. For students to feel that what they have created is worth to discuss and compare with reality, it is important that it has an opportunity to be fairly realistic. Therefore, the students need available, high quality, factual material. It is important to show respect to students and their work also at the study visits. A farmer who receives visits must be informed that the visit should also include the possibility of exchanges of ideas with the farmer. The study visit should contain practical elements and the host should be prepared to answer questions and discuss thoughts and ideas with the visitors. The study visit helps the students to understand the connection between what is desirable and what is feasible.

Through imagination important ideas about a desired future is enable, but all these are seldom manageable in the short term. Sustainable development is incremental, why each action taken is negotiated, and what is feasible usually guides action. On a farm the farmer can discuss the difference between these dimensions, and thus help students to develop their understanding of the challenges facing society when moving from words to action.

If we want our children and young people to learn more about food, farming and land management, they must actively come into contact with agriculture in order to understand its role in sustainable development. Maybe the Norwegian model “The farm as a pedagogical resource” (http://livinglearning.org/), letting students participate in farm work during school days, is the most desirable way of doing this. But in the Swedish reality it is probably not realistic to be able to offer this to the majority of students, at least not on a short term basis. However, it would be desirable to implement the storyline on agriculture and sustainable development as a model to use in combination with study visits, offered from farmer organizations. It also includes development of good factual material for the students to use creating their farming enterprises. This would also offer possibility to train entrepreneurship from a sustainability perspective. Business development can apply to other areas than just agriculture and food production, such as production of energy, tourism, etc. This would also enable visits to a greater extent for older students than today. Farmer organizations in Sweden have had difficulties to reach older students. This storyline is an example of one possible way to learn more about agriculture and put farming and food production in a larger societal context. Can a system of organized and continuous study visits on the same farm be a possible way to reach the aim of better knowledge about sustainable development from a food, farming and land management perspective among our children and younger people?

References
Acquiring regional identity and shaping competence

Johanna Schockemöhle

University of Vechta, jschockemoehle@ispa.uni-vechta.de

Abstract: The concept of Regional Learning “21+” was developed, tested in practice and evaluated in the scope of this research paper on the basis of the great didactic potential inherent in learning on site in one’s own region and with the aim of promoting participation of adults, adolescents and children at regional level. The results of the evaluation verify that active learning in the region supports the development of a regional identity as well as the acquisition of shaping competence. Hence active learning in the region is effective in the sense of an education towards a lasting participatory development at a regional level.

For the purpose of evaluating the effectiveness of Regional Learning “21+”, participants in learning activities were interviewed prior to and after the activity on the basis of a two-group pre-test-post-test plan. Thus changes in the features of regional identity and shaping competence were determined. Moreover, interviews with the parties conducting the learning activities provided substantial data for establishing factors which influence the effectiveness of the corresponding measures.

Key words: extracurricular learning – regional learning – evaluation – regional identity – shaping competence – active learning

Introduction

It is the aim of the evaluation study to examine empirically whether systematically structured educational measures can contribute to promoting the participatory abilities of students in the region in the sense of the general principle of sustainable development. For this purpose, the didactic-methodological concept of Regional Learning 21+ was designed, tested and evaluated in the scope of the study. The term “Regional Learning 21+” was applied to express the orientation towards the future which forms the basis of the concept in question.

Proceedings and results of the evaluation study are to be presented and discussed here.

First of all, however, the concept of the term “region” underlying this paper as well as the focus at regional level require a brief explanation. The term “region” is interpreted in accordance with Blotevogel (1996, p. 57): Regions are thus understood to constitute more of a mental social construct rather than a physical (part) region. They are constructed by humans through political, economical, social and cultural activities and are developed and interpreted on a subjective basis. Therefore, regions are difficult to classify with regard to their geospatial features as these are discontinuous and heterogeneous, even if individual perception of the region is strongly steered by social communication.

Despite the circumstance that the term “region” cannot be grasped precisely, the region holds a great educational potential with regard to acquisition and development of competences:

- Learning at regional sites of learning provides original encounters, immediate and personal experiences as well as the acquisition of primary experiences. In combination with active learning, the original encounter on site enables students to “grasp” complex contexts of reality and to transfer this new knowledge into their everyday world (Salzmann, Mayer & Baeumer, 1995; Volkmann, 1992).

- Participative learning activities in the close vicinity of the school contribute to strengthening social interaction in the students’ own environment and make the students perceive the region altogether as a space of adventure, experience, exploration and activities. This appears particularly relevant with regard to the increasing importance of the region from a political, social and economic perspective (Blotevogel, 1996; Focalli,
Hence decision-making processes as well as operational processes are more and more concentrated at regional level, which simultaneously augments the relevance of the region for a sustainable development (Greif, 2000).

**Current state of research and theory**

The concept of Regional Learning 21+ developed in the scope of the study integrates aims, contents, methods of education for sustainable development (BNE) as well as their remarks on the significance of original and medial encounters, on didactic principles and on design of the learning environment (de Haan, 2002, 2006) into the conventional regional approach by Salzmann et al. (1995). With its statements on these criteria, the developed concept is positioned within the range of the conceptual differences and similarities of regional learning as per Salzmann et al., on the one hand, and education for sustainable development (BNE), on the other.

In the process, the core target categories both of the BNE as well as of Salzmann’s approach – shaping competence and regional identity – are adopted and linked to one another (fig.1). The basic view is that regional formation of identity and the acquisition of shaping competence are closely interrelated with regard to mutual dependence and enhancement of regional participation. At the same time, it is presumed that only the combination of both target categories generates a comprehensive ability of participation on a regional scale; remarks to this effect were also found in literature (BLK, 1999, p. 20; Deichmann, 2002, p. 24; Meyer, 1996, p. 167).

![Fig. 1. Core features of regional learning (source: Schockemöhle 2009)](image-url)

The constructs of “shaping competence” and “regional identity” are operationalized in the concept of Regional Learning 21+, primarily in accordance with previous work by Harenberg and de Haan (BLK, 1999; Programm Transfer-21, 2007) as well as Bauer (1997) and Weichhart (1990, 1999). In accordance with the socio-psychological three-component-theory, the above constructs are further classified on a cognitive, emotional and at motivational and volitional level. The thus structured normative component model of Regional Learning 21+ serves as basis for the subsequent evaluation of effect and concept (fig. 1).

Which consequences do the aims of Regional Learning 21+ have for the conception of the planned learning projects which rely on the former? Apart from the necessary selection and control criteria pertaining to contents, the methodological aspects in particular must be taken...
into account when designing the learning projects. These aspects are derived from consideration of the didactic principles of the original encounter as well as the active learning experience in an interdisciplinary context. The main features of active learning as per Gudjons (2008) and Wöll (1998) are to be listed briefly for the purpose of a clear distinction:

- Holistic learning
- Self-reliance and active participation in learning
- Goal-oriented and planned learning, the actions of which are directed at producing a plan for action
- Orientation along the experiences, interests and inclinations of the participants as well as along their everyday and/or future situations of action
- Opening of the educational institution through learning in real problem situations
- Public presentation and discussion of the outcome/product of action and/or presentation of same in the educational institution
- Reflection of the goals, course of action and effects of action as well as evaluation of the same
- Transfer of the insight won onto everyday situations / classroom situations.

The methods of active learning applied in the scope of Regional Learning 21+ are based on partner or group work as social arrangement and different forms of action which are to be selected adequately for each target group, for instance exploration, project, working at learning stations, didactic games, experiments or scenario-techniques. The carrying out of learning projects at regional sites of learning such as workshops or in a residential district of the city covers a duration from three or four hours up to several days, plus preparation and follow-up.

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The focus of Regional Learning 21+ on methods activating the learners is, by all means, judged as promising and effective by different parties with regard to the set goals (Dymant, 2008, p. 241ff., Hart, 2008, p. 19ff., Læssøe, 2008, p. 144ff., Nagel et al., 2006, p. 35; Schusler & Krasny, 2008, p. 268ff.). However, Meyer (2004, p. 80ff.) points out that the effectiveness of active learning has so far only been empirically examined in rudimentary form. Therefore, empirically founded statements on the effectiveness of active learning within the scope of Regional Learning 21+ are to be made on the basis of the evaluation study.

Method

The evaluation study is based on a triangular procedure (fig. 2) in order to empirically establish the effectiveness of Regional Learning 21+ with regard to its set aims as well as to its conditions of a successful implementation. The triangularity of methods aims at generating data along the lines of complementarity, i.e. data which supplement each other, and at enabling more detailed interpretations. A quantitative interview of 2,134 participants in regional educational measures was performed in the scope of evaluating the effectiveness, which comprises measuring and assessing Regional Learning 21+ with regard to its ability to promote participation via furthering the development of competences and formation of regional identity. The questionnaire study is based on a two-groups pre-test-post-test plan and is directed at adults (from the age of 17), adolescents (13-16) and children (9-12).

The degree of active learning of the evaluated measures served as grouping factor for forming test groups and control groups: participants in activities involving a high degree of active learning in the sense of Regional Learning 21+ made up the test group. Participants in activities which hardly contained any elements of active learning formed the control group.

In order to determine conditions – in the scope of the concept evaluation – which have proven to be particularly beneficial for a successful implementation of Regional Learning 21+,
the parties performing the educational measures were subjected to a quantitative interview accompanying each evaluated measure as well as to a qualitative guideline interview. Altogether 18 persons participated in the interview study.

Fig. 2. Parameters / research design of the evaluation study (source: Schockemöhle 2009, in accordance with Bittner 2003)

Both the designing of learning projects on the basis of the concept of Regional Learning 21+ as well as their practical testing took place in the field, i.e. in the practice of extra-curricular regional learning (fig. 3), within the EU project “ALICERA” (Action Learning for Identity and Competence in European Rural Areas; Schockemöhle 2007, p. 6-11). With regard to contents, the learning projects centered on the topic of agriculture and nutrition in an exemplary manner. Randomly selected learning projects were evaluated between August 2006 and February 2007.
Results

The results of the questionnaire study prove that Regional Learning 21+ is extremely effective with regard to the set goals. The test groups show significant positive changes in all examined features (components of regional identity and shaping competence, cf. fig. 1) following the intervention, regardless of the age groups. The feature characteristics at action level in the group of children constitute the only exception. These characteristics can only be raised slightly by Regional Learning 21+ (survey-related error due to too few items and a low level of difficulty). Slight positive as well as slight negative changes occur in the control groups though predominantly not at such a level as to be significant.

A direct comparison of feature characteristics following the intervention between test and control groups indicates that the majority of the participants in Regional Learning 21+ show significantly stronger feature characteristics than the control groups. In line with this observation, the effect size (as per Cohen) indicates that 21+ measures have a considerably stronger magnitude of effect than learning projects involving only little active learning. All in all, the above proves that the degree of active learning of a learning project greatly influences the effectiveness of the intervention.

This statement is to be substantiated by the measured changes in the characteristics of cognitive and affective features of regional identity, as an example (perceiving/recognizing the region, connectivity with the region; collected in the test scale "cognition & affection_region-specific") (fig. 4)
Fig. 4. Normative component model of the target categories of Regional Learning 21+ and empirically verified test scales (source: Schockemöhle 2009)

The following hypothesis was previously formulated with regard to the effectiveness of Regional Learning “21+”: Hypothesis of effect 1: Regional Learning 21+ brings about more pronounced characteristics in the feature cognition and affection_region-specific on a short-term basis than an extra-curricular regional educational measure involving a low degree of active learning ($H_1$: $M_{2\ VG} < M_{2\ KG}$).

Description of the results presented in fig. 5: The mean value ($M$) of children at the time of survey $t_2$ lies at $M_{2\ VG} = 1.26$ in the test group (VG) and at $M_{2\ KG} = 1.56$ in the control group (KG). The difference amounts to $M_{\text{diff VG-KG}} = -0.2987$ at an approximately same initial value at the time of survey $t_1$. This result is significant, with $p = 0.042$. The situation differs in the examined group of adolescents: Here, there is no distinct difference between the test group and the control group, with $p = 0.224$. However, it must be noted in this respect that there is no homogeneity of variance between the test group and the control group with regard to the variable. The Levene test is significant with $p = 0.003$. The remarkably high standard deviations of $SD = 1.28$ in the test group and $SD = 1.13$ in the control group as well as the remarkably high difference in mean value at the time of survey $t_1$, as it were, corroborate the heterogeneity of variance. The effect size $d$ as per Cohen is calculated in order to compare the extent of the effectiveness of a measure of Regional Learning 21+ with the effect of the learning measure involving less active learning. The results show a high effectiveness of Regional Learning 21+ on adolescents with $d = 0.63$, while the control group did not exhibit any noteworthy effect with $d = 0.12$ (cf. Bortz & Döring 2006, p. 627).

The examined group of adults displays a significant difference in mean value between the test group and the control group, with $p = 0.014$. Here it is striking that the mean value of the control group was higher ($M_2 = 2.69$) following the intervention than prior to the intervention ($M_1 = 2.55$) and that the educational intervention thus had a counter-productive effect (this must be interpreted as a dismissive stance towards the intervention in the course of answering during the post-test at point in time $t_2$).

In summary, hypothesis of effect 1 may be accepted for participating children and adults, while this hypothesis must be rejected for adolescents. Nonetheless, a considerably stronger effect was ascertained in the adolescent test group than in the adolescent control group.
Fig. 5. Effect of Regional Learning 21+ on feature characteristics in “cognition & affection_region-specific”; mean prior to (t1) and immediately after (t2) the intervention in experimental groups and control groups of children, young people and adults and p value (measured by using the independent samples t-test; source: Schockemöhle 2009).

**Hypothesis of effect 2**: participation in an educational measure of Regional Learning 21+ brings about strong changes in the feature cognition & affection_region-specific (H1: M1 > M2) on a short-term basis.

With regard to changes in feature in cognition & affection_region-specific, highly significant results were obtained in all examined test groups: In the case of children, the mean value changes from \( M_1 = 1.8529 \) to \( M_2 = 1.2647 \) (\( p = 0.000 \)), in the case of adolescents the mean value is reduced from \( M_1 = 3.5079 \) to \( M_2 = 2.5079 \) (\( p = 0.000 \)), and adults exhibit a mean value of \( M_1 = 2.5226 \) prior to the intervention and a mean value of \( M_2 = 2.3604 \) (\( p = 0.003 \)) following the intervention. In all three target groups, Regional Learning “21+” has thus entailed more pronounced characteristics in perception of the region and in regional connectivity. The hypothesis of effect 2 is therefore accepted. The age group of adolescents is particularly responsive to the intervention: with \( M_{\text{diff}} = 1.00 \), this group exhibits the greatest changes in the feature, while it must be noted that the characteristics of the feature were strikingly weak prior to the intervention. The incisive differences in the answering behavior before – after, measured by the frequency of answer per point of scale, lie primarily in the cognitive area. This means that with regard to statements pertaining to knowledge of the region, more answers shifted in the desired direction following the intervention than was the case with statements pertaining to connectivity with the region. This also applies to the answering behavior of children and adults. Intended changes were also achieved in the affective segment, however these ranged on a lower scale than those in the cognitive area.

**Influence of personal givens**

The personal givens of the test subjects with regard to shaping competence and regional identity were recorded directly prior to the intervention in order to examine whether the strength of the characteristics prior to the learning projects influences the effectiveness of the interventions. In the process, the auxiliary variables \( X_{\text{split1}}, X_{\text{split2}} \) und \( X_{\text{split3}} \) were formed in each age group. These variables are based on a frequency analysis. The splits are divided into three levels and each contains the lower, median and upper tercile of the respective test group and control group, dependant on weak (split3), medium (split2) or strong (split1) characteristics of the test subjects in the corresponding variables. The data which were generated by quantitative means clearly indicate that the strength of the feature
characteristics which the participants already show prior to an intervention has considerable influence on the effectiveness of the 21+ projects. Hence participants with medium to weak feature characteristics gain more effective support from the learning projects than those who already displayed great shaping competence and regional identity to begin with – this applies throughout the age groups and variables. This fairly unsuccessful appeal to the comparatively “competent” participants manifests itself in the circumstance that only slight positive changes in features were ascertained among this group of persons after the intervention and that even negative changes in features were partly recorded (fig. 6). As it cannot be presumed that the educational measures induce a loss of or decline in competence, skills, attitude, etc., thereby bringing about the weaker feature characteristics measured here, it must rather be presumed that the events and activities generated boredom, resentment and rejection in the participants with strong features, which was reflected in their answering behavior in the written survey.

