Rural action learning – Designed to promote competencies and strengthen participation

A study on the effectiveness of out-of-school learning on farms

Johanna Schockemöhle

University of Vechta, Institute for Spatial Analysis and Planning in Areas of Intensive Agriculture (ISPA), jschockemoehle@ispa.uni-vechta.de

Abstract: *Rural Action Learning is an educational concept for out-of-school learning in rural areas. Taking as a basis that on-site learning in the own rural area has a high educational potential and addressing the objective of promoting the participation of adults, young people and children at regional level, the concept of Rural Action Learning was developed, tested and evaluated in this research project. The evaluation results show that regional action-oriented learning promotes the identity formation and the acquisition of participatory competence, thus contributing effectively to the participation at regional level with particular emphasis on an education for sustainable development. A two-group pre-test and post-test design was used to evaluate the effectiveness of Rural Action Learning. Participants in learning activities were asked to complete a questionnaire before and after the activity in order to detect changes in the characteristics of regional identity and participatory competence. In addition, interviews with organizers of learning activities provided comprehensive data to identify factors that influence the effectiveness of these measures.*

Keywords: *education for sustainable development, farm education, regional identity, participatory competencies, action-orientated learning, regional learning*

Introduction

The empirical study focuses on the effects of out-of-school learning activities on farms, known as 'Rural Action Learning', which are directed at children, young people and adults. Though there are big differences between this form of farm education and typical care farming, particularly in respect of target groups and intentions, there are similarities as well. Areas in common include the methodology of learning activities and the general conditions of their implementation in rural areas. Since this study reveals important driving factors on the success of Rural Action Learning, which are closely linked to the structure and the conditions of implementation, it seems to be beneficial to present the evaluation results at the IFSA-workshop on care farming.

Issues and Objectives

Rural Action Learning is an educational concept which was developed on the basis of regional learning in accordance to Salzmann et al. (1995) and ESD (Harenberg and de Haan, 1999). The development, and the subsequent evaluation, was carried out using the following main criteria: objectives, contents, methods, original and medial encounter, didactical principles and organisation of the learning environment. The response of Rural Action Learning to these criteria is located in the field of tension between the conceptional differences and similarities of regional learning on the one hand and ESD on the other.

The concept is aimed at promoting the regional identity and participatory competences of children, young people and adults. The conceptualisation underlying these constructs is made clear through the model of the components of regional identity and participatory competence (see Fig. 1). Through the assignment of the components to cognitive, affective and active levels, the component model acquire a systematic relationship. The analytical definition of the concept of participatory competence reflected therein is oriented towards the corresponding competence model of

Harenberg and de Haan (1999). In regard to the use of the term 'regional identity', it should be noted that this has already been the subject of a controversial discussion, particularly in the field of geography (Blotevogel et al., 1987; Danielzyk and Krüger, 1990; Lalli, 1989; Weichhart, 1999). The work presented here interprets the term in the sense of spatially oriented identity as used by Weichhart (1990). In this way, it relates to one of the fundamental socio-psychological conceptions of identity, that is, personal identity or self-identity (Erikson, 1989; Krappmann, 1975). Regional identity is understood as a component of personal identity. It refers to the influence of spatial-physical circumstances on the development of identity and therefore on knowledge, convictions, ways of thinking, values, norms, behaviour patterns and actions which enable the individual to find orientation in social, ethical and physical space.