Fig. 6. Characteristics in cognition & affection_general prior to (t1) and after (t2) the intervention in the split test group of adults (17 and older); mean and effect size d according to Cohen (source: Schockemöhle 2009).

Assessment of the effectivity of the intervention by the interview partners

These and other results of the questionnaire study were compared to the data of the interview study. It was ascertained that the answers of the parties carrying out the learning measures (table 1) only partly corresponded with the results of the participant survey. Thus the interview partners ascribed much influence on the effectiveness of the intervention to the didactic structure – and hence also the degree of active learning involved. It must be noted that this finding is hardly reflected in practice. According to the interview partners, active learning only takes place rather infrequently; guided tours and classroom discourse steered by questions dominate as method of instruction in extra-curricular regional learning projects.

Table 1. Factors which exert influence on the effectiveness of interventions according to statements from interview partners (N = 18, open question, multiple answers possible, frequency of response in percent of interviewees; source: Schockemöhle 2009)

<table>
<thead>
<tr>
<th>Ranking of influencing factors</th>
<th>Frequency of response (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Place of learning / original encounter</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The data of the interview study, however, predominantly compliment the results obtained by quantitative means. In part, they also contradict one another. This pertains in particular to the influence of the extra-curricular site of learning, i.e. the influence of the original encounter per se, on the effectiveness of the intervention. All interview partners proved to be convinced that personal, immediate and intensive experiences at regional sites of learning, such as farms, already induce considerable changes in features under study. The results of the questionnaire study modify this assessment in that they explicitly prove that learning on site is only effective in combination with active learning in terms of the set goals.

**Assessment of the concept of Regional Learning 21+**

On the basis of the evaluation results and the criteria of the concept development, the concept itself is to be assessed. It is to be determined whether the theoretically devised concept confirms itself or must be modified at least in parts. Only a selection of the insights gained can be presented at this point.

- **Assessment of the aims:** Learning projects which were developed on the basis of the concept of Regional Learning 21+ are able to successfully promote shaping competence and regional identity in participants of all age groups. Younger participants tend to show stronger changes in features than adults in the process. In addition, the notion that formation of regional identity and the acquisition of shaping competence are closely interrelated is empirically verified by way of correlation tests. With regard to the influence of personal givens on reaching the set goals, it must be noted that this concept has so far not sufficiently taken into consideration the support of individual educational needs of the participants. Corresponding specifications must be made along with suggestions for differentiation, for instance with regard to goals, contents and methods.

- **Assessment of the methods:** The theoretical emphasis on methods inducing active learning proves to be justified. The degree of active learning strongly influences the success of an intervention. The discrepancy established in this connection between theory and practice should not lead to a softening of the concept but should rather initiate increased efforts to give active learning more prominence in the practice of extra-curricular regional learning.

- **Assessment of the significance of the original encounter:** The original encounter is overestimated as influencing factor in the concept. The evaluation results clearly show that the immediate, personal experience is linked to active and self-reliant acquisition of knowledge/competence in its intensity and that it will therefore only unfold its potential in combination with active learning. It is necessary to modify the concept by emphasizing the necessity of giving the original encounter a purposeful design. It appears expedient to design/develop and distribute material for teaching and learning which, among other features, promotes active and self-reliant learning on site.

**Outlook**

These and other assessments give rise to a process of combining and condensing the findings into thesis-like guidelines of Regional Learning 21+ which occupy the function of quality criteria. It must be stressed at this point, for instance, that regional learning will only successfully contribute to the acquisition of shaping competence and formation of regional
identity if the learning on site is oriented along the didactic-methodological principles of active learning and adopts a problem-based as well as a system-based and situation-based approach. In addition, participants must be supported individually in accordance with their given personal level of shaping competence and regional identity.

Guidelines such as these in particular serve to pass on the insights gained in the practice of extra-curricular regional learning as presented in this paper. The guidelines are to be gathered in a “toolbox”, along with further teaching and learning material which is yet to be developed and which systematically takes up the aspects of differentiation and active learning, as well as measuring instruments which enable self-evaluation of learning projects. This toolbox shall then be made available to parties carrying out learning projects. This proposition strives to support and facilitate transfer of the results into practice.

Several content- and method-related implications emerge with regard to the significance of the gained insight for future empirical research on teaching and learning:

- The evaluation results firstly indicate a gap in the general field of educational research. Hence no current studies exist on the integration of extra-curricular regional learning into formal as well as non-formal education. However, if forms of learning in the region wish to design their contribution to lifelong learning effectively, information pertaining to the extent of integration to date, obstacles and chances as well as best-practice models is indispensable.

- This study also indicates the need for further work in the area of competence research. An examination of the contribution of Regional Learning 21+ to the development of a comprehensive learning competence – in particular to a conscious awareness of personal and social behavioral dispositions, initiated in particular by original encounters and social interaction in the region – constitutes a task for subsequent studies.

- In the scope of investigating the emerging conditions of skills and abilities as a target category of school education in general and environmental awareness education and BNE in particular, it must be further examined which factors influencing actual behavior – apart from knowledge and stance/attitude – may be changed by educational measures. In this connection, it appears particularly interesting to examine motivation as factor(s) in more detail and to determine how learning projects must be didactically structured in order to bring about intended changes in the students’ skills and abilities (cf. Otero & Mira, 2003; Gooch et al., 2008; Simovska 2008, p. 65ff.).

- As the changes in shaping competence and regional identity in learners have been examined within a fairly general framework in this empirical study, it appears necessary to examine the dimensions and stages/forms of the individual components of shaping competence and regional identity in more detail in the future in order to gain in-depth knowledge enabling optimization and differentiation of age-specific support of the participants (cf. Jensen & Schnack, 1997; Nikel & Reid, 2006, p. 137-142).

- The substantiated connection between regional identity and shaping competence demands further research with regard to the question of whether shaping competence can be promoted more effectively in Regional Learning 21+ on account of the verified feedback effect than in the case of educational concepts which bear no relation to the region (cf. Chawla, 2008, p. 99).

**Literature**


Johanna Schockemöhle


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Quality development and evaluation
A practical example: Ökomarkt e.V. Schule & Landwirtschaft

Tanja Neubüser\textsuperscript{a}, Christina Zurek\textsuperscript{b}, Martin Grunert\textsuperscript{c}

\textsuperscript{a}Tanja Neubüser, schule-und-landwirtschaft@oekomarkt-hamburg.de
\textsuperscript{b}Christina Zurek, schule-und-landwirtschaft@oekomarkt-hamburg.de
\textsuperscript{c}Martin Grunert, schule-und-landwirtschaft@oekomarkt-hamburg.de

Abstract: Since 2005, approx. 7,000 kindergarten children and students have been visiting ecological farms, processing plants and marketing enterprises in and around Hamburg in the scope of the project “Bio für die junge Generation - Schule & Landwirtschaft” [“Organics for the Young Generation – School & Agriculture”]. The events are organized by Ökomarkt e.V., which has been involved in the field of environmental education for more than 15 years. Partner organizations in Thuringia, Saxony and northern Lower Saxony have adopted the event concept and have put it into practice in their respective contexts. The underlying idea is to provide children and adolescents with access to organic farms, processing sites and places where food products are traded, thereby enabling them to grasp and comprehend the ecological ties of their surroundings – at the authentic site – by way of individual perception, using all senses.

With an increasing number of events in the scope of the project, the question arises as to the effect of the educational measures on the children and adolescents as well as on teachers and educators. The article describes different options of quantitative and qualitative methods in order to survey the response to the events. The project is supported by the Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz [Federal Ministry of Food, Agriculture and Consumer Protection] in the scope of the federal program Ökologischer Landbau [Ecological Agriculture] as well as by foundations such as Software AG Stiftung or the Norddeutsche Stiftung für Umwelt und Entwicklung [North German Foundation for Environment and Development]. The sponsors also expect corresponding quality assurance measures and evaluation as evidence for the invested funding.

Key words: evaluation, environmental education, farms as sites of learning, ecological agriculture, sustainable consumer behavior

1. The project

The project “organics for the young generation – school & agriculture” is a cooperative project which involves four parties. The three project partners Ökomarkt e.V. Hamburg, Ökolöwe Umweltbund Leipzig e.V. and Thüringer Ökoherz e.V. have been working together since October 2005; BioLuna e.V. (northern Lower Saxony) joined the project in 2008. The entire project was developed by Ökomarkt e.V. in Hamburg and is coordinated from there.
Fig. 1. Project partners “organics for the young generation – school and agriculture”

1.1 Aims and concepts

It is a feature of the project that its aims are linked to one another; aims which pertain both to working with children and adolescents as well as to the further education of multiplicators. In this connection, the following points merit particular notice:

- Visiting businesses in food production with the notion of systematically broadening the personal scope of experience and the individual realm of experience of children and adolescents as opposite pole to second-hand experiences (picture books, television, school, computers, etc.)
- Teaching the basics of sustainable food production and nutrition
- Learning through “positive example”, the “Zukunftsmodell Ökologischer Landbau” ["Model of Ecological Agriculture for the Future”]
- Reduction of the alienation between city and countryside by personal experience
- Spreading the knowledge related to ecological agriculture through this innovative form of public relations for the affiliated enterprises
- Use of existing locations (aspect of sustainability) as sites of learning, and not creating a “new site”, for instance by designing a special school farm.

Kindergarten groups and school classes as well as classes in vocational training visit one or several ecologically operating farms, gardening centers, bakeries, butchers or sites selling organic products (farmer’s markets, organic stores, discounters).

The immediate experience, handling and active participation in the stable, with the animals or on the vegetable field is at the center of the project. The methods and aims of ecological agriculture are developed on site along with the groups, both in theory and in practice. The methods and contents of the activities are individually adapted to the age group, the seasonal context and the educational context of the student or kindergarten groups. The groups are familiarized with aspects of sustainable food production, environmental protection and protection of resources at individual locations on the farm and/or the enterprise and these aspects are put into relation with personal consumer behavior.

It is the basic assumption that creation of emotional bonds by way of personal experience is essential for the target group. Treatment of the topic on a cognitive basis is supported by the experience on site. Hence acquired knowledge may be transformed into action.

The topic of nutrition is tied to the topic of ecological agriculture. Even if children and adolescents are not in a position to immediately influence the consumer behavior of their parents (or should not attempt to do so without further reflection), they are given the option of altering their food habits already at kindergarten age. Immediate action is possible here.

1.2 Target groups and forms of activities and events

The participating groups include kindergartens, elementary schools, middle schools, junior and senior high school classes, trainees (educators, cooks, nurses) as well as university students from different specialty fields such as environmental engineering, education or agriculture.

All four partners offer activities consisting of one and more events in their region. Activities comprising several parts, for instance, take the form of a series of activities over three, five or eight days along the value-added chain, of activities consisting of several events in the scope of fulltime education at schools, of periodical activities throughout a vegetation period or also the four-seasons-program, i.e. one activity per season with the same group.

Altogether approximately 25,300 children, adolescents and multiplicators were reached in the regions of Hamburg, Leipzig, Thuringia and northern Lower-Saxony from January 2008 until December 2009.
It is striking that in particular kindergarten groups and elementary schools make use of the offered activities and events. According to the teachers, it is more difficult to disrupt the schedule of junior and senior high school classes for the purpose of activities covering the entire day. Moreover, the reduction of the number of school years to twelve has reduced the leeway for more complex school projects.

2. Quality assurance and evaluation of the activities and events

In the region of Hamburg, the salaried staff members of Ökomarkt e.V. handle more than 350 activities per year at nine affiliated organic farms and gardening centers with varying production (five farms, three vegetable gardening centers, one fruit-growing enterprise), at six processing plants (four bakeries and two butchers) and at several marketing locations (organic farmer’s markets, organic supermarkets, discounters).

The activities are carried out at the affiliated enterprises either by the manager, by the staff of the farms, temporary employees or the salaried project staff. A set of measures was developed in order to ensure the quality of the activities.

At two farms and at the marketing locations, the salaried staff members of Ökomarkt e.V. lead the groups. More complex school projects are generally overseen by the salaried staff members in order to establish a connection to the various sites of production, for instance. In the case of farms on which the activities are led by the managers or temporary employees, the salaried staff members accompany the groups at regular intervals and give the parties in charge of carrying out the activity feedback with regard to contents and methods. Every half year managers and temporary employees meet at one of the affiliated enterprises and are trained by the salaried staff members in one focal topic.

Communication with the partners in other federal states takes place on the basis of the same model. If required, semi-yearly meetings are also complemented by accompanying individual activities.
Apart from these training measures, a questionnaire survey was to provide direct feedback by the groups and uncover strengths of the project as well as weak spots in organization and contents of the activities, if any.

2.1 Formative evaluation of the activities and events by questionnaire
All four project partners of “organics for the young generation – school & agriculture” carried out a comprehensive formative self-evaluation from May to December 2008. Formative evaluation refers to an assessment and improvement of a process and takes place within pre-defined periods of time and in accordance with pre-defined criteria. In the process, an ongoing program is manipulated systematically in order to best reach the previously established goals (based on Bhola, 1990).

It was the aim of the evaluation to verify whether the object of evaluation “activities” was designed in so appealing a manner as to make ecological agriculture and processing accessible to the participants on a cognitive and an emotional basis. Therefore, both the organizational steps of project implementation as well as the results and effects of the activities were covered by the evaluation.

2.2 Definition of the criteria
The following criteria were established for the survey in the scope of the evaluation:
- Means of spreading information about the topics and activities being offered
- Satisfaction with the general organizational framework of the activity
- Satisfaction with the course of and contents of the activity
- Demonstration of the particularities of economic agriculture
- Facilitation of special insights and unique experiences
- Satisfaction with the manner in which the activity was suited to the preparation and follow-up course work of the topic.
- Satisfaction with the classroom material sent out by the party organizing the activity.

2.3 Choice of method and data collection
Two questionnaires were devised. One questionnaire consisted of two pages for the educators/teachers who participated in the activity with a kindergarten group or a school class as well as three questions for the party responsible on site, i.e. for the party carrying out the activity. Student interviews were waived deliberately. The age span within the target group would have demanded that several questionnaires and types of questions be devised. Due to the high number of participants, a full survey would moreover not have been feasible. Nonetheless, the student perspective was taken into account via the educators’ appraisal of same in several questions.

Following the activity, the questionnaires were filled out by the educators as well as by the “mentors” on site. These proceedings ensure a high return rate but have the disadvantage that the students’ reactions in the course of a later reflection of the activity cannot be recorded (i.e. can only be recorded in the case of groups which participate in several activities).

The questionnaire was devised with this survey method in mind. Importance was attached to posing questions which are brief and encourage reflection. To a great extent, scale-questions were used, which demand that the person filling out the questionnaire first of all take a general stance, followed by deeper and more open questions about the reasons for said stance. Closed questions enable a quick and standardized processing of the questionnaires. With a length of two pages and the kinds of questions mentioned above, it takes the educator approx. five minutes to fill out the questionnaire while the students prepare for departure.
When devising the questionnaires, it must be ensured that the questions are suitable for all four project partners. The project partners partly have a very different general set-up with regard to the cooperating farms and operational procedures. Therefore, a balance had to be found between posing questions that were as exact as possible, on the one hand, and ensuring that each question was transferrable onto each of the project partners, on the other hand.