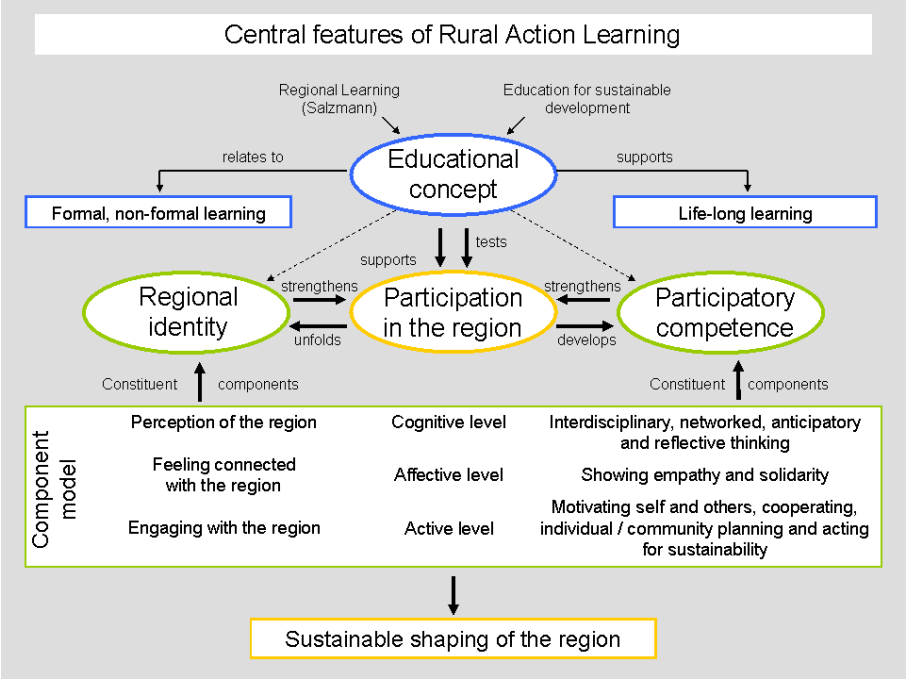

Figure 1. Central features of Rural Action Learning (Schockemöhle, 2009).

This focusing on the two main categories of participatory competence and regional identity can be justified in that by taken together, they enable participation (Harenberg and de Haan, 1999, p. 20). A significant feature of Rural Action Learning is that the acquisition of participatory competence and the building up of regional identity is not a precondition of successful participation. Rather, the concept is based on the assumption that both features develop and unfold only in regional participation, which can be integrated in various areas and forms as well as at different stages (Fig. 1). Here it is assumed that there is a close interdependency between the creation of regional identity and the acquisition of participatory competence such that both factors mutually condition and strengthen each other in the process of regional participation. Hence, the building up of knowledge, convictions, ways of thinking, values and behavioural patterns, which according to Erikson (1989) constitute identity, imply the acquisition of participatory competence at the same time. In addition, participatory competence, developed in such a way and along with regional identity, facilitates a continuation of the involvement in the formation of the individual's own local space (see Fig. 1). Therefore, Rural Action Learning promotes the testing of participation within the framework of learning activities and in this way contributes to the future shaping of regions.

What are the consequences of the goals of Rural Action Learning on the related concept of the learning activities? In line with the main criteria for concept development referred to above, the following section will further explore the constitution and implementation of educational measures so that a picture of Rural Action Learning can be clearly sketched out.

Referring to Salzmann et al. and the central subject area of ESD, regional phenomena and characteristics relevant to sustainability invariably represent the starting point of the learning process. These can refer, for example, to subject areas such as regional materials and economic cycles, local transport, residential development and land use.

In order to unfold the pedagogical potential of regional places of learning in out-of-school situations, action-oriented methods (beside the original encounter and including problem, situational and system-oriented learning in an interdisciplinary context) are an indispensable element of Rural Action Learning. To make this clear, the significant features of action-oriented learning according to Gudjons (2008) and Wöll (1998) are briefly listed here:

- Holistic learning
- Self-sufficiency and self-activity in learning
- Target-oriented and organised learning aligned to the creation of a product of activity
- Orientation to the experiences, interests and aptitudes of participants as well as their daily and future activity situations
- Opening of the educational institution via learning about actual problem situations
- Presentation and discussion of the product of activity in public or in the educational institution
- Reflection over action goals, execution and consequences as well as their evaluation
- Transfer of the achieved knowledge to situations in daily life or lessons.

The action-oriented methods applied in Rural Action Learning are based on partner and group work as social forms and on various - for each target group properly selected - forms of activity, such as exploration, project, learning stations, didactical games, experimentation, or scenario techniques. The implementation of the learning activity at the regional location, such as a crafts enterprise or in a residential quarter of the town, requires duration of three to four hours or up to several days, plus time for preparation and follow-up processing.

The focus of Rural Action Learning on action-oriented methods has largely been appraised by different authorities as promising success and as being effective with respect to target setting (Dyment, 2008, pp. 241 et seq.; Hart, 2008, pp. 19 et seq.; Læssøe, 2008, pp. 144 et seq.; Nagel et al., 2006, p. 35; Schusler and Krasny, 2008, pp. 268 et seq.). However, Meyer (2004, S. 80 et seq.) points out that the effectiveness of action-oriented learning has until now only been empirically investigated at a basic level. Within the framework of this project, therefore, empirically investigated statements on the effectiveness of action-orientation in Rural Action Learning will be made on the basis of the evaluation study.

Testing and evaluation of the concept

In order to test whether Rural Action Learning is able to effectively promote regional identity and participatory competence, there was a need for practical trialling. This took place within the EU project 'ALICERA' (Action Learning for Identity and Competence in European Rural Areas; Schockemöhle, 2007, pp. 6-11) as a field trial, that is, in the practice of out-of-school regional learning. In the five participating European project regions - Brittany, Latvia, Lower Saxony, Tirol and West Hungary, learning activities were developed and carried out based on the didactical aims of the concept. The contents related to the subjects of agriculture and food supply. The evaluation of randomly selected learning activities took place in the period of August 2006 to February 2007.

Underlying the evaluation was a complex evaluation design (see Fig. 2). The evaluation of effectiveness - the recording and assessment of data with regard to the effectiveness of learning activities - was carried out on the basis of a questionnaire study using a two-group pre-test and post-test plan. Participants in the learning activities were questioned immediately before an activity (point t_1), immediately after the activity (t_2) and then six months later (t_3) using a standardised questionnaire form in order to investigate changes at cognitive, affective and activity levels. The random selection of test persons was done by drawing them from a cluster sample, that is, in the participant project regions a random selection of groups (e.g. school classes, recreational groups) was fully surveyed in the investigation period.

Because there were three different target groups for the survey - children (9-12 years), young people (13 - 16 years) and adults (17 years or older) - it was necessary in each case to design three age-specific questionnaires for the pre-tests and post-tests. Additionally, experiment and control groups were set up for each age group. Here, participants in Rural Action Learning activities, characterised by a high degree of action orientation, made up the particular experiment groups. The control groups were recruited from participants in out-of-school regional learning projects with a very low level of action orientation. The groups were formed using the written information by the organisers of the educational measures in line with the central didactical guidelines which supported each evaluated measure in form of a memo. In total, 2,134 participants were questioned.

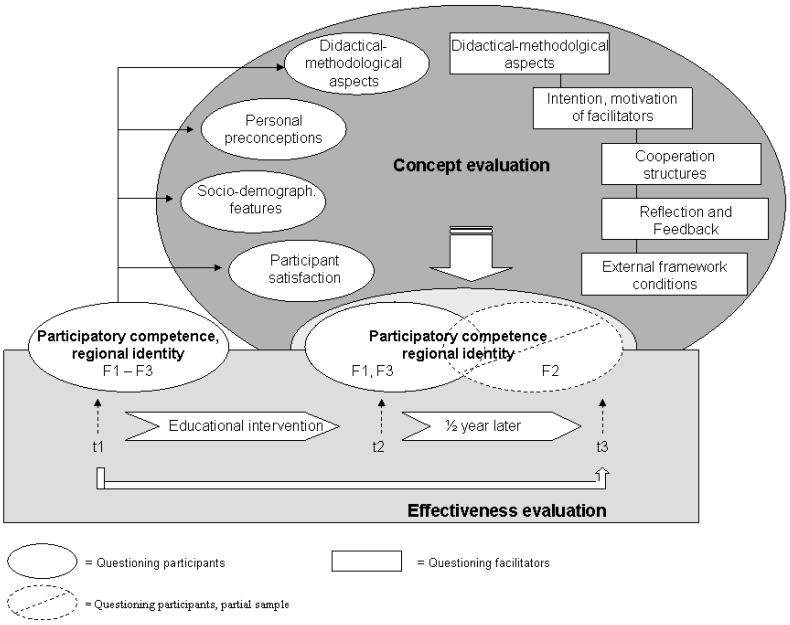

Figure 2. Evaluation design of the evaluation study (Schockemöhle, 2009, with reference to Bittner, 2003).