As mentioned above, the party carrying out the activity also gave his/her opinion and assessment. In connection with settling the accounts for the activity with the respective project partner, the responsible party on site answered the following questions:

- “How well did the group participate?”
- “How was the cooperation with the teacher/educator?”
- Additional open comments on the activities

This dual assessment of the same activity from the point of view of the party carrying out the activity and that of the participants makes it possible to quickly identify any problems which may arise. If, for instance, the perception of the party carrying out the activity differs considerably from the participating leader of the group, it is important to determine the reasons for this discrepancy.

2.4 Evaluation of the data

The filled-out questionnaires were collected from the farms at the end of each month by the parties carrying out the activities along with the settlement of accounts and were sent back to the project partners. Ökomarkt e.V. provided three partners in Leipzig, Thuringia and northern Lower Saxony with an evaluation matrix so that the data could be entered on a regular basis. The electronic data were complemented by data in paper form for the archives. After the end of 2008, each partner evaluated their electronic data and wrote a report on the main insights and conclusions. Ökomarkt e.V. used these documents to write the overall evaluation report. The data were evaluated for each project partner and examined for similarities and differences in order to recognize structures.

2.5 Communication of the results and formulating consequences

The four project partners met in order to interpret the data, discuss the results and draw conclusions along with consequences for their further work. In the process, strengths and weaknesses of the project of the respective region came to the fore. The experiences of the other partners were taken up and means were debated of minimizing recognized weak spots in day-to-day business in a realistic manner.

2.6 Examination of selected questions of the questionnaire for the project partner Ökomarkt e.V.

In the following paragraphs, some of the results will be presented from the survey of teachers and educators in the region of Hamburg, i.e. from activities and events of the Ökomarkt e.V. Some selected questions will be considered in more detail in order to explain the thoughts behind them in the course of devising the questionnaires. 159 filled-out questionnaires were returned to Ökomarkt e.V. by teachers and educators in the course of 237 activities within the evaluation period from 01 May to 31 December 2008. This corresponds to a return rate of 67%. The complete questionnaire is attached as appendix 1.

Question 2:
How satisfied were you with this activity altogether?
Please mark the scale with an “X” in correspondence with school grades.

++ 1 2 3 4 5 6 --
Aim of the question:
This question aimed at receiving a clear assessment of the activity as a whole from the teacher. Hence the teacher takes a stance by way of grading the activity as a whole before the subsequent questions go into individual aspects of the activity. Moreover, the teacher's overall impression is very telling, even if specific aspects taken up in the questionnaire are supposed to uncover any deficiencies.

Evaluation/Result:
123 teachers graded the event in general with the mark “1” (very good). 32 teachers graded the event in general with the mark “2” (good) and four teachers with the mark “3” (satisfactory). The resulting average grade is 1.25 with regard to the overall satisfaction of the teachers with the respective activity which they accompanied.

Question 4:
How satisfied were you with the course of and the contents of the activity?
- Suitability of manner of address to age and target group
- Treatment of the arranged contents
- Level of emotional appeal (learning with all senses)
- Transfer of knowledge

Aim of the question:
In this question, the four core aspects are treated individually which are essential, in the opinion of the staff members of Ökomarkt e.V., to the success of an activity in the field of environmental education as well as to achieving the goal of said activity being “designed in so appealing a manner as to make ecological agriculture and processing accessible to the participants on a cognitive and an emotional basis.”

Evaluation/Result:
The evaluation of the suitability of manner of address to age and target group produced an average grade of 1.22; the treatment of the arranged contents an average grade of 1.26; the emotional appeal produced an average grade of 1.33 and the transfer of knowledge of 1.35. This illustrates the strengths of Ökomarkt e.V., as between 70% and 80% of the appraisers graded these core aspects as “very well implemented”. In view of the circumstance that Ökomarkt e.V. hosts activities for participants ranging between four years of age and university students, the grade of 1.22 in the suitability of the target group address demonstrates a particular strength. It moreover becomes clear that “the farm as site of learning” is suitable for all age groups.

Specific question 5:
Which were the two most interesting experiences during the activity?

Aim of the question:
This question was aimed at finding out what the teachers, who observed their students, considered to be essential components of the activity. Implications for future work/projects may result from this question with regard to which experiences should be retained and/or intensified and expanded.

Evaluation/ Result:
The answers were clustered for an evaluation of this open question:

Table 2. Answer cluster question 5
It becomes obvious that it is in particular the immediate experiences with animals on the farm which make the activities interesting. Many children growing up in cities no longer have contact with larger animals, in particular, in their daily lives. The time in which participants encounter animals directly is an important part of exploring the farm. Roughly every sixth participant also mentions plants or vegetable products as a central aspect. These entries clearly indicate that emotional experiences are also possible and very important in the plant area.

Cooking and baking activities should not be neglected with a quota of 7% of the entries. This combination and diversity in interesting experiences enrich various school topics and make it attractive to individual groups to book several activities.

**Question 7:**
Which insights and experiences do you believe that the participants will take home with them from the farm visit?

**Aim of the question:**
This question aimed at finding out whether the participants take their insights and experiences home with them and whether the chance therefore exists that they may map aspects of what they learned and experienced onto their daily lives. It is difficult in general to determine the effect that activities have on action, and it is very difficult to measure whether a change in awareness has occurred. However, it is possible to measure whether an awareness for something was created.

**Evaluation/Results:**
This open question produced the following clusters:

Table 2. Answer cluster question 7

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number</th>
<th>Answers in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiences with animals (milking, petting, observing, etc.)</td>
<td>101</td>
<td>32.27</td>
</tr>
<tr>
<td>Feeding the animals</td>
<td>62</td>
<td>19.81</td>
</tr>
<tr>
<td>Harvesting</td>
<td>25</td>
<td>7.99</td>
</tr>
<tr>
<td>Experiences with plants</td>
<td>24</td>
<td>7.67</td>
</tr>
<tr>
<td>Cooking and baking activities</td>
<td>22</td>
<td>7.03</td>
</tr>
<tr>
<td>Riding a tractor</td>
<td>20</td>
<td>6.39</td>
</tr>
<tr>
<td>Sampling/tasting</td>
<td>12</td>
<td>3.83</td>
</tr>
<tr>
<td>Touring the bakery</td>
<td>11</td>
<td>3.51</td>
</tr>
<tr>
<td>Others</td>
<td>23</td>
<td>7.35</td>
</tr>
<tr>
<td>Not specified</td>
<td>13</td>
<td>4.15</td>
</tr>
<tr>
<td>Total</td>
<td>313</td>
<td>100</td>
</tr>
</tbody>
</table>
In general, the accompanying parties named very specific but also very different situations with the classes so that it was rather difficult to cluster the answers. Individual experiences of children and adolescents with animals and plants were named most frequently. Altogether approx. 13% (9.23% + 3.69%) of the answers make explicit reference to the circumstance that the way in which ecological agriculture is viewed has changed, for instance “cultivation/job positions – cumbersome work! Quite understandable why organic products are more expensive”. The specific entries make clear that many of the activities which exceeded kindergarten age were able to encourage an “identification of one’s own position” (quote). 12% (6.64% + 5.54%) answered that one insight which the participants take home with them is having gained the ability to better relate to their food products, for instance “milk does not come from a beverage carton.” and “food products (insight that what we are eating has been alive)”. 5.5% explicitly mention adequate keeping of animals which was left both a cognitive and emotional impression on them. In particular the “do it yourself” aspect is an important factor: “Contact with the animals: petting them, milking, feeding, feeling the fur, the udder, the tongue”.

2.7 Answers of the parties carrying out the activities
The parties carrying out the activities provided feedback on 212 of 237 events which took place during the evaluation period. The question of how well the group participated was answered with an average grade of 1.7. The cooperation with the teacher and/or educator was graded as 1.4 on average. The open comments given in this respect were clustered and thus provide an additional image. The interest and/or behavior of the group or the accompanying party received a negative mark in 18 of 179 additional comments. This low number of negative grades reveals that there were hardly any conflicts or negative atmosphere during the activities. The staff members carrying out the activities on site interact with the groups in an open and positive manner. They are enthusiastic about their job, which is registered accordingly by the participants. The evaluation shows that the statements of the teachers/educators are reflected in those of the parties carrying out the activities, which constitutes a desirable agreement.

3. Conclusions of the formative evaluation by questionnaire
Altogether, the intensive evaluation of the activities at the cooperating enterprises for a limited period has proven very worthwhile. It must be stressed that the collection and evaluation of data requires resources. If these operations are to be carried out next to the daily project work, a successive data entry (for instance on a monthly basis) would recommend itself in any case. The evaluation of the results made sense from a general point of view, because it furthered all project partners’ ability to jointly interpret the results in the course of a meeting. The predominantly positive results of the survey encourage all staff involved to further invest their strength and energy in the project, in a contented and highly motivated manner. The survey yielded the following conclusions for the work of Ökomarkt e.V., which were to be implemented the following year:
- The work of Ökomarkt e.V. at its different activity locations will by and large be continued as before since the feedback is very positive.
- Applications can be boosted at the affiliated farms and processing plants, for instance at the farm shop and by way of press relations.
- It is concluded that teachers of almost all subjects are to be addressed with regard to advertising events.
Only a few enterprises could slightly expand the participants’ possibilities of becoming active themselves at certain times of year. However, this must suit the farm context. This aspect requires further deliberation, since an appeal to the emotions is often linked with action of one’s own. The principle of becoming active oneself should apply to the area of animals and plants as well as to tasting, cooking and baking activities.

It is also interesting that the main topic of “nutrition” plays an important role with almost 12 % of the references. It therefore remains important that the staff members at the farms link the experiences on site to the children’s own eating habits and that activities and events such as “from bread to grain” should continue to be offered including wholemeal baking activities.

It is important that supporting material (suggestions for teaching, master copies, etc.) for the purpose of preparing for and following up on the visit to the farm should be pointed out to groups enquiring for the first time. The teachers and educators who made use of this “service” by Ökomarkt e.V. looked upon it favorably throughout.

The context in which the visits to the enterprises take place is very heterogeneous. It is interesting that project weeks play a rather minor role with less than 3% of the references. This means that the accompanying material devised for preparation of visits / follow-up course work must cover a preparatory range from one lesson to lessons in several consecutive weeks.

The form of the questions and the length of the questionnaire have proven of value in practice; the statistical evaluation, on the contrary (entry of data and computation) is too work-intensive to be integrated into the ongoing operations as an inherent part in its current form. The statistic of activities and events and the measures described further above in section 2 for the purpose of quality assurance are continued.

7. Future perspectives: Feedback in the form of group work results

The survey carried out with the teachers and educators can only indirectly reflect the students’ perspective. Therefore, the Ökomarkt team discussed methods intended to reflect the effect of the activities on the children and adolescents.

Ökomarkt e.V. is considering testing a qualitative method more systematically in the year 2010/2011 with which the staff members have already gathered positive experiences in the previous years. Educators and teachers are to be strongly encouraged to perform follow-up course work after visiting the farms and to send the results of this group work to Ökomarkt e.V. The “serious character” of this task (for instance in the form of “let’s write a letter to Ökomarkt e.V.”) motivates the students.

The circumstance that third parties (experts, institutions, other classes) will look at the results motivates the students to handle information, perceptions and conclusions in a serious and thorough manner. At the same time, this task improves the children’s and adolescents’ expression skills, and ultimately such proceedings emphasize the fact that the visit to the farm was not only a “pleasant outing” but a learning situation which may expand the children’s competences in numerous ways.

As the three examples further below show, the work results award a sound insight into which aspects particularly affected the children. In the case of older students, the “information gaps” point out which aspects must yet be expanded thematically or must be explained better.

Example 1: elementary school
Philip was apparently particularly impressed by the potato sorting machine. While the activity took place on site, the apprentices were busy filling potato sacks in the barn for the farm shop. Philip observed the sorting operations very closely. All hoppers (sorting start, large crate for sorted-out potatoes and the high hopper which the sorting conveyor feeds with produce ready to be bagged) are depicted. The man on the picture is standing in the right place to manually sort out the “bad” potatoes. A sack of bagged potatoes is also visible and of course the entire operation is not performed outside but under the large modern (square) roof of the farm.

Fig.2. Philip, first grade

Presuming that Philip has never before seen a sorting machine in his life, this picture confirms that his realm of experience has expanded due to the visit to the farm and that he not only saw the machine but was already able to understand its complex function. He now knows that not all potatoes are of the same size when they are harvested from the soil, but that they must be sorted. He observed which quantities were harvested and how a machine can contribute to facilitating the work.

Mareike – also a first grader – is saying thank you for the visit to the farm, the tea which was offered and the eggs. The visit appears to have motivated her to eat bread and drink milk. She apparently connects these two staple foods with the farm. In some way her experiences on site have thus affected her food habits, i.e. her awareness in this regard.

Fig.3. Mareike, first grade

Example 2: middle school
These results show a positive stance towards the student’s experiences and indicate which aspects were important to the children. A systematic form of interpretation of the student material in class sets may provide details with regard to the activities and events as well as to the preparation and follow-up course work. For this purpose, this form of interpretation would require further methodological development in the course of the project.

4. Outlook

The more comprehensive a project for the purpose of environmental education is, i.e. the more parties participate in the activity with kindergarten groups and school classes, the more expedient it seems to record the satisfaction of the participants and the involved staff members by way of standardized procedures. A comparison of the assessment by participants in the activity and by the party carrying out the activity (staff member) may serve to capture the overall satisfaction with the organization of, course of, and contents of the activities. The special features at the different activity sites can only be recorded to a limited extent by way of standardized procedures which are moreover applied in four states. The positive results of the evaluation have increased the staff members’ motivation. In the external communications relating to this project (i.e. in press relations and in the scope of financial acquisition) the evaluation was used repeatedly.

The question as to the effect of the activities on the target group was discussed repeatedly. It has proven worthwhile to indirectly record the student perspective by way of the assessment of the accompanying educator as a full survey would not be feasible at more than 12,000 participants a year. A random survey would also be very time-consuming due to the large age span within the target group (ranging from kindergarten children to university students). It is therefore being debated to evaluate student material (results of the follow-up course work) in the future in order to draw conclusions with regard to the cognitive and emotional
effects of the activities. A methodological approach for this purpose is yet to be developed further.

**Literature**

Learning on the farm between
Social Farming and Circus Farming –
Lessons from the European Community of Practice
Farming for Health

Thomas van Elsen

"Social farming" is being developed throughout Europe: farms which put the "multifunctionality" demanded by the policy makers into practice, contributing to the creation of jobs in rural areas through the creation of social services. Social farming includes agricultural enterprises and market gardens which integrate people with physical, mental or psychological disabilities; farms which provide opportunities for the socially disadvantaged, for young offenders, those with learning disabilities, addicts, the long-term unemployed and active senior citizens; school and kindergarten farms and much more besides. Social farming includes elements such as provision, inclusion, rehabilitation, training and a better quality of life. "Learning on the farm" is an important component of this. This paper presents some examples of innovative farms.

The workshops run by the working group's scientists and practitioners promote the mutual learning process and advance social farming through joint campaigns and projects. In addition to the website www.farmingforhealth.org, two collections of papers have been published and research projects set up: the COST Action 866 Green Care in Agriculture and the EU research project SoFar (Social Farming, www.sofar-d.de). Germany has some catching up to do in a European context. The "Witzenhäuser Positionspapier zum Mehrwert Sozialer Landwirtschaft" (Witzenhausen position paper on the added value of social farming) calls on decision makers in business, administration, politics and the public domain to promote social farming in Germany.

National working groups have been established in several countries such as the group founded in October 2009 at the conference entitled "The practice and aims of social farming in Germany". Their objective is the exchange of ideas and support for the development of social agricultural enterprises. The aim is not institutionalisation, but rather an informal association which is connected by a mailing list and in which those taking responsibility for the process undertake various projects.