The questionnaire study also provided data for the concept evaluation. In this case, factors needed to be recorded and assessed which influenced the effectiveness of the activities. In order to get detailed and fundamental information on influencing factors, a parallel interview study was carried out. The interviews and the documentation were carried out by the author indicated. The evaluation of the data took place in adherence to intercoder reliability with two encoders.

The triangulate procedure was intended to produce data for the purpose of complementarity which would be mutually complementary and make a deeper interpretation possible. In all project regions, the organisers were questioned. The job of recruitment was facilitated through partner institutions which had good access to these groups via the offer of qualifications in the field of out-of-school, regional learning. In total, 18 people took part in the interview study.

Effectiveness of Rural Action Learning

The results of the questionnaire study prove that with respect to the stated objectives, Rural Action Learning is extremely effective. For all of the measured parameters (components of regional identity and participatory competence, see Fig. 1), the experiment groups indicate significantly positive changes across the age divisions. The only exception is found in the parameter values at active levels for children, which only improved slightly through Rural Action Learning (methodologically affected investigation error). In the control group, both slightly positive and slightly negative changes are found but these are mainly not significance.

The direct comparison of the parameter values following intervention between experiment and control groups indicate that it is predominantly the participants in Rural Action Learning who show stronger parameter values than the control groups. Parallel to this, the effect size (in accordance with Cohen) indicates a clearly greater level of effect in the case of Action Learning measures than for learning activities with less action orientation. Overall, it is found that the degree of action orientation in a learning activity has a strong influence on the effectiveness of measures.

This statement will be substantiated using the example of the measured changes in the value of cognitive and affective parameters of regional identity (perception/recognition of the region, connection with the region; brought together in the test scale 'Cognition & Affection_Regionally Specific', Cronbach's Alpha 0.860, 17 items) (see Fig. 3).