This contribution provides an evaluation of what has been achieved in Europe so far. Visits to enterprises in other European countries highlight the challenge of quality assurance, along the lines aimed at by BAGLoB (Bundesarbeitsgemeinschaft Lernort Bauernhof e. V.) in Germany. "Learning on the Farm" is developing between the conflicting interests of social farming and circus farming.

Keywords: Social farming, multifunctionality, quality assurance, Green Care, community of practice, example farms

Introduction

From 22-24 April 2004 on a farm in Vorden, the Netherlands, an international meeting entitled "Farming for Health" took place which was to have repercussions. The workshop took place on the farm "Urtica – De vijfsprong" which had been run biodynamically since 1984 and today comprises two families and 14 clients who help in five different work areas. People with mental illness are also integrated in the farm and take part in all the farm activities in the course of a two year therapy programme. The topic motivated scientists and practitioners from different disciplines and from a number of European countries to become involved. In the course of the meeting the variety of situations in the individual countries of Europe became apparent:
in the Netherlands, for example, there are several institutions engaged full-time in research and advice in this area and a spirit of optimism prevails. In other countries the level of knowledge is inadequate;

that Farming for Health is interpreted in very different ways: amongst the contributions to the conference "gardening therapy" and "care farms" predominated, with some therapy approaches (e.g. drug rehabilitation). There were presentations on topics such as "the elderly" and city farms, but no mention of "school farms" at all;

that the philosophy is very hard to describe precisely. One English participant made the criticism that Farming for Health is an inappropriate concept ("Farming today means exploitation of the land") which was countered by the suggestion that this provided a good opportunity to enhance and redefine the concept of Farming by means of a social component (and not merely to interpret it as the production of marketable products)! Most countries talk about Care Farms but in e.g. Flanders and the Netherlands the term is Groene Zorg ("green care"), which was considered by most participants as "too far removed" from the agricultural production element. It became clear how difficult it is to draw a line between activities where the "care aspect" is so much to the fore that the agricultural activities are only an accessory. The opposite is the case for agricultural enterprises which integrate one or more people in need of supervision as an additional task, where the Green Care tends to form a supplementary activity to the agricultural enterprise but not its main focus;

that most participants came from agricultural or scientific backgrounds: in addition to practising farmers, the disciplines of soil science, domestic animal ethology, agricultural economics and landscape ecology were represented. In contrast, the medical therapeutic side was scarcely represented and even the subject of the "farm as an experiential environment" was at best a marginal topic.

Since 2004 further conferences have taken place in Wageningen (NL, 2005), Stavanger (NO, 2006), Ghent (BE, 2007) und Pisa (IT, 2009) with steadily increasing numbers of participants. Farming for Health has developed into an interdisciplinary European community of practice with its own website (www.farmingforhealth.org) and participants from the science and practice of social farming. The Community of Practice members have initiated additional networks and projects: the Norwegian Bjarne Braastad, the COST Action Green Care in Agriculture and the Italian Francesco Di Iacovo, the project SoFar (Social Farming – social services of multifunctional farms). What is the current status of social farming in Germany and Europe and what are the areas of development and obstacles? Further, in the context of Social Farming, Farming for Health and Green Care, what role does "Learning on the Farm" play? What are the challenges for the future?

Social farming in Europe and Germany

The diversity of social farming in Europe

"Social farming" is coming into use as a term for farms which put the "multifunctionality" demanded by the policy makers into practice, contributing to the creation of jobs in rural areas through the provision of social services. A great diversity exists: Care Farms in the Netherlands where the farmer's wife has gained a qualification in social education and works from home supervising clients, thus contributing in no small measure to maintaining the farm income. Farms in the mountain regions of France where children and young people with disabilities can live and experience nature and farming, and abandoned cultural landscapes are rejuvenated. And "red and white cooperatives" in Italy which were originally set up on socialist or religious foundations with almost identical aims and which are involved in the integration of the mentally ill and disabled in agriculture.
Social farming includes agricultural enterprises and market gardens which integrate people with physical, mental or psychological disabilities; farms which provide opportunities for the socially disadvantaged, for young offenders, those with learning disabilities, addicts, the long-term unemployed and active senior citizens; school and kindergarten farms and much more besides. Social farming includes elements such as provision, inclusion, rehabilitation, training and a better quality of life. "Learning on the farm" is an important component of this.

The workshops run by the scientists and practitioners of the community of practice Farming for Health promote the exchange of information about new developments and research projects and results in the individual countries, support reciprocal learning and advance social farming through joint campaigns and projects. Two collections of papers have now been published which are available individually as pdf files from the internet (Hassink & van Dijk, 2006a; Dessein, 2008).

Social Farming ... Farming for Health

**Community of Practice**
Community of Practice of scientists and practitioners (since 2004)

**Green Care in Agriculture**
Scientists who wish to advance the topic of social farming in three areas (documenting effectiveness, economics, policy). (2006-2010)

**SoFar (Social Farming)**
Social services of multifunctional farms (research project) (2006-2008)

**DIANA**
Project for developing a practical training in social farming (2009-2012)

**MAIE**
Network and advisory project for establishing training tools for social and ecological development on social farms (2011-2014)

**Fig. 1:** Logos of the European initiatives and projects Farming for Health, Green Care in Agriculture, SoFar, DIANA and MAIE

Two research activities have been set up by the community of practice: the COST Action 866 Green Care in Agriculture and the EU research project SoFar (Social Farming) (Fig. 1). COST (European Cooperation in Science and Technology) was a framework allowing the coordination of nationally-funded research on a European level. The main aim of the COST Action 866 Green Care in Agriculture ([www.umb.no/greencare](http://www.umb.no/greencare)) was to improve the scientific basis for integrating Green Care into farming with the aim of increasing mental and physical health and improving people's quality of life (Braastad et al., 2007). There were three parallel working groups: Group 1 (Health effects of green care) discussed concepts, methods and theories relevant to the evidence for the effectiveness of Green Care: How does Green Care...
influence physical and mental health and people’s quality of life? Which methods and research approaches in the biological, medical and health sciences are of relevance? – Group 2 which addressed the topic of Green Care economics aims to coordinate research on the economics of social farming. Its remit was the economy in the context of multifunctional agriculture at various levels and the social effects of therapies. Lastly group 3 on policy and Green Care addressed the following issues: “How does Green Care fit into a national health care system? How are networks to be developed? How can rural development, the creation of new jobs and the economic survival of initiatives be safeguarded, especially in economically disadvantaged areas?”

In addition, the working group also gave rise to the SoFar project (Social Farming – Social services from multifunctional farms, 2006-2008). Twenty scientists from Italy, the Netherlands, Germany, Belgium, France, Slovenia and Ireland were involved in this project (website: www.sofar-d.de). The general project aims were to improve the institutional framework for social farming and the exchange between research and practice, to coordinate the experiences from different European countries and, above all, to develop recommendations for European policy on the funding of social farming. In addition to an evaluation and baseline survey in all participating countries, discussions between researchers, political decision-makers and practitioners were facilitated in the individual countries in two national strategy forums. Their findings were compiled and disseminated in two international forums in Brussels in order to develop an international innovation strategy. Both a book (Di Iacovo & O’Connor, 2009) and an audio-visual documentation in the form of a DVD have been produced.

Further projects are the two Leonardo-projects DIANA and MAIE that strive for establishing training tools for social and ecological development on social farms.

There are as yet no reliable figures for the number of initiatives and social agricultural enterprises. According to estimates by Hassink & van Dijk (2006b), most Care Farms in Europe are located in Norway (550), the Netherlands (430) and Italy (325), with the authors putting the number of social farms in Germany at 150. However, this applies to the number of workshops for the disabled with land attached alone and should therefore be significantly higher and, in addition, all numbers are based on varying criteria as to what does and does not count as a “social farm”. Nevertheless, the ranking correctly mirrors public awareness of social farming in the specified countries, this definitely being higher outside Germany. Throughout Europe social farming occupies a position between the interests of employment economics and the optimal conditions for therapy and quality of life.

Current status and prospects for social farming in Germany

The SoFar project provided the chance of both getting to know a large number of social farms and their circumstances in Germany and of taking up and applying suggestions made by the participants in the strategy forums. The first public conference on “Added value in social farming” was organised in the Faculty of Organic Agricultural Sciences at the University of Kassel in Witzenhausen in October 2007 and met with a great deal of interest from the participants who were keen to make use of the opportunity to exchange their experiences. In addition, during the first strategy forum in June 2007, it was suggested that a position paper on the added value of social farming should be compiled. The idea of producing a paper of this kind in a participatory process with the conference attendees was put forward during the conference and agreed in a plenary session.

The first draft was ready in December 2007 and was expanded, improved, shortened once more and restructured several times in a multi-stage process. The draft report was made available on several occasions to all conference participants and those involved in the first strategy forum with a request for comments, ideas and suggestions for improvement. The feedback was incorporated into the revision and the paper was also discussed at a seminar with students in Witzenhausen and finally during the second strategy forum in Kassel (April 2008). It was first presented in its final version (van Elsen & Kalisch, 2008) in English
translation at the 2nd international SoFar forum in Brussels where it was received with great interest.

In the "Witzenhäuser Positionspapier zum Mehrwert Sozialer Landwirtschaft" (Witzenhausen position paper on the added value of social farming) the authors call on decision makers in business, management, politics and the public domain to promote social farming in Germany. The first section of the position paper examines the background – the diversity of social farming is presented as a review of multifunctional agriculture which is significantly more developed in some other parts of Europe than Germany. In Germany, farmers and those in need of care and their parents who wish to be proactive, but also therapists and social workers who are in search of suitable farms for their clients are faced with an almost impenetrable jungle of laws and competencies of the different contacts, sponsors and ministries which in addition vary from one Federal German state to the next. School farms with independent funding struggle for economic survival because they receive scant acknowledgement as places of extracurricular learning and experience offering children a new relationship to animals, plants and nutrition. Doctors and therapists are often unable to find addresses of suitable farms which could offer some patients new opportunities. And farms which receive requests from those in need of care and their relatives are seldom adequate to the demands because they do not have the support structures for professional care. There is a lack of advice, professional support, training and further education opportunities, structures and funding instruments which could promote the development of social farming. The second part of the position paper presents and elaborates seven demands:

1. Recognition of the added value of social farming for society
2. The creation of transparency in the legal framework
3. The promotion of communication and exchange of experiences
4. Setting up a central network and advisory service with a coordination role
5. Funding for training and further education opportunities, support and coaching
6. Support for interdisciplinary research on social farming
7. Support for European cooperation

This perspective calls on politicians, ministries, scientists, users and the wider public to be aware of, recognise, support and encourage the services of social farming. These services should not be viewed merely as an extra specialisation for agricultural enterprises, but also as a potential element of a more socially caring future.

The German position paper has provided the stimulus for working on corresponding position definitions in other European countries. This was discussed at a conference in Modena (Italy) in March 2009. Experts from Ireland, Finland, Switzerland, France, Italy, Portugal, Germany and the Netherlands independently developed suggestions and ideas for a European manifesto as part of the Policies of Green Care working group. The second draft of the manifesto was revised jointly with the participants at the international conference of the Farming for Health community of practice held two months later in Pisa and released at the COST conference in Antalya (Turkey) in October 2009 as the European Manifesto on the Added Value of Social Farming.

Learning on the Farm in the context of Social Farming

Education for young people as part of multifunctional and social farming

Social farming and “Learning on the Farm” are closely connected to the concepts of multifunctionality, the cultural landscape, biodiversity and social awareness viewed as potential added value of managing the land. Multifunctional agriculture has been repeatedly
demanded at the political level ever since, in 1996, the then EU commissioner and Austrian farmer Franz Fischler urged his colleagues to produce landscape: "Up until now e.g. landscape conservation was something taken for granted, outside the economic system. (...) It is obvious that a service of this kind must be valued and paid for from the public purse at a higher level than was commonly done in the past" (Fischler, 1996). Most recently, the international agricultural report (IAASTD, 2008) has called for a departure from land use geared towards mass production and monocultures in favour of the promotion of economic methods which take the preservation of biodiversity and quality of life in rural areas seriously (cf. Schmidtner & Dabbert, 2009).

Depending on the development of social farming and the background of the individual actors, there are varying opinions as to if and to what extent activities for "Learning on the Farm" are part of Social Farming. The SoFar project partners in Italy were of the opinion that two completely different networks were involved in their country. Robert Hermanowski, who has himself been involved for many years in a promotional and advisory role for "Green Spaces" for Werkstätten für behinderte Menschen (workshops for the disabled) in Germany, stressed the difference in the funding channels for such things as school farms and the work with people with disabilities. Nevertheless, both in Germany and in the European context, the view persists of interpreting learning, training and the use of sensory experience in agriculture as a part of social farming but not, however, activities such as "farm holidays" if these are not connected to an educational aim. Naturally, the boundaries here are fluid.

What is evident from discussion with colleagues from other European countries is that school farms aimed at the education of children and young people and the corresponding network (BAGLOB) are apparently something unique to Germany. Although other countries have the aim of enabling pupils and school classes to have day outings to farms and there are also petting zoos and farms used for outdoor activities, the approach of having farms specially designed for the needs of young people where they can experience agricultural production seems almost non-existent outside Germany.

The potential of school farms for developing the cultural landscape and nature

During the two year research project "Praxisansätze und Naturschutzpotenziale auf Höfen des Ökologischen Landbaus zur Entwicklung von Kulturlandschaft" (practical approaches and nature conservation potential on organic farms for developing the cultural landscape) funded by the German Federal Agency for Nature Conservation it became apparent that farms which integrate social and training elements have more scope for activities to maintain and promote biodiversity than conventional production enterprises (van Elsen et al., 2003). The nature conservation approaches of selected farms with differing social structures were documented and analysed.

**Hutzelberg school farm**

One of the farms studied was the Hutzelberg school farm in Oberrieden near Bad Sooden-Allendorf which has about 6 ha of arable and 14 ha of grassland, some of this old orchard meadows with cherries, apples and pears under biodynamic cultivation. In small groups under the guidance of trained staff, pupils, teachers and families are not merely onlookers but become farmers themselves for a week, feeding, milking, making cheese and butter, baking bread, working the fields and tending to the vegetables, looking after bees, cooking and learning how food is grown, processed by hand and how to eat a healthy diet. (www.hutzelberg.de). The products made here are almost all used to supply the needs of the school classes. Being part of the growth and production processes for food leads to a heightened appreciation of the value, a "putting a value" on foodstuffs which many children only knew from supermarket shelves before the farm visit.

**Schul- und Seminarbauernhof Gut Hohenberg**

A further example is the Seminar- und Schulbauernhof der Stiftung Ökologie und Landbau, Gut Hohenberg (Ecology & Agricultural Foundation seminar and school farm). The farmers
do not wish to simply "conserve" or "restore" a historical landscape setting but attempt to actively develop the landscape. The main focus on the mixed farm of around 30 hectares is on grassland (suckler cows, milking goats, horses). The principles of organic farming are taught to children, young people and also adults. School classes work under guidance and learn where their food comes from. When the farm was converted, a start was made on clearing scrub from some areas, tending the traditional orchards, bringing arable set aside back into cultivation and regenerating old pollarded willows. Another important element is care for the small watercourse which runs across the farmland. Landscape seminars and surveys have been carried out (Krüger & van Elsen, 2005).

**Nationwide survey**

The farm examples mentioned show how "the social aspect" includes a social involvement with nature and landscape (see van Elsen et al. 2006). These farms were the incentive for a survey of the potential for nature conservation and care for the landscape of organically run school farms throughout Germany. What do school farms contribute to this? In what ways do school pupils contribute to work on the farms and what part does the topic play during their stay? Are school farms particularly suited to carrying out nature and landscape conservation work because of the contribution made by the pupils? 116 school farms were found and sent a questionnaire and 94 of these were returned of which 84 were able to be evaluated, corresponding to a proportion of 72.4%. Data recorded included the structure of the farm, the age group and the work undertaken by the pupils. 52.4% of respondents stated that nature conservation had a "very high" importance on their farm, a further third evaluated this importance as "high". 93% of farms discuss this topic with the children, with the following main points: care for the landscape, species diversity, ecological cycles, animal husbandry; treatment of water, rubbish and residues. The school farms state that the pupils show an average to high level of interest in this, the teachers a high level of interest (Selig & van Elsen, 2007).