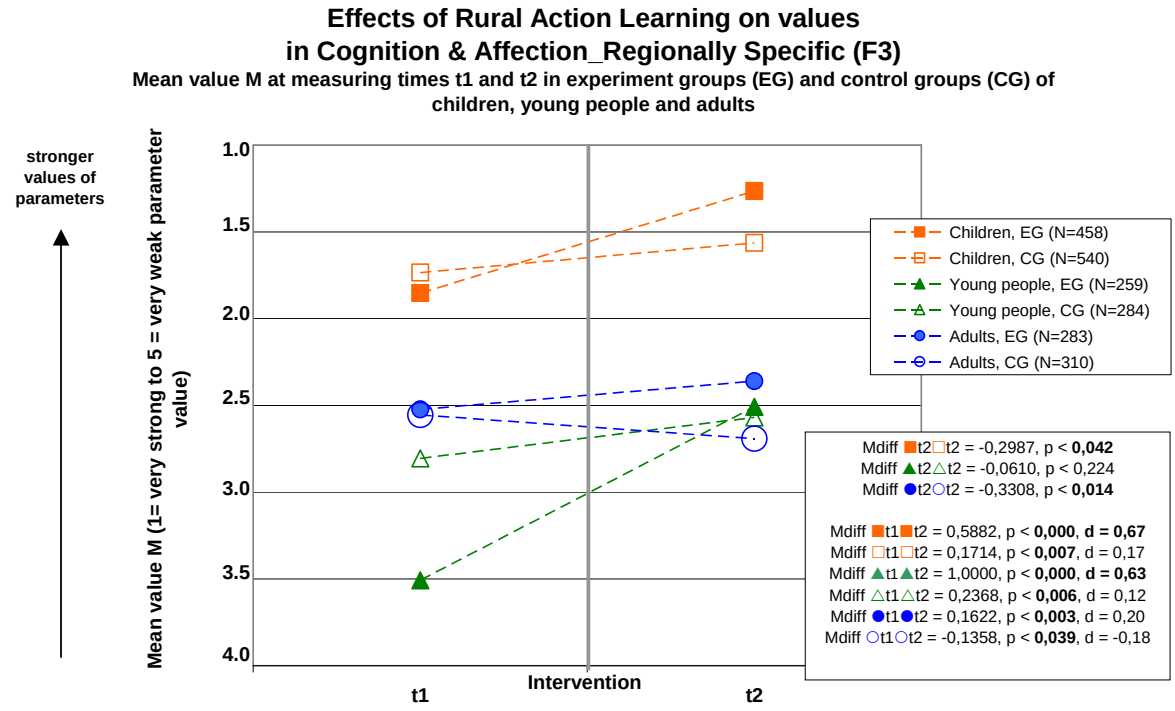

Figure 3. Effects of Rural Action Learning on values of 'Cognition & Affection_Regionally Specific' (Schockemöhle, 2009).

On the effectiveness of Rural Action Learning, the following hypothesis was stated: *Effects hypothesis 1:* Rural Action Learning brings about in the short-term stronger values in the parameter Cognition & Affection_Regionally Specific than an out-of-school regional educational measure with a lower degree of action orientation (H_1: $M_{2\,EG} < M_{2CG}$).

Description of the results according to Fig. 3: The mean value (M) for children in the measuring period t_2 was found in the experiment group (EG) to be $M_2 = 1.26$ and in the control group (CG) to be $M_2 = 1.56$. The difference amounts to $M_{diff\ EG\text{-}CG} = -0.2987$ for an approximately equal starting value in the measuring period t_1. This result is with probability $P<0.042$ significant. The situation is different with the young people sample: with $P<0.224$, no clear difference in the parameter values between experiment and control groups can be found. However, it should be noted here that there is no homogeneity of variance between the experiment and control groups with regard to the variable. The Levene Test is with $P<0.003$ significant. The noticeably high standard deviation from SD = 1.28 in the experiment group and SD = 1.13 in the control group, plus the particularly high mean value difference in the measuring period t_1 confirm similarly the variance heterogeneity. In order to be able to compare the extent of the effect of a measure from Rural Action Learning with an effect from a learning activity with less action orientation, the effect size d is calculated in accordance with Cohen ("d" is defined as the difference between two means divided by a standard deviation). An effect size of d = 0,2 indicates a low effect, d = 0,5 a moderate effect and d = 0,8 a strong effect. The results

show that with d = 0.63, a large effect with Rural Action Learning in the case of young people can be proven, whereas in the control group, there was no appreciable effect with d = 0.12 (Bortz and Döring, 2006, p. 627).

For the adult group, with P<0.014 there is a significant mean value difference between the experiment group and the control group. It is striking here that in the control group, there is a higher mean value (M_2 = 2.69) after the intervention compared to before the measures (M_1 = 2.55), meaning that the educational intervention had a counter-productive effect (interpreted as a negative attitude to the measure at the post-test in the period t_2).

In summary, the effects hypothesis 1 can be accepted for participating children and adults, while for young people it must be rejected. However, for young people in the experiment group, a much greater effect can be established in comparison with young people in the control group.

Effects hypothesis 2: Participation in an educational measure under Rural Action Learning in the short term results in strong changes in the parameter Cognition & Affection_Regionally Specific (H_1: $M_1 > M_2$).

In consideration of parameter changes in Cognition & Affection_Regionally Specific, highly significant results for the experiment groups can be proved in all samples: for children, the mean value changes from M_1 = 1.8529 to M_2 = 1.2647 (P<0.000) and for young people, the mean value decreases from M_1 = 3.5079 to M_2 = 2.5079 (P<0.000). For adults, the initial mean value of M_1 = 2.5226 decreases to M_2 = 2.3604 (P<0.003). In all three target groups, therefore, Rural Action Learning results in stronger values in perception of the region and in regional connectedness. The effects hypothesis 2 is therefore accepted. In particular, the young people group responds especially well to the measures: with M_{diff} = 1.00, this group shows the greatest parameter changes, although it should be noted that the parameter values prior to the measures were particularly weak. Here, the essential differences in the answer behaviour before and after a learning activity, measured on the answer frequency per scale point, are found especially in the cognitive area. That is, in reference to statements about knowledge of the region, more answers move along the scale in the desired direction after the measures than in the case of statements about connectedness with the region. This is also true for the answer behaviour of children and adults. In the affective segment, desired changes can also be achieved but these are at a lower level than in the cognitive area.

Assessment of the effectiveness of measures by the interview partners

These and other results of the questionnaire study were compared with data from the interview study. It can be established that the answers of the organisers of the learning activities (see Fig. 4) only partly match the results of the participant inquiry. Thus, the interview partners accord the didactical structure - and therefore the degree of action orientation also - a high level of influence on the effectiveness of the measures. It should be noted here that this result is barely reflected in practice. According to the interview partners, action-oriented learning is only seldom carried out; class discussions conducted through guidance and questions are the dominant form of lesson in out-of-school regional learning activities.

For the most part, however, the data from the interview study represents a complement to the quantitatively produced results. There are also contradictions between the two. This is particularly the case with the influence of the out-of-school learning location, that is, the effects of the original encounter in itself on the effectiveness of the measures. All of the interview partners declared themselves to be convinced that the personal, immediate and intensive experience at the regional place of learning such as an agricultural enterprise prompted strong parameter changes. The results of the questionnaire study relativise these estimates in that they prove clearly that learning on site is only effective in combination with action-oriented learning in the sense of the set objectives.

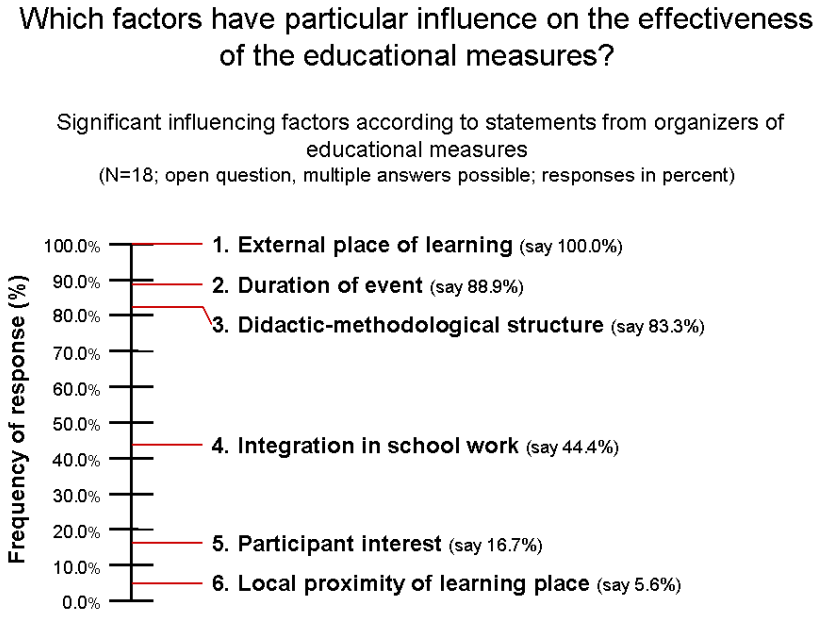

Figure 4. Factors which exert influence on the effectiveness of measures according to statements from interview partners (Schockemöhle, 2009).

Evaluation of the concept Rural Action Learning

On the basis of the evaluation results and with the aid of the criteria for concept development, an evaluation of the concept is presented here. Statements will be made as to whether the theoretically conceived concept can be confirmed or must, at least in part, be modified. In this section, only a selection of the acquired knowledge can be presented.