Just under 90% of school farms carry out nature and landscape conservation measures on their farms. Creating and looking after hedges, orchard meadows, wet habitats, stream courses, lakes and ponds were most frequently cited. There are also measures for conserving and promoting biodiversity including planting or maintaining fruit tree stocks with rare or local varieties and encouraging species-rich grassland. Around two thirds of the school farms involve the pupils in this work. Two thirds of the respondents agree that school farms are especially suited to tasks of this kind. The farms are therefore making a significant contribution to the conservation of nature and the landscape and to educating and raising the awareness of children and young people in this area.

**Research into examples of innovative farms**

Additional innovative case studies of social farming were studied in the course of the SoFar project as well as the "Social farming on organic farms in Germany" project, including those which are involved in training young people. Three farms are described below: Hof Dannwisch with a farm kindergarten, Schlüterhof with a curative farm school and Hof Hauser which is involved in youth welfare.

**Hof Dannwisch**

Hof Dannwisch was converted to biodynamic farming methods as long ago as 1957. Young people with disabilities have been integrated in the work since that date. Later on the social work expanded. The farm was transferred to community ownership and is nowadays run by 30 people as a farm community. The community’s aims include training for young people and integration of people with disabilities. Five families, six people in need of care, trainees and part-time employees look after 116 ha, 40 milking cows with calves, 300 hens and 40 fattening pigs. The farm also has a one hectare garden, 1,100 m² greenhouses with vegetables and herbs plus a cheese dairy, farm shop and farm box service. The variety of
fruits and areas requiring large amounts of manual work create work opportunities for people in need of care and for school pupils. Most of the products are sold in nearby Hamburg.

Sabine Gehle has run a kindergarten on Hof Dannwisch since 2004 (Fig. 2). Around 15 children between the ages of three and seven years attend the kindergarten five days a week. The infrastructure for this comprises a garden hut and playground and compost toilets. The educational philosophy combines elements of Steiner Waldorf education and forest school nurseries. Having a kindergarten on the farm not only means contact with “real” domestic animals and plants grown to produce food but also the daily encounter with the farmers and farm community. The children follow the daily work done by the adults by watching and copying them. They look after their own patches of garden and are allowed to feed the cows. The experiences and observations are developed through play and song and the daily reality of farm life is conveyed through games and stories. No artificial educational teaching material or concepts are required here: the children are integrated into the living and working processes taking place on the farm throughout the seasons.

People in need of supervision are integrated into various types of work in the garden, processing and in the care of domestic animals. One client is responsible for collecting firewood. The farm organises two work experience fortnights every year in cooperation with schools. During these, additional tasks outside the daily routine are undertaken, such as projects in the landscape and woodlands, hedge care and joinery and building tasks. This work is of use to the farm and the pupils acquire practical manual skills. The kindergarten, for instance, was erected in the course of work experience placements.

Heilpädagogische Hofschule Wendisch-Evern

The Schlüterhof in Wendisch-Evern near Lüneburg runs a curative school. Based on Steiner Waldorf education, the farm school provides children and young people (with special educational needs) with educational and life experience through practical work with nature on a biodynamic farm. The school which is being developed was opened in autumn 2007 as a branch special school of the Lüneburg Rudolf Steiner School. It currently caters for 38 pupils throughout the primary years (classes 1 to 7) in four classes with multiple age groups, in some cases as double classes. The aim is to expand further to include the secondary level up to the 12th class. The plan for the secondary level is still being formulated, the aim being to enable the young people to acquire a vocational qualification.

The farm comprises 70 ha farmland and 40 ha woodland, cattle boarding, arable and forestry, and horses sheep and hens are kept for educational and therapy purposes. What is important for those involved is that it is a working farm, it is "real" rather than being "stage managed". Jürgen Schlüter: "I don't want a toy farm. (...) We want to be a school where the emphasis is on doing, where the children learn about the world through their own activity, where they roll up their sleeves and say: "I'm a farmer". Due to the fundamental nature of the work, a special quality arises: "This is the quality of the education on the farm: being immersed in the activity which itself creates the rules." The credibility and authenticity of the farmer is of the utmost importance to the pupils: "Everything the farmer says and does is visible. It can be experienced. He does what he thinks and what he wants. (...) As a necessity, from the nature of the thing."

But for many of the pupils school is not an obvious choice. Behavioural problems, the inability to make attachments or traumatic social events have led to some children dropping out of school and some have even been labelled as ineducable. The Schlüter family counts it a success that these children like going to the farm school. There are children who find contact with animals easier than with people, who are suddenly able to speak or permit closeness in the encounter with animals. "This girl is autistic. She has difficulties with being talked to or touched. But when stroking the animals, particularly the cows, she blossoms. (...) Children who scarcely speak (...) but if you have the chance to listen to them talking to the animals, it's amazing what they can say. It's really unbelievable."
The synergy created by children and animals must be facilitated conceptionally without cost to either of the partners. Jürgen Schlüter is therefore in favour of rules, protected spaces and special structural precautions: "It is obvious that we can't have large animal houses. Loose housing is very suitable, the cows don't need to be tied up. But contact with individual animals must be possible and the groups have to be small. (...) You need to create spaces which are very protected, for both the children and animals in this encounter. There are a few rules: there is to be no squabbling near the animals, (...) no child is allowed to go in somewhere without permission, into a pen and no chasing, shouting, hitting and these kind of things is allowed." (quotations taken from: van Elsen et al., 2010).

**Hof Hauser**

The Hof Hauser in Wolfhagen near Kassel is a miniature farm on five hectares of cultivated land and the site of an old mill. Since 2001 the two founders plus trainees have kept the farm's own animals - horses, donkeys, milking goats, sheep, geese, hens and ducks (Fig. 3), cultivated the garden and meadows and worked 1.5 ha of woodland including for dried leaf fodder. Hof Hauser is a therapeutic family community offering "24-hour care" with up to nine places for children and young people of school age within the framework of public youth welfare. The agricultural enterprise provides a place to live with a range of work opportunities. The young people not only learn manual skills and how to grow food, but also how to take on responsibility for others and for themselves.

Figs. 2 and 3: Hof Dannwisch (with farm kindergarten) and Hof Hauser (youth welfare) – innovative education on the farm

The property, originally a mill, was acquired by 30 founding members in 2001 (Verein Hof Hauser – Arbeitsgemeinschaft für Menschenbildung, Sozialkunst und Landbau e.V.) "The quest for a new approach to work was there from the start." The vision included several goals. One was to train future educators in a life and work context i.e. by integration in agricultural activity. Manfred Schulze, who himself has been involved in training teachers for many years, believes that it is "harmful for children's education if the teachers have no practical skills." The intention was to provide regular practical training or a gap year (an introductory year) to give the teacher training students from Kassel the opportunity to learn "practical life skills". Another aim was for "children with no secure home to live here," in other words, for (curative) educational work to take place. The name of the farm, taken from the founding Kaspar Hauser, is also derived from this undertaking. One of the basic principles is that the children and young people being cared for should live with the staff on the farm as a "working place". Children should be able to find a place here to "reconnect to their biographical aims". Work, manual farming skills, should play a key role in this.

At Hof Hauser the children are introduced to basic sensory experiences and practical action. This is achieved by, for example, activities and helping on the farm (e.g. baking bread, making music, painting, handwork, mucking out the byre). The children and young people are given a sense of security through the "hierarchy of responsibilities and knowledge" into which they grow in the course of time. The division of labour reflected in the family structure also helps the children find their bearings. The younger children mainly perform "simpler activities" when cooking such as chopping vegetables while the older ones use the
experience they have acquired to prepare meals from recipes and also assist the younger ones with their tasks.

For all activities attention is given to making sure that the work itself has "the character of necessity" and that the child can decide for itself whether it wants to join in: "meaningful activities (caring for the earth) have the 'character of necessities', just as the fire has the character of a necessity when you come into a cold room." The child's will should be educated by attraction and not by pressure. This includes learning from mistakes: "The most important thing about learning to walk is learning to fall down." Staff should provide an example to the children: "You do not need to educate, you only have to do meaningful things," according to Manfred Schulze (quotations taken from: van Elsen et al., 2010).

Hof Hauser does not consider itself to be an institution where children are merely cared for and provided with activities but as a place which prepares them for later life and helps in their search for perspectives and aims in life. "It is not enough just to bundle people off to the farm, but consideration must be given to what abilities the farmer or educator have, what the place requires, what the place needs to give in order to make it into a 'place of culture' rather than a 'place of toil'". According to Manfred Schulze, society views "work" not as an opportunity for experiencing and learning, but as something enforced from outside which "humiliates the will" – this view has spread through Central European culture for centuries. The "development of a working culture" through the most varied handicrafts and agricultural activities which are largely carried out by hand could point the way to an alternative. Old rural crafts are kept alive and regular joint projects run.

Part of the work ethic is also that work is never used as a form of punishment and the children do not receive any money for their help on the farm – around half an hour per day. Payment would be an external incentive and the motivation to work should be developed from within. – The farm work provides an important teaching tool in education: encounters (with people and animals) and actions foster the development of a feeling of responsibility, social skills and self-confidence. "Hof Hauser is a place where work is constantly created anew."

Most of the farm is used as grassland and for growing feed. The farm's own young woodland also supplies animal feed, firewood for the farm and building materials (e.g. timber for fence posts). Other areas are used for producing fruit, berries and vegetables for home consumption and there is a small greenhouse. The farm makes as many products as possible itself in order to be self-sufficient. Some fruit and vegetables are preserved after harvest (juices, jams); sheep and goats provide milk (particularly for subsequent processing into butter and cheese), meat and wool; hens, ducks and geese lay eggs. In summer the animals are fed mostly fresh grass and leaves. In winter they live off hay from the meadows and hay made from dried leaves. Agricultural activities help to convey values and explain life cycles and rotations. In small-scale farming there are still many development processes which it is almost impossible to see in their entirety elsewhere, e.g. keeping hens "in the wild" from brooding and raising the chicks up to the full-grown bird.

From Social Farming to Circus Farming?

The examples presented here report on farms where "Learning on the Farm" is practised as a social aim. The different areas of experience on the farm help and encourage the young people who are integrated into farming routines and activities. The living creatures on the farm – the domestic animals and plants – are not exploited for satisfying needs or for learning, but are automatically treated with respect. All the farms described are run organically. "Learning on the farm" run in this way not only conveys authentic sensory experiences to the young people but also expands into a socially aware interaction with the society in which one lives.
There are of course contrasting examples which raise questions, such as a farm on the west coast of Norway visited as part of a conference. The farmer is proud to have created a play park for children instead of milking cows as he did before. The barn has been converted into a large straw playground with climbing wall; there are animals to pet in cages, from ants and mice to calves, pigs, sheep and horses (Figs. 4 and 5). There is a relatively large area with trampolines, mini tractors and other play equipment. The farmer has leased one of the buildings to a kindergarten with 18 children. In addition, children come to the farm and are allowed to play there in return for an entry fee. The day starts with breakfast, then the children go outside. The grounds are also hired out for parties. One participant whispered to me that this kind of circus farming has little to do with agriculture. The way in which small children are brought into contact with animals here is indeed questionable. The children see the animals as objects to be petted and learn nothing of the role that they play in feeding human beings. The relationship between the human being and animal is reduced to the animal being used like a toy and replaceable object of entertainment.

Future prospects: the task of quality assurance

The practice of social farming occupies a position between the interests of economics, employment, therapy and quality of life. The agricultural enterprises can be sought out by people who, for various reasons (therapy, education, employment) want to be part of life on a farm and work with nature. Involvement with animals and plants produces meaningful work and can be used as an opportunity for experience. This type of "use" has a different quality than reducing animals and plants to mere "factors of production" as is increasingly the case in "modern" agriculture. Nonetheless, even when the farm is used as an opportunity for learning and experience, ethical questions arise about the treatment of nature or, at a more basic level, about the relationship of modern man to nature (this idea has been dealt with in more depth in relation to the treatment of animals in social farming loc. cit, see van Elsen, 2008). Quality assurance therefore forms a key task for the further development of learning on the farm. This should take place not so much via rules, regulations and a long list of criteria but rather through working on the motives, guiding principles and ideals which underlie the incentive for "Learning on the farm".

The foundation for establishing a German community of practice for social farming was laid at the conference "Praxis und Ziele Sozialer Landwirtschaft in Deutschland" (the practice and aims of social farming in Germany) in Witzenhausen in October 2009. The group’s objective is the exchange of ideas and support for the development of social agricultural enterprises. The network wishes to develop the variety of social farming in Germany and to integrate existing networks such as the "green spaces" of the workshops for the disabled, the network of school farms (BAGLOB) and the association "Zusammen-schaffen-wir-was" (together we can do something) which, in line with the Dutch model, creates an agency for suppliers and consumers of sheltered employment in agriculture. As in other countries, the aim is not institutionalisation, but rather an informal association which is connected by a mailing list and in which those taking responsibility for the process undertake various projects.
This philosophy and working principle which have been adopted from the European community of practice Farming for Health can contribute to coordinating and maintaining the innovative range of social farming in Germany and to ensuring its social orientation and high quality. The aim of the "German community of practice for social farming" is for social farming in Germany to achieve the importance that it already has in many countries in the rest of Europe: as an area of multifunctional agriculture to be taken seriously and which, amongst the sometimes conflicting demands of therapy, income, quality of life and employment, provides opportunities for the very varied initiatives and farms which until now have often been working in isolation. The successful cooperation of farms in the framework of the BAGLOB network presents an ideal starting point for developing the concept of "Learning on the farm" as an important element of social farming and hence a generally more socially oriented agriculture of the future.

References


Learning strategies and conceptions for farms as sites of learning

Martina Flath

University of Vechta, mflath@ispa.uni-vechta.de

Abstract: In post-industrial society, education represents the decisive location factor since the level of education and the related competences of the individual drastically influence the endogenous development potential of a region and its added value. Regional learning at farms as sites of learning therefore is faced with the challenge of coping with the strategic principles – life-long learning as well as education towards sustainable development – and with the students who acquire competences and whose participation is to be cultivated.

In accordance with these aims and the quality requirements of a future-oriented education, the basic concept of regional learning on farms is characterized by active, cross-curricular, situation- and problem-oriented learning in different learning situations.

The following conceptual approaches have emerged for farms as sites of learning in the scope of theoretical and empirical research over several years. These approaches also affect the quality of the learning projects: Conception of competence-oriented learning materials on the basis of core curricula, of the general concept and the potential of regional learning, combining learning at school with extra-curricular learning as well as with activities in the mornings and afternoons, development of individual evaluation instruments and continuous evaluation of the learning projects, close cooperation between businesses and organizations in agriculture and the food industry and educational institutions, embedding the topic of “learning on farms” into the didactic education at universities, involvement in interregional, national and international projects.

Implementation of these didactic-methodological principles and conceptual approaches in the course of planning and execution of learning projects on farms render it possible to bring out the exceptionally eclectic potentials of this site of learning. This includes the following: The gathering of primary experiences with all senses, gaining conceptions by observation and description of original objects, transferring knowledge and methods in real situations, promoting independence and self-organization, distinguishing learning processes, creating learning motives and developing personal interests.