Evaluation of the aims: learning activities which were developed based on the concept of Rural Action Learning successfully enable the promotion of participatory competence and regional identity in those who take part and at all age levels. Younger participants tend to show stronger parameter changes than adult participants. In addition, the concept of the close interaction between regional identity forming and the acquisition of participatory competence is empirically confirmed by correlation tests. In consideration of the influence of personal preconceptions about the achievement of objectives, it can be established that until now, the concept does not sufficiently take into account the differentiated requirements of the participants. Corresponding detailed definitions need to be made in order to give ideas for differentiations, for example, with regard to objectives, contents and methods.

Evaluation of the methods: the theoretical focus on action-oriented methods has proved to be justified. The degree of action-orientation exerts a very high influence on the success of the measures. The discrepancy ascertained in this relationship between theory and practice must not lead to a weakening of the concept but should instead result in greater efforts carried out to give action-oriented learning more weight in the practice of out-of-school regional learning.

Evaluation of the significance of the original encounter: the original encounter is overestimated in the concept as an influencing factor. The evaluation results clearly show that the immediate, personal experience is connected in its intensity with an active self-acquisition and therefore can only unfold its potential in combination with action-oriented learning. A modification of the concept is needed in which the necessity for the targeted design of the original encounter is emphasised. The development and propagation of teaching and learning material which among other things would encourage self-motivated and independent on-site learning appears sensible.

Future prospects

These and further evaluations lead to a process of pooling and consolidation of propositional guidelines for Rural Action Learning containing the functions of quality criteria (see overview below). They are available above all for the dissemination of the understandings gained in this work to out-of-school regional learning in practice. Together with other teaching and learning material yet to be developed which will specifically take up the aspects of differentiation and action-orientation, along with measuring instruments which will enable the self-evaluation of learning activities, the guidelines will develop into a tool-box which organizers can use for particular learning activities. In this way, the transfer of the results will be supported in practice.

In some respect these results are also transferable to care farming since they include general findings on the use of the farm as a learning site. First of all, the structure of learning processes is just as important as the original encounter with the “living” farm. Thus a targeted didactical-methodological approach, which supports action-oriented and independent learning by clients, can be considered as one of the driving factors of successful care farming. Further findings of the study relate to other factors which have the potential to influence the effects of care farming: a thorough follow-up appraisal of care farming units in order to initiate client-side reflection, a close cooperation with institutional partners on the regional level for the purpose of sustaining the integration of care farming and the participation in further training by care farmers themselves so that they may develop their own professional strengths and deal with weaknesses.

Guidelines: Rural Action Learning supports the acquisition of participatory competence and regional identity formation, when...

- on-site learning is set up towards the didactical-methodological principles of action and problem orientation as well as system and situation orientation learning.
- within the learning activity, large and small action-oriented forms such as projects, station learning, learning games or experiments are applied.
- the original encounter is complemented through the use of media and materials so that independent learning is enabled.
- participants are supported at different levels in accordance with their existing values of participatory competence and regional identity.
- participants visit regional places of learning, not just once but repeatedly over several subsequent days and/or over a longer period.
- learning activities are restricted to not just the on-site performance but are also prepared and followed up. In particular, the articulation and reflection of the results through presentation and follow-up work are significant steps in the process of reaching the objective.
- there is close cooperation with regional partners in training and education so that a targeted integration of Rural Action Learning into institutional educational work can be achieved, and on the other hand, a vital educational network with diverse offers for life-long learning in the region can be established.
- cooperation with partners in both formal and non-formal areas can be established.
- life-long learning can be realised by the organizers of learning activities themselves, for example through access to professional and further training on the subject of 'Learning in the Region'.
- quality criteria for the work of the organizers are established and accepted by them.
- evaluation of the measures is constantly carried out with respect to objectives and quality criteria and the results are used for the further development of the concept and its practical implementation.

With regard to the significance of the understandings gained for future empirical teaching and learning research, there are several implications for contents and methods. Above all, it would appear necessary to research more thoroughly into the dimensions and value stages of the components of regional identity and participatory competence in order that more precise statements on the targeted support of participants can be made.

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