Key words: Regional learning – extra-curricular learning – farm as site of learning – didactic-methodological potentials – education for sustainable development – life-long learning

Preliminary remarks

In post-industrial society, education represents the decisive location factor since the level of education and the related competences of the individual drastically influence the endogenous development potential of a region and its added value. Professions, methodological and social competences are reflected in the individual’s ability to participate, in his/her regional integration and identification as well as in the sense of responsibility for regional issues and developments. Economic growth and sustainable regional development cannot be imagined today and in the future without regional investment in education and educational strategies. Rural areas make learning situations possible which are eclectic in contents and didactic-methodological approaches. These areas thus bear special potential for education.

In the scope of research in the field of geography teaching methodology at the University of Vechta, we have been concerning ourselves with questions of regional learning in rural areas for approx. 10 years. The research work concentrates on examining the structure and effectiveness of regional learning with regard to developing competences and the formation of regional identity in children, adolescents and adults, on establishing empirically supported quality criteria for regional learning as well as on designing corresponding teaching and learning material for the subject of geography as well as cross-curricular teaching and
learning. We view our research work in the context of research on teaching and learning in the area of education towards a sustainable development and life-long learning. It is our aim to establish regional, extra-curricular learning as a part of life-long learning in a future-oriented educational system.

As a result of our research work and as an empirical foundation, we run extra-curricular learning facilities on two full-time farms in the district of Vechta, in the context of two associations, RUBA e. V. (Regionale Umweltbildung Agrarwirtschaft – Association Supporting Regional Environmental Education Agriculture) and AGRELA e. V. (Arbeitsgemeinschaft Regionales Lernen Agrarwirtschaft – Consortium Regional Learning Agriculture). Regional learning on the topic of “agriculture and nutrition” is in the foreground at these learning facilities. At present, we are establishing a third learning facility on the topic of “artificial landscape” at an ecological part-time farm. The learning facilities render it possible to test research results in practice, to try out teaching and learning material and to gain empirical insights and challenging new academic questions.

The region as extra-curricular site of learning

The term “region” – discussed and defined by Blotevogel et al – is an essential but not undisputed term in geography. The characteristics depicted in fig. 1 reflect general fundamental components of the term “region”.

- Regions are not (only) subspaces/sections of the earth’s surface of medium dimension,
- Regions are characterized by their particularities with regard to their socio-political, economic, social, cultural situation,
- Regions are spaces of awareness and action of people and may be effective in the formation of identity.

Fig. 1. Characteristics of regions. (Source: among others, Blotevogel 1996)

Regions are characterized by a high degree of complexity as well as by the diversity and singularity of their environment and culture, their economic and social structures, their regional and supra-regional interconnection and other features, thereby distinguishing themselves from other regions. On this basis, regions provide an excellent basis for diverse approaches and a great transparency for learning processes.

Three reasons account for the didactic relevance of the vicinity and hence of regions and/or of the regional for learning processes:

1. In the past years, regions have clearly gained in importance. Today, they are important districts for decisions and actions relating to area-relevant political, economic and social developments and decisions, which, in turn, influence and shape geographical structures and their regional functionality to a greater or lesser extent. Examples for this are: nuclei of towns and suburbs, metropolitan areas, formation of clusters in the economy, for instance in agriculture, the food industry and many more. This means that regions are an indispensable reference area and frame of reference for different contents and topics in order to develop competences and strengthen participation.

2. Actors, in particular educated actors, are becoming increasingly important as shapers and decision-makers in the scope of regional development. Today, we already speak of knowledge-based regional development and collective learning in the region. Do today’s schools already sufficiently qualify for participation in regional challenges and processes, do they awaken an interest in “their” region, do they make the region sufficiently accessible to students through extra-curricular learning?
3. From a didactic point of view, a region with its different sites of learning affords original encounters and transparency and thereby the greatest possible real-world proximity to objects, issues and processes. This constellation provides endless potential for learning projects and learning processes.

**Models and aims of regional learning**

Altered social aims in education as well as changing children and adolescents pose new challenges to academic structures in general, but also to learning in particular.

In the strategic orientation on the forward compatibility of education, the general principles of life-long learning and education towards a sustainable development occupy a central position, in my opinion. Regional learning is a didactic-methodological concept which unites different spatial aspects and different extra-curricular sites of learning under the aim of actors acquiring competences in rural areas, which promotes their participation in the region and awakens their interest in the region as well as strengthening regional identity. (cf. fig. 2)

![Fig. 2. Models and aims of regional learning in rural areas (source: illustration by the author)](image)

Not only are life-long learning and regional learning closely related, but also education towards sustainable development and regional learning, as an education towards sustainable development strives to promote the shaping competence and participation of people in their region. This demands that an interest in the area and motivation must be nurtured to occupy oneself with the region in which one lives, studies or works. It is possible to develop an awareness of the region up to identification with it by gaining knowledge about regional structures and processes and their global context. All dimensions of an education towards sustainable development which are relevant to education also contain a regional component (cf. fig. 3).
The general principle of life-long learning shall be discussed in more detail in the following paragraphs: a closer proximity of classroom instruction to real life and the ability for life-long learning are demanded by society and are necessary for a quality initiative in schools. There is evidently a connection between life-long learning and the region in which the learning party lives, studies, works and spends his/her free time. Qualifications which render life-long learning processes possible to these parties, i.e. which enable them to continually expand, deepen, apply and update/renew their knowledge and abilities are, for instance:

- Subject-specific competences which should consist of integrating orientational knowledge, knowledge through experience and new knowledge and the ability to apply these various forms to new situations.
- Individual competences, i.e. being able to access the forms of self-initiated, self-directed and self-organized learning. Learning how to learn must be a fundamental aspect of all learning projects.
- Social competences such as the ability to work in a team, self-confidence, personal responsibility, flexibility, the ability to communicate among other points.

Life-long learning as future-oriented learning may not and should not be limited to the institutional educational system. “Think global – act local” is inconceivable without extra-curricular learning in the area around and further away from schools. The diversity, the characteristics and the physical substrate of the region in which children and adolescents live and learn, provides room for experiences and adventures, may arouse curiosity and interest, forms the basis of conception and knowledge and can thereby nurture and ignite learning processes.

**Life-long learning means: learning in all phases of life and/or in all main areas of development**

Learning in the sense of constructively processing information and experiences into knowledge, insights and competences shall be geared to the human biography, from the toddler to the senior, from pre-school education to school education to advanced training and recreational education, for instance in the scope of tourist offers. In the process, learning at
schools takes on the part of teaching a base stock, a core set of insights and competences in order to qualify children and adolescents for life-long learning processes.

Life-long learning means: learning at different learning sites
Life-long learning cannot and should not be limited to the institutional educational system. Non-formal and informal learning in different learning situations at different locations form a necessary addition to formal learning. The learner shall also be given an understanding of learning in relation to area.

Life-long learning means: learning through numerous forms of learning and in numerous learning situations
Learning at different sites of learning creates other learning situations than in the classroom. Extra-curricular regional sites of learning, for instance, provide other learning approaches, make other demands on self-reliance and self-monitoring, on learning paths and results, since they are marked by original encounters with the subject matter at hand. Therefore, children and adolescents must learn how to learn in the region. In the process, it is important that learning in school and extra-curricular learning in the region complement and permeate each other.

The concept of regional learning and the educational strategy of life-long learning intersect due to the circumstance that life-long learning contains a territorial dimension. From a programmatic point of view, the European dimension and the national dimension are emphasized. From a didactic point of view, however, the regional dimension must be the primary dimension for planning and implementation of learning projects in different learning situations. It is in the region that we see the greatest potential for acquisition of competences and formation of regional identity; this can be substantiated on an empirical basis (cf. Schockemöhle, J. 2009).

In order to unlock and make accessible the complexity of regional structures for regional learning, it is necessary to develop regional networks and to implement same in the region on a permanent basis. Offers enabling and supporting life-long learning must be and can be created by regional networks of schools, communal and social institutions, enterprises and other establishments in a region. This is the only way to make accessible the wide, almost inexhaustible range of educational possibilities and learning possibilities which a region has to offer in an educational sense.

This interaction between education and region (rural areas) as medium of life-long learning constitutes an approach for research in the field of geography teaching methodology at the University of Vechta. The main issue in this respect consists of questions of regional learning in rural areas. The research work concentrates on examining the structure and effectiveness of regional learning with regard to development of competences and formation of regional identity in children, adolescents and adults, on establishing empirically supported quality criteria for regional learning and on developing corresponding teaching and learning materials for the subject of geography and interdisciplinary teaching and learning.

Didactic potentials of the farm as regional site of learning with regard to topics and contents
The farm as extra-curricular regional site of learning may be a site of experience, adventure, exploration and room for activities for children, adolescents and adults.

Learning at a farm may contribute to achieving transparency for us as consumers of food products – from the producer to the shop counter or from the shop counter to the consumer – since a change of perspectives is a tried and tested principle of didactics. Only sufficient knowledge of the origin, the manner of production and processing of our food products enables the individual to develop a critical stance as a consumer and corresponding consumer competences.
The range of learning projects at farms is particularly eclectic and complex with regard to topics and contents. Those potentials which a farm offers in topics and contents along with the preceding and following areas of the production chain by far exceed the subject area of agriculture and nutrition per se.

Fig. 4 underlines the above statement in an impressive manner without including possible approaches for cross-curricular learning from the perspective of the school subjects.

Fig. 4. Potentials of the farm as site of learning with regard to topics and contents (source: illustration by the author)

The educational landscape of the future will not only change with regard to qualification for life-long learning and the learning environment but also with regard to the contents of learning. Students are to learn how to learn and are to be enabled to learn in a cross-curricular and interdisciplinary manner on the basis of a basic stock of subject-specific competences.

The farm as regional extra-curricular site of learning is also perfectly suited for cross-curricular learning projects under current academic structures with their subject-specific perspectives. Different contents of the school subjects can be dealt with in the scope of the learning project on “agriculture and food industry” by way of a target-oriented selection and integration from an interdisciplinary point of view. In this manner, various learning approaches may be allowed for. Fig. 5 shows an incomplete selection of such school curricula.
Additional strengths of the farm as site of learning lie in the rich didactic reservoir of this extra-curricular regional site of learning. At a time of incisive social changes which also result in a changing childhood and adolescence, the value of original encounters with the objects of learning and the possibilities which the farm offers with regard to developing social and methodological competences cannot be overestimated. The manifold potentials of regional learning listed as follows apply to the farm as regional site of learning without restrictions. Hence regional learning affords the following possibilities, for instance:

- gathering primary experiences,
- holistic learning
- gaining concrete notions by observation and description of original objects
- recognizing interrelations in reality,
- mapping knowledge and methods onto real-life situations,
- promoting autonomy, independence and self-organization,
- establishing confidence in one’s potential,
- differentiating learning processes
- free space for developing personal interests, thereby giving rise to learning motivation
- prompt testing of work results in practice

Basic concept for regional learning on the farm

The basic concept for the farm as regional site of learning reflects the eclectic didactic-methodological approaches which this site of learning provides. Knowledge of these approaches and a deliberate application of same in the course of planning and carrying out learning projects at farms renders it possible to adequately structure student-oriented learning projects with regard to didactics and methodology in such a manner that targets development of competences, participation, and a holistic view of learning processes.
Fig. 6. Basic concept for the farm as regional site of learning (source: illustration by the author)

Due to the complexity and dynamics of regional structures and developments as well as the already demonstrated versatility of the topic “agriculture and nutrition” with regard to content, the farm as a site of learning enables and requires an interdisciplinary approach. At the same time, it calls for the connection and transfer of various contents and methods as well a minimum of interlinked and active working. Learning projects at the farm may pose an important contribution to developing integrated thinking and action competence. Given the increasing complexity of the world around us, the ability to think in systems is an important feature of a future-oriented education.

The farm provides many opportunities for situation-oriented, vivid learning while respecting the regional and operational idiosyncrasies. Different contents, didactic approaches and situations for learning processes exist on a farm depending on the season and/or seasonality in crop production as well as on certain phases in stock breeding and livestock farming. Situation-oriented learning can also be understood as a process over a longer period of time, for instance from planting the potato, nurturing it, harvesting it, processing it into French Fries, until preparation and consumption of same.

On the basis of real existing problems, students are able to observe, explore and assist, discover new things, discover new approaches to solutions independently and actively test and try out newly learned things and insights – i.e., learn in a problem-oriented manner.

On account of its ecological and economic operational cycles as well as the possibility of following real-life interdependencies, the farm as site of learning allows for different approaches both in content and didactics to teach learners integrated, system-oriented thinking. In the process, certain aspects and/or parts of cycles may be examined, described and analyzed in a manner appropriate for the respective age group.

In particular, regional learning on the farm includes immediate and personal experiences through active and independent learning. Learners participating in explorations of the farm
should: perceive, observe, describe, smell, feel, experiment, taste and many other things. This means an emphasis on didactic principles of holistic learning and subject-orientation. The farm as site of learning is to be explored and experienced. This is achieved by way of independent and partly self-determined communication and action. Active forms of learning such as exploration, learning at stations and in the scope of projects are organizational forms particularly suited to interactive learning. In the process, the actors play an active role in shaping the processes on site: they plan, specify goals, work in groups or with a partner, take on certain roles, etc.

Fig. 7. Explorations of farms create room for intensive experiences (source: RUBA/AGRELA e.V.)

The farm as site of learning may possess very distinct operational structures and thus pursue distinct goals with regard to education. There are so-called school farms or seminar farms whose primary aim is education, social work, and recreational activities. However, there are also conventionally and ecologically operating full- and part-time farms, highly specialized and less specialized farms which offer and carry out learning projects at farms along the principle of multi-functional agriculture and in order to diversify their source of income. In my opinion, the didactic-methodological approaches of the basic concept for the farm as site of
learning as presented in fig. 5 may form the point of departure and basis for planning and designing learning at the farm for all kinds of goals and forms of organization.

**Further conceptual approaches and considerations for the farm as site of learning**

Further conceptual approaches must be considered in order to convert the basic concept for the farm as an extra-curricular regional site of learning into successful learning offers which meet the quality requirements of schools and take up the aforementioned general principles of a future-oriented education in rural areas. These conceptual approaches are briefly discussed in the following paragraphs.

1. **Concentration of education on extra-curricular sites of learning**

Despite the variety a region possesses with regard to its sites of learning, the work carried out over many years in order to draft, implement and evaluate extra-curricular learning projects at farms in the Oldenburger Münsterland has shown that education at a single farm as a learning facility is more goal-oriented and effective than rotating activities on many different farms which, as extra-curricular sites of learning, are often only used for the purpose farm exploration. This means that a principal distinction must be made between regional learning at a site of learning and at a learning facility. At the same time, several activities at one learning facility have strengthened the cooperation between that farm and certain schools, thereby reducing inhibitions with regard to organization and contents.

All places of a region which are suitable for experience-oriented, extra-curricular learning are sites of learning; the village, the farm, the marketing cooperative, the apiary, the bakery, the museum, the woods and other places. Hopf (1993) defines sites of learning as follows: “Außerschulische Lernorte sind didaktisch-pädagogisch ergiebige Informations-, Erfahrungs- und Tätigkeitsorte, die außerhalb der Klassenräume ein aktives Erkunden und Lernen ermöglichen.” [“extra-curricular sites of learning are didactic-educationally fertile places of information, experiences, and action which enable active exploration and learning outside of the classroom”]. Learning facilities, in contrast, are “außerschulische Lernorte, die inhaltlich strukturierte und altersspezifisch differenzierte Lernangebote vorhalten und durch gezielte didaktisch-methodische Maßnahmen Lern- und Handlungsprozesse in Gang setzen, die im Rahmen von schulischem Lernen schwierig oder nicht realisierbar sind.”(Flath 2003) [“extra-curricular sites of learning which provide learning offers structured by contents and tailored to the age group and which generate learning and acting processes by means of systematic didactic-methodological measures, which are difficult to realize or not feasible in the scope of learning at school”].

In the process, it has proven to be extremely successful to already include the sponsors/providers and the parties carrying out the learning projects in the phase of planning and devising the learning facility in order to arrive at a solution which is as ideal as possible with regard to location in accordance with the educational goals, the particularities of learning situations in the non-formal area of education as well as the local background.
2. Devising learning offers which accommodate the core curricula

Output-oriented learning on the basis of core curricula and educational standards at the various levels of school education and in various subjects poses new chances for extracurricular learning at the farm as site of learning, since there is quite an interpretational leeway with regard to implementing the educational standards. The core curricula define competences but the contents are often not specified or only assigned in a very general manner. On principle, however, competences may be developed by way of different subject matters. Hence there is space for interpretation which is filled by school books and the formal curricula of schools. The parties involved in farms as sites of learning should grasp this chance and should devise and present schools with educational offers which are based on the requirements of competence development in certain subjects and/or cross-curricular competence development for the respective school levels and which make these requirements transparent. Thus the farm as site of learning can recommend and position itself as “service provider” for school education.

Above and beyond this, the core curricula must be analyzed in detail with regard to development of competence and, in particular, with regard to the level of the competences. In my opinion, only this renders it possible to devise learning offers for the farm as site of learning which the schools and teachers will pick up because they meet the needs and requirements of the schools and support lessons in schools. This means: the competences must be clearly operationalized, the topics should be integrated into the curriculum and/or should complement same, the methods of teaching and learning should promote active learning and be oriented towards the future and the given tasks should reflect the competences which are to be reached on the respective levels by operationalization and different task forms.

3. Development of learning materials founded on the basic concept and the potential of regional learning

As both the didactic-methodological basic concept of the farm as site of learning as well as its didactic-methodological potentials were explained in detail, it is only briefly pointed out here that the features listed in the above section should be reflected in the conceptual design of learning offers and in the configuration of learning situations for regional learning at the farm. In particular the basic concept poses an important basis for decisions about learning
projects at farms as sites of learning with regard to the contents and didactic-methodological structure of the projects; a basis which has been tested in practice for many years and which has proven its value.

With regard to the potentials of the farm as extra-curricular site of learning, particular emphasis should be placed on internal differentiation of learner groups from a didactic point of view. There are many ways to differentiate learning offers on farms and to make this distinction identifiable; from contents to methods, motives, interests, learning and working pace, up to the setting of tasks.

4. Combining learning in school with extra-curricular learning activities as well as offers in the mornings and afternoons

Learning projects at farms may comprise visits of one or two hours to half-day site explorations, sojourns on the farm of several days to offers which extend over a longer period of time, for instance a school term. In my opinion, all educational measures for extra-curricular learning on farms require a goal-oriented preparation at school so that the students are properly equipped for the new learning surroundings and the changed learning situations at the farm as site of learning with regard to content, method and organization.

The numerous observations, impressions, experiences and information should be taken up, broadened and reinforced in the course of the follow-up classroom work on this particular learning experience. In the process, the intensity and duration of the encounter with the farm should pose a criterion for preparatory and follow-up course work. The more intensive the encounter is, the more intensive the preparation and follow-up course work should be. In the course of the educational work which the associations “RUBA e. V.” (Regionale Umweltbildung Agrarwirtschaft – Regional Environmental Education Agriculture) and “AGRELA e. V.” (Regionales Lernen Agrarwirtschaft – Regional Learning Agriculture) performed on principal and part-time farms, the services of a service provider/multiplier who acts independently and neutrally with regard to content between school and farm, who is in charge of preparation and follow-up work as well as of organizing and carrying out the learning projects, have proven to be effective and an enhancement in quality, though also as involving a greater financial effort.

In the past years, the importance of full-time educational offers has steadily increased. The farm as site of learning must therefore not only fulfill the general principles of “life-long learning” and “education towards a sustainable development” and adjust to the new demands of output-orientation of teaching and learning processes but must also devise afternoon activities in order to be and/or become a site of learning in the sense of full-time education. Studies on the structure of activities offered by full-time schools in Germany clearly show that there are hardly any afternoon activities which aim at broadening and expanding contents from the morning lessons. There are hardly any extra-curricular activities, either, for becoming better acquainted with the region and its idiosyncrasies (cf. Appel et al. 2009). This activity format bears a major development potential for the farm as site of learning.

5. Developing one’s own evaluation instruments and continuous evaluation of the learning projects

Evaluation measures are an indispensible necessity, in particular in order to assure the quality of learning projects on the farm, as these instruments make the success of regional learning on farms measurable via various indicators and thereby transparent to the public. These quality features and the transparency of regional learning are not only demanded by the sponsors of projects but they will increasingly gain in importance in competition with other extra-curricular sites of learning. A maximum objectivity of the results of evaluations demands a clear definition of the goals and development and/or use of suitable empirical instruments. Evaluation should not only consist of self-evaluation but also third-party evaluation; moreover, it is conceivable that the empirical work on the farm as site of learning may pursue various goals. Hence the structure or contents of the learning projects themselves may be examined as well as their efficiency with regard to the competence development of persons and/or target groups such as: children, adolescents, teachers.
parents, farmers. Tried and tested measuring instruments from the field of empirical educational research and social research are available for the empirical studies; however, these instruments were, in most cases, not developed explicitly for the purpose of extra-curricular regional learning. It has therefore proved advantageous to develop individual measuring instruments on this basis (cf. Schockemöhle, J. 2009). In the process, qualitative and quantitative procedures should be used and/or combined in a sensible manner.

6. Cooperating with partner schools, learning at the farm as a part of school programs

There are different ways and approaches to link schools and farms more closely. In this regard, quality and suitability of the educational offers play a prominent role, since children and adolescents, teachers and educators, tourists but also social groups such as organizations will only return to the farm as site of learning, i.e. return repeatedly, perhaps on a regular basis, if an exploration of the farm or the farm week has appealed to them and the results are positively reflected. In the academic area, it has been observed that the suitability of a farm’s learning offers to certain contents of the formal curricula has been increasingly decisive for the choice of the farm as site of learning.

On the one hand, contractual cooperation between the site of learning / the sponsor and different schools of the region has proven beneficial for connecting school and agriculture. Such cooperation may, for instance, lead to all students of a school visiting the farm as site of learning at least once during their school time. In many cases, the networking also leads to a listing in the respective school program and thus a continuation of the cooperation. Apart from explorations on site, it is possible to arrange other activities in cooperation such as further education for teachers. A meeting with the partner schools should take place once or twice a year in order to foster the network relationship.

On the other hand, it has proven beneficial to present educational offers at farms on special topics and developed for particular target groups to educational institutions. An important aspect of lobbying is represented by the media, as they should report on a regular basis on the work performed at the sites of learning and on special events.

7. Close cooperation between agriculture and food industry – school – university as well as embedment of the topic “learning at the farm” into university teaching

A deep integration of all parties involved in education, farmers and their agricultural organizations, schools of the region and the University of Vechta forms an essential basis for successful implementation of regional learning on the topic “agriculture and nutrition” in the district of Vechta by the associations RUBA and AGRELA. In the process, the conceptual work with regard to content, didactics and methodology primarily lies with the staff of the department “Learning in Rural Areas and Environmental Education” at the Institute for Structural Research and Planning in Areas of Intensive Agriculture.

Integration of the topic “learning at the farm” into teaching methodology in teaching degree programs and/or in Master of Education programs in different forms, ranging from classes up to the final thesis, denotes the close connection between theory and practice and is an expression of research-focused academic teaching. However, it has been shown that the topic “farms as sites of learning” is and/or could be an integral part of other academic programs as well, such as ecological educational science, social services, agriculture.

8. Cooperation beyond the region in interregional, national, and international projects and organizations

Like any academic project, theoretical and empirical research on the farm as site of learning demands a cooperation and exchange between researchers working on the same topic though perhaps under different disciplinary approaches, who pursue different goals or use different research methods. Joint research projects but also networks such as the project “Creating Transparency” throughout Lower-Saxony or the Bundesarbeitsgemeinschaft Lernort Bauernhof [Federal Consortium “the Farm as Site of Learning”] are important hubs in this overall structure.
9. Inclusion of the topic “the farm as site of learning” in the educational media such as school books and teachers’ manuals

The traditional medium of the school book still has a key function in making a larger number of teachers aware of the farm as site of learning with its various potentials as to contents, didactics and methodology. The school book is still the basic medium in the classroom, which all students and teachers possess and which is also available to parents. In subjects such as general studies, biology, geography, business and economics, but also politics/social studies, there are direct points of contact to learning at the farm. The school book can provide basic information and methods for the purpose of preparing for and following up on a visit to a farm, thereby awakening an interest in on-site exploration.

Conclusion

Farms and their suppliers and wholesalers are valuable extra-curricular regional sites of learning with much didactic-methodological potential. In the scope of a future-oriented education, educational offers at the farm as site of learning may contribute substantially to developing specialized and cross-curricular, methodological and social competences. This contribution should not be underestimated.

In order to further intensify and qualify research work on learning at farms it would be desirable to link theory and practice of different academic disciplines more closely, such as: educational studies, agricultural sciences, social studies.

From a didactic-methodological point of view, the aim is to devise didactically well-structured learning offers which are geared to the participants’ developing competences as well as to evaluate these offers by means of empirical qualitative and quantitative research methods.

Literature


Woher kommt unser Schnitzel?
Milch, Kühe & Co.
Die Kartoffel – eine tolle Knolle
Didaktische Materialien
Unterrichtsmaterialien für die Sekundarstufe I. Centrale Marketing-Gesellschaft der deutschen Agrarwirtschaft GmbH. Bonn


Regionally linked and sustainable!? Factors for success and obstacles in constructing regional education networks

Gabriele Diersen

University of Vechta, gdiersen@ispa.uni-vechta.de

Abstract: Educational networks are booming. Their significance is nowadays emphasized in quite distinct connections and areas: Cooperation in the dual and three-layered system, cooperation of businesses with schools, joint training systems, learning regions, etc. (cf. Wilbers 2003). The cooperation pursues various goals, depending on the topic area. It is a general aim, however, to ensure greater quality and efficiency in education by cooperation and coordination of and directives for the individual actors. In particular, the academic research accompanying the BMBF project “Lernende Regionen – Förderung von Netzwerken” [“Learning Regions – Promoting Networks”] empirically proved the significance and effectivness of regional educational networks. What is evident and is a part of individual experience is the circumstance that goal-oriented cooperation and networks lead to a greater efficacy and a larger freedom of action. Due to the exchange and the joint work, the competences and potentials necessary in accordance with individual requirements and the general framework can be combined in order to optimize education. In contrast to this, however, there are also negative experiences in cooperation such as competition, exclusion and discussion/exchange without any notable progress.

The following paragraphs deal with the developments and insights derived from research in the area of educational networks and educational landscapes on the basis of experiences in the cooperation between the regional educational institutions RUBA e.V. (Förderverein regionale Umweltbildung – Agrarwirtschaft – Association Supporting Regional Environmental Education - Agriculture) and AGRELA e. V. (Arbeitsgemeinschaft Regionales Lernen Agrarwirtschaft – Consortium Regional Learning Agriculture). The analysis serves to produce conclusions with regard to the meaning, orientation, and design of the networking of regional educational institutions.

Key words: regional educational networks, networking, regional learning, extra-curricular learning, regional educational institutions

Introduction

“Learning regions / educational networks” have been a topic of discussion in the academic field and in matters of educational policy for about 25 years. The basis for this was established in the late seventies and early eighties when education was thought to be very important for endogenous regional development and for advancing economic innovation (cf. Derenbach 1982 and, in summary, Akademie für Raumforschung und Landesplanung 1993, Gnabs 2007, p. 297).

In a conceptual sense, the theoretical considerations merged in attempts at regionalizing education and in particular further education, as was implemented and tested for efficiency in individual regions such as the district of Dithmarschen, the city of Saarbrucken or in the metropolitan area of Hanover in the early nineties. This development was additionally fueled by inclusion of the East German states, where educational associations and associations for further education were implemented for the purpose of transformational assistance. In the nineties, these developments consolidated to form the concept of the “learning region”, which henceforth received much academic, practical and political attention and was pervasive as a steering model. The BMBF program “Lernende Regionen – Förderung von Netzwerken” [“Learning Regions – Promoting Networks”], which has formed the nationwide basis for networking in 72 regions since 2001 (cf. Gnabs 2007) contributed considerably to the aforementioned developments.

“Das Konzept der “Lernenden Region” schlägt vor, ähnlich wie im “Lernenden Unternehmen”, die Potentiale aller regionalen Akteure zu mobilisieren und zu nutzen, um
Regionalentwicklung “von unten nach oben” selbstorganisiert und selbstverantwortlich in die Wege zu leiten.” (Stahl 1995, S.25) [“The concept of the “learning region” suggests mobilizing the potentials of all regional actors, similar to the “learning company”, and using these potentials to initiate regional development “from bottom to top”, in a self-organized and self-reliant manner.”]

**Cooperations, educational networks, and regional educational landscapes – a definition**

Cooperation is the term used to refer to at least two partners working together, while each of them is generally in charge of a certain task area. Cooperation can be bilateral or multilateral but – under the joint objective – it will always be organized in such a manner that the work is shared. Such cooperations are also referred to as strategic cooperations. It is characteristic that they usually do not have an organizational core, i.e. no institutionalized management level or level of moderation.

In educational networks, schools are linked with other schools and/or partners outside of school. They combine competences and resources in order to achieve their goals jointly. The organization and control is more binding than in the case of cooperations in which the individual partners retain their complete autonomy. Networking at this level is motivated by achieving synergies through transferring and combining knowledge, competences and potentials.

Regional educational landscapes lead all parties concerned to a joint development process. Networking, as a regional goal, is now aimed at all schools and educational institutions with which children and adolescents may come into contact (on site) in the course of their educational biography. For reasons of dimension, if not for others, such a process must be controlled systematically and requires an organizational core which sees to tasks related to mediation and coordination. The spheres of action of an educational landscape include compiling a regional educational program, introducing quality management both for the region as well as for the individual school, balancing the budget, employing personnel and implementing further education (cf. Brockmeyer 2004, p. 59 and Minderop/Solzbacher 2007, p. 4).

**Regional educational networks – experiences and insights of accompanying academic research**

As central public educational institutions, schools, for instance, have always had networks which came to exist in a more or less “natural” manner. Fig. 1 shows the spectrometer of networks of a vocational school, recorded in 2003. This reveals with how many partners schools interact and cooperate. In the depicted example, cooperation manifests itself in eleven areas with public and private institutions. The intensity and commitment of the network between individual schools and their surroundings vary greatly.
In the following section, experiences and insights with regard to networking in education are quoted from the academic accompaniment of the BMBF project “Lernende Regionen” [“Learning Regions”], the educational network “Region des Lernens” [“Region of Learning”] of the Ministry of Education of Lower-Saxony and the pilot project “Aufbau und Nutzung von Bildungsnetzwerken zur Entwicklung und Erprobung von Ausbildungsmodulen in IT- und Medienberufen” (ANUBA) [“Establishing and Using Educational Networks to Develop and Test Training Modules in IT and Media Professions”].

With regard to the BMBF project “Learning Regions” which operated in over 70 regions from 2001 to 2006, (Dobischat 2007) showed that the networks were set up as follows:

20-40 actors respectively are involved in
- 33% institutions for further education
- 10% colleges and
- 7% businesses

Only 50% of the networks were able to involve a business although 80% considered this to be very important. This point is also described frequently in other studies stating that cooperation with privately owned businesses is only successful to a low percentage. 50% of the consumers of the emerging service offers are public institutions and 40% are businesses and private individuals.

Interviewed parties predominantly quote identification with the goals of the program, an interest in establishing and promoting cooperation as well as optimizing their own work as cause and motivation to participate in educational networks. These are personal interests.
throughout, which explains why networking is generally carried out without explicit financial reward and/or at the expense of the respective network partners themselves.

The fields of activity of regional educational networks primarily lie in the cooperation between schools and businesses, in furthering highly gifted students, in occupational orientation, educational guidance for migrants as well as developing competences and strengthening older people for their professions.

The areas of information, counselling and quality management are primarily provided for and implemented by academic supervision, i.e. outside the network. The actors in the network see positive effects of networking in generating new sources of information, raising their own public profile, improving their image and unlocking new topics and fields of work for their own work in the area of education. They view networking as positive, in particular because they feel sufficiently informed and involved. Their own ideas and visions are incorporated into the process and the networking and they generally confirm the increase in significance of the networking for their institution.

On the basis of academic research, Dobischat 2007 makes the following recommendations for successful work in regional educational networks:

- openness towards existing and new partners
- prioritizing tasks
- developing a regional overall concept
- boosting educational marketing
- providing information and guidance (professionalizing advisory skills)
- setting quality standards
- re-enforcing a quality discussion within the network
- supporting an intensified development of transfer concepts

The recommendations in particular are aimed at the goal of the networks continuing beyond the periods of sponsorship. This is only rendered possible by professional work with regard to quality and customer-orientation.

Examples from practical experience with the educational network “Region des Lernens” [“Region of Learning”] show that management of the regional networking goes beyond a cooperative decentralized administration. According to this, the key to success lies in establishing and consolidating network structures directed at new forms of division of work and in which dyadic relationships are increasingly replaced by multiple relationships. (cf. Müller 2007, p. 209)

On the basis of long-standing experiences in this project, Müller 2007 moreover lists the following basic requirements of educational management at a regional level:

1. Taking into consideration and acknowledging different interests / logics of action of the network partners.
2. Devising decision-making structures which are directed at a consensus.
3. Installing a “neutral control entity” and supporting the network partners with planning instruments.
4. Regional educational management composes, directs and reflects the educational landscape with regard to the structural development process as well as terms of content of the participants.
5. A quality management system is implemented as an integral part of educational management.
6. Specific givens and problem situations of the region are taken into account and/or are taken up.

Moreover, three essential conditions are specified for the sustainability of regional educational networks (cf. Müller 2007). The various educational actors and educational initiatives carry out their core operations in inter-connected contexts and on the basis of jointly and consensually developed overall concepts. The regional and supra-regional decision makers in politics and administration consider a network devised in this manner to be a necessary instrument of regional educational policy and part of a communal
employment policy and social policy. And finally, the provision of personnel and material
resources for executing operative tasks in regional educational management is an obligatory
part of a communal administration.

**Developing competences by active networking**

On the one hand, networking demands certain competences from the actors, on the other
hand, the networkers develop competences through working together. Hence the initial
hesitation to join a network may lead to an increase in confidence in one’s own strength and
an increase in trust in the network partners. Fig. 2 illustrates further examples on the basis of
Lohmann 2007.

Not only do the parties concerned increasingly understand how to face up to new challenges
but also to link “invisible” ideas to form new solution models – listed by Lohmann 2007 for
schools and for individual lessons – and to develop these further.

Fig. 2. Competence development by networking in the educational field.
Source: illustration by the author (altered)

Gnahs 2007 suggests indicators in order to measure the educational potential of a “learning
region” and for the educational landscapes developing in this region. These measured
variables serve the purpose of formulating goals in an appropriate manner and of assessing
the efficiency of the network with regard to learning success and sustainability.

**Table 1.** Indicators for measuring the educational potential of a region (author’s own concept in accordance with
Gnahs 2007)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Survey/measured variable</th>
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<tr>
<td>Network quota</td>
<td>Quota of actual members to prospective members</td>
</tr>
<tr>
<td>Third-party funds</td>
<td>Amount of the third-party funds flowing in for</td>
</tr>
<tr>
<td></td>
<td>educational purposes</td>
</tr>
<tr>
<td>Satisfaction of the employers</td>
<td>Interview with a satisfaction scale comprising the</td>
</tr>
<tr>
<td></td>
<td>Following points of inquiry:</td>
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<td>--------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- quality and quantity of offers</td>
</tr>
<tr>
<td></td>
<td>- flexibility of the suppliers</td>
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<tr>
<td></td>
<td>- willingness to cooperate</td>
</tr>
<tr>
<td></td>
<td>- readiness/willingness to exchange information</td>
</tr>
</tbody>
</table>

|                                | Interview with a satisfaction scale comprising the following points of inquiry:              |
|                                | - suitability of offer concerning needs and requirements                                      |
|                                | - accessibility of the offer                                                                  |
|                                | - quality of the offer                                                                         |
|                                | - organizational framework                                                                    |

|                                | Interview with a satisfaction scale comprising the following points of inquiry:              |
|                                | - working conditions                                                                          |
|                                | - possibilities for further education                                                          |
|                                | - participatory and decision-making opportunities                                              |

|                                | Traditional performance quotas such as kindergarten quota, quotas at the high schools Hauptschule, Realschule, Gymnasium as well as quotas of high school graduates, university student quotas and quota cover in further education |

|                                | Promote of educationally disadvantaged groups with regard to the educational offer:         |
|                                | - participation of women and girls                                                            |
|                                | - participation of migrants                                                                    |
|                                | - participation of people with handicaps                                                       |
|                                | - participation of workers                                                                     |

|                                | The educational potential of a region manifests itself in whether new trends are taken up and actively pursued, for instance |
|                                | - more self-directed learning and learning that is integrated into actual work processes       |
|                                | - more computer-based and application-oriented learning                                        |
|                                | - plurality of the approaches to learning                                                      |
|                                | - …                                                                                           |

|                                | Procuring an expert opinion via assessment or employment of a jury                           |

**Network construction from the perspective of a regional educational institution. The example of the Förderverein Regionale Umweltbildung Agrarwirtschaft (RUBA e.V.) [Association Supporting Regional Environmental Education – Agriculture]**

In order to transfer the presented results with regard to networking at a regional level to the work of a regional educational institution and to render the results useable for this purpose, I will first of all present the fields of work, the structure and development of RUBA e.V.

The Association RUBA e.V. aims at supporting regional environmental education in school and outside of school, with a focus on agriculture, forestry and the food industry. Educational offers with agricultural contents are devised and carried out. In the process, curricular and extra-curricular teaching and learning projects are supported which enable children and adolescents to experience the agriculture typical of the region and which encourage action to protect the environment. This is achieved in particular by
- presenting a realistic picture of agriculture,
- imparting knowledge with regard to the correlations of natural cycles and economic demands
- increasing the transparency of food production

The Association was founded in 2003 by thirty agricultural representatives including suppliers and the food-processing industry as well as by different educational institutions. A stable network providing opportunities for cooperation has been established to date, which serves as a basis for intensive educational work. Currently, over 100 activities/events are carried out every year with approx. 3,000 participants. In addition to school projects, in-depth events for teachers and farmers are offered. Kindergartens, family circles, associations and other private groups account for the visitors as well.

The establishment of the first learning facilities at the farm Espelage in Telbrake in 2005 proved to be a milestone in the development. Two additional learning facilities have been established so far. The successful partnership between the Kreislandvolkverband Vechta and the University of Vechta, ISPA, department “Learning in Rural Areas and Environmental Education” has been and remains essential for successful work. This partnership forms an ideal bridge between the areas of “agriculture” and “education”. Moreover, the honorary involvement of the association’s management board is of the utmost importance.

In addition to the above, there is network bonding with 19 partner schools as well as with the supporting companies who are invited to an exchange of views on a yearly basis, who receive information on a regular basis and are offered further education options by the association. The network partners receive information on the association twice a year via newsletter. Representatives of the partner schools meet regularly in the scope of associated school meetings and are moreover systematically invited to further education offers for teachers, in the course of which new topics and evaluation results of the educational work as well as academic insights into extra-curricular, regional learning are presented. The supporting business enterprises, organizations and institutions are invited on a regular basis to meetings of sponsors as well as to educational seminars for business representatives. Participation in fairs, exhibits and regional festivities constitutes an integral part of public relations, in addition to local media reporting. At a regional level, the association has joined further networks: “Lernende Bioenergie-Region Südoldenburg” [“Learning Region of Bio-Energy South Oldenburg”] since 2009 and “Schulportal Oldenburger Münsterland” [“School Portal Oldenburger Münsterland”] since 2010.

At a national level, RUBA e.V. is a member of the Bundesarbeitsgemeinschaft Lernort Bauernhof e.V. [Federal Consortium “the Farm as a Site of Learning”] and is actively involved as a regional educational institution in the project “Transparenz schaffen – von der Ladentheke bis zum Erzeuger” [“Creating Transparency – from the Shop Counter to the Producer”], a cooperation project and an educational project for Lower-Saxony and Bremen. It is in particular this latter initiative which brought about an intensive and regular exchange of information and of experience with other educational institutions and led to a certification.

In addition, the network boasts an intensive relationship with the significant institutions in agriculture and the food industry as well as with the educational system via the main partners in the network who are directly and indirectly active at the educational institution (Kreislandvolkverband Vechta and the University of Vechta, board members). Synergies develop because the interests of the association are thus represented in different areas of the respective work context. After all, each member of the network has a working environment and connections which help to address certain goals and concerns in a target-oriented manner.
Networking is organized by way of regular work meetings (9 meetings in 2009). Permanent responsibilities and structures were established at different levels. A project management was installed by the University of Vechta, department “Learning in Rural Areas and Environmental Education”. The association’s management committee and the meeting of members are also the steering committee.

The existing network connections may be depicted in the form of a network spectrometer for the regional educational institution RUBA e.V. just as presented above for schools. The connections are surprisingly varied. In most cases, they do not constitute any binding work relations. It must be noted that RUBA e.V. may be considered a subsystem of the regional educational network – practically a small network within a large one. It is therefore interesting to transfer the presented research insights onto this structure.

**Possibilities of transferring the insights for the purpose of assembling and developing the networking of RUBA e.V.**

Many points described by Dobischat 2007 with regard to the characteristic composition of regional educational networks also apply to the network of RUBA e.V.: RUBA operates in a typical sphere of activity of “cooperation between school and business”. The triggers and motivating factors for the parties concerned are identification with the aims of education and an interest in establishing and fostering contacts as well as optimizing one’s own work (this applies in particular to schools and teacher but also to farmers). The department “Learning in Rural Areas and Environmental Education” of the University of Vechta attends the networks on an academic basis and is in charge of quality management. Among other goals, the involved businesses, partner schools, and other institutions strive to gain public awareness and improve their image through their activities with RUBA. It is not possible to state whether they are satisfied with the networking as no data from surveys is available in this respect. What is described as being very difficult for regional educational networks, directly involving
business representatives, has been achieved for RUBA e.V. from the very beginning. Such representatives are directly involved as founding members and via an independent network group of their own.

The development of competence as shown in fig. 2 is clearly observable in the network process of RUBA. Many inhibitions, in particular in contact with other educational institutions had to and have to be overcome: competitive situations, diffuse fears of loosing know-how and significance. Insecurity in dealing with schools and businesses, for instance, also plays a role. The members and coordinators learn to understand and include goals, motives, forms of conduct and attitudes of the network partners. This also applies to participation in other networks, for instance in the network “Transparenz schaffen – von der Ladentheke bis zum Erzeuger” [“Creating Transparency – from the Shop Counter to the Producer”] which operates throughout Lower-Saxony. Apart from creating an understanding for other partners in this network, it is also an aim to get to know and accept the administrative modes of operation.

A number of interesting thoughts on how to continue the work of RUBA e.V. may be inferred from the recommendations for successful networking given by Dobischat 2007. While the University of Vechta (department “Learning in Rural Areas and Environmental Education”) is fairly strong in areas of quality standards, quality discussions in the network, developing transfer concepts and also professionalizing the advisory competence of the partner, the other points have not been considered to date. The area “developing a rural concept” offers the greatest potential. Which direction shall the educational work take? How can this be illustrated, discussed and pursued jointly in the network? The recommendation to enforce educational marketing is no less interesting. So far, RUBA e.V. has not been active at all in this area as the opinion prevailed that it would not be possible to meet the demand thus generated. The educational work is based on funds raised from third-parties and on contributions by members alone. This is a great dilemma of many educational institutions in this sector. The service offered can only be financed to a very limited extent through public funds or membership contributions. Additional project funding is therefore necessary, the procurement of which is very time-consuming. The recommended openness towards existing partners and new partners is also an important factor. Competences such as confidence, trust, an openness to dialogue and role-awareness are necessary for an open stance in general, while such competences only develop gradually in the course of networking. It is important to bear in mind and to reflect on how important and promising an open stance is.

Müller 2007 points out further points of positive network development which are very well suited to developing regional educational networks and educational landscapes. They are also indirectly relevant for successful networking of a regional educational institution, as said institution is influenced by the development of the regional educational network. Müller's recommendations, however, cannot be applied directly to the networking of a regional educational institution but more aptly refer to more complex, large-scale structures as in the network “Creating Transparency”. Here, the interests and logics of action of the network partners should be and are taken into consideration; a coordinating entity is installed as neutral control entity, the network partners are provided with planning tools such as planning activities and events for defined planning periods, with suggestions for documentation and evaluation, and the educational work is certified (quality management). The control entity assumes the task of steering and reflecting the educational institutions in a developmental process emphasizing structure and contents. The control entity involves the regional and supra-regional decision-makers in politics and administration with the aim of implementing this educational segment permanently. Hence the recommendations given by Müller 2007 are already being implemented at this level.

**Creation of indicators and measurability of the performance of regional educational networks**

RUBA e.V. carries out inquiries and evaluations on the educational work performed by the association on a regular basis. In the process, participants are interviewed on their satisfaction in different categories. Moreover, the learning progress is analyzed in connection...
with the teaching and learning methods. The qualitative and quantitative analyses illuminate the quality of the practical educational work on site and are also used in the scope of national and international studies. The acquisition of shaping competence can be substantiated empirically as can the formation of a regional identity by measures for regional learning in the fields of agriculture and environmental education (cf. Schockemöhle 2009).

The form and intensity of the networking, the establishment and expansion of the educational work on site has previously hardly been examined by RUBA. The indicators listed by Gnahs 2007 for the educational potential in learning regions, however, do not pose a suitable basis for measurement and assessment at this level. For the greatest part, the indicators do not cover the measured areas which are essential for the actors. The indicators “network quota” (quota of actual members to prospective members), “satisfaction of the users”, “taking up trends” and “expert assessment” may generally be of interest. Measured against the interest in insights for this implementation, however, the time and effort required for conducting such a survey on these indicators appears too high for the most part.

**Conclusion**

For regional educational networks, detailed insights with regard to set-up, structure and development conditions can be derived in particular from the accompanying research on the BMBF program “Lernende Regionen – Förderung von Netzwerken” [“Learning Regions – Promoting Networks”]. It was demonstrated by example of RUBA e.V. as a subunit of these networks that it is in parts possible to apply these results to regional educational institutions and that doing so yields interesting thought-provoking impulses for designing the networking. Networking and network development are essential factors for shaping the profile of an educational institution.

The network relationships can be depicted in the form of a network spectrometer. The networking should be designed in an open manner, educational marketing should be carried out and a general principle should be devised for the work. Moreover, basic tasks consist of specifying quality standards and leading a quality discussion.

The trend towards development of networks will presumably persist and society as well as partners in the educational system will increasingly build up competences in this area. As far as the parties requesting educational offers are concerned, this will lead to their wishes being accommodated and implemented more systematically in a conceptual and organizational sense. The following theses may be formulated on the basis of these observations:

**Thesis 1**
Regional educational institutions are segments of regional educational networks and these, in turn, may be parts of regional educational landscapes.

**Thesis 2**
The structures and functioning of these network segments are similar to those of the entire network (regional educational network). Therefore, academic results from accompaniment of the learning region may be applied to shaping the networking of regional educational institutions and/or may be used as impulses for network development.

**Thesis 3**
The quality of education increases with the degree of systematic and target-oriented networking.
Literatur:


