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Sectional Project

Experience Education for Sustainable Development inclusively

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EXPERIENCE EDUCATION FOR SUSTAINABLE DEVELOPMENT „INCLUSIVELY“ - AN EMPIRICAL EVALUATION OF THE ESD TRAINING EVENT „FAIR TRADE BASED ON THE EXAMPLE OF CHOCOLATE“ AT AN EXTRACURRICULAR TRAINING INSTITUTE

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Overview of the Research Project

An intervention study was conducted in the field of Didactics of Geography. It was empirically based on the explicitly inclusive extracurricular training institute “LBV¹ Umweltstation am Rothsee“ (English: “LBV Environmental Centre at Rothsee”; <http://rothsee.lbv.de/>), whose work supports the Education for Sustainable Development (ESD) initiative (German: Bildung für Nachhaltige Entwicklung or BNE), and on various lower secondary schools with an inclusion profile. The special interest of the Professorial Chair for Didactics of Geography is based on the main teaching and research focus of ESD and the fact that Geography must be considered a fundamental subject of ESD (see for example Bagoly-Simó 2014). ESD and Geography both aim to promote design skills and the ability to act in relation to sustainable development, whereby in the study presented here, sustainable development should principally be understood as an environmental and socially responsible development.

The main aim of the research project is to analyse and compare the inclusion-specific learning effectiveness of the teaching at both of the different types of learning facility. Teachers should therefore receive recommendations related to inclusive settings, in order to structure learning sequences in a goal-oriented way, to present learning processes in a varied manner, to verbalise and visualise learning material, explain contents flexibly and thereby offer varied arguments, to accurately organise knowledge and present it in an enthralling way and to offer

¹ LBV is an abbreviation for the Landesbund für Vogelschutz in Bayern or the Federal Association for the Protection of Birds in Bavaria

adequate support (cf. Brandl 2016), that is to say, to teach “effectively” according to Felten and Stern (2014).

The didactic concept of the study is based on a didactically pre-planned lesson on the subject of “Fair Trade based on the Example of Chocolate“, which was carried out and empirically monitored both at the extracurricular learning facility “LBV Environmental Centre at Rothsee” and as part of the syllabus taught at the participating secondary schools. An explorative analysis was carried out on the basis of the Fair Trade training event to determine whether potential differences in the competence gain by pupils with different initial learning strengths and weaknesses could be identified at the schools and extracurricular training centre, and whether it was possible to derive statements based on differences in the effectiveness of the training events in both learning environments. These should then, in turn, provide the basis for recommended actions that apply to the various stages of teacher training and therefore help to improve the inclusion-related quality of education.

In order to be able to measure the pupils’ learning progress in the area of education for sustainable development, a questionnaire based on the model of design competence by de Haan (2008) was developed as a pre/post test of the respective interventions at the school and environmental centre. The de Haan model is based on the OECD key competences, which aim to define essential competences of future-oriented democratic societies (cf. Rychen and Salganik 2003). The concept of competence defined during this process builds upon the definition by von Weinert (2002, 27 et seq.), according to which competences are characterised as “cognitive skills and abilities that are either possessed by individuals or can be acquired by them to solve specific problems, and the relevant motivational, volitional and social willingness and capabilities to be able to successfully and responsibly apply them in a variety of situations“. In addition, the concept of competence is based on a holistic understanding of competence, which encompasses “cognitive, emotional, motivational and social components, behavioural aspects, general attitudes and elements of self-perception” (de Haan 2008, p. 30). Three categories of competence were derived from this defined conceptual framework, which were then assigned to key competences from the areas of professional competence, methodological expertise, social skills and self-competence. The empirical component of the research project focuses on the area of professional competence and me-

thodological expertise (with an emphasis on “developing knowledge in a liberal-minded way and by integrating new perspectives”), which most closely corresponds to the research focus of Didactics of Geography.

What is the Current State of Research?

The question as to whether inclusive school groups should be taught in schools or extracurricular training centres is highly complex. This issue will continue to require further intensive investigation in order to be able to find an adequate solution. Nevertheless, the results of the explorative study presented here show that it is possible through research to gain diverse perspectives that can lead to an optimisation of teaching and learning opportunities. Special attention can then be given to precisely those aspects that enabled the pupils with greater initial learning deficits to significantly increase their learning progress. Finally, it is valid to say that such an emphasis should not only aim to improve the potential of inclusive lessons for all participants, but also to strengthen the extracurricular learning facilities as learning environments that give all attending pupils a “special” learning experience and, to some extent, also provide the other inclusive pupils with better learning opportunities compared to lessons that take place only at mainstream schools.

Conducting the Explorative Study

The study of the sub-project of Didactics of Geography is entitled “Experience ESD Inclusively. An Empirical Evaluation of the ESD Training Event Fair Trade at an Extracurricular Training Institute”. It was devised as an explorative evaluation study with a pre/post design (cf. Bortz und Döring 2006). A later follow-up test analysed the long-term effects. Initial organisational discussions with the participating secondary schools and the Rothsee environmental centre held in April 2016 were followed by a pilot study in the summer of 2016, which aimed to optimise the measurement tool, and then the main study in 2017. Two groups of 128 pupils (Rothsee environmental centre) and 114 pupils (secondary schools) respectively took part in the main study. Furthermore, pre, post and follow-up tests were conducted with a control group

in 2017. All of the pupils were in the seventh or eighth year and attending a lower secondary school in Bavaria. In order to identify differences in the initial learning strengths and weaknesses within the groups being analysed, two accompanying tests were carried out in social and emotional development and also cognitive development (cf. Goodmann 1997; Auer et al. 2005). The tests identified a total of 46 pupils with weaknesses in the social and emotional area and 87 pupils with weaknesses in the area of learning and cognitive development.

A questionnaire survey was used to measure learning progress in both sets of lessons. The pupils were asked questions in five categories, which were based on professional competence and media literacy as defined in de Haan's model (de Haan 2015) and covered the following skills:

The pupils:

- describe selected environmental and developmental problems and their causes;
- are familiar with and compare different approaches and concepts of sustainable development;
- outline concepts of social responsibility within and across generations;
- give examples of sustainable development;
- describe the biological and sociocultural diversity of the one world;
- present culturally diverse viewpoints and forms of knowledge (e.g. scientific, everyday knowledge) of global and local (un)sustainable developments by adopting the perspectives of different people, based on an example.

Key Findings

The evaluation of the study is currently in the final stage. The initial findings are of particular interest with regard to the following questions:

How does the learning progress of both groups differ?

The comparison of the average learning progress at the secondary schools and the extra-curricular training centre showed significant increases in both groups. In contrast, there was no significant increase in the average learning progress of the control group. The intervention was therefore successful in both learning environments, as it was possible to establish learning progress in both cases.

Are the inclusive ESD lessons at the extracurricular training centre more effective than standard school-based lessons?

The evaluation showed a continuous increase in learning progress both at the extracurricular training centre and in the standard school lessons. Significant learning progress was recorded in all sub-sections. Significant differences were identified in all test areas between both experimental groups on the one hand and the control group on the other hand, which confirms the effectiveness of the lessons with regard to learning progress. In contrast, no significant differences were found following comparison of the two groups “extracurricular training centre” and “secondary school”, neither with regard to individual sub-tasks nor with regard to the entire test. The general conclusion is therefore that a predominantly similar amount of learning progress was made by the pupils at the extracurricular training centre as in the standard school-based lessons.

Is there a difference in the learning progress made by pupils with different initial learning strengths and weaknesses?

The study found that pupils with weaknesses in the area of social and emotional development made less learning progress in comparison to other pupils across the entire range of skills assessed. Consequently, they achieved lower results relating to the sub-skill “describe biological and sociocultural diversity in the one world based on the example of cocoa farming and fair trade”, for example, whereby this skill is also considered a component of professional competence and methodological expertise in the competence model according to de Haan (cf. de Haan 2015) as well as in the Transfer Programme (2007). A further example was the subject “Sale of fair trade chocolate as a main reason for the development of sociocultural diversity of one world in respect to ESD”, which this group of pupils was unable to adequately comprehend. Furthermore, they were unable to draw the full conclusion that this development led to an improvement in the working conditions of the local smallholders. With regard to the development of options for individual action related to ESD, the group of children with greater initial learning deficits also lagged behind in their learning outcomes in the socio-emotional area. A possible reason for this could be that the knowledge necessary to provide a foundation for recognising concepts of sustainable development could not be acquired as quickly by this group of pupils as by those without initial learning deficits. The acquisition of

knowledge at a one-day extracurricular training event or in four lessons appears to be only partly possible due to time constraints.

The children with greater initial cognitive deficits also achieved lower learning outcomes in the test as a whole compared to the pupils with greater initial learning strengths. Significant differences were identified in two areas. These initially apply to the methods of role-play and the dream journey. In the role-play, the children compare different products and examine the differences between them. They present these differences to the class in a role-play of a television commercial with a poster of the advertisement. In the presentation, the girls and boys should be able to describe selected developmental problems and give reasons for them, which represents a complex cognitive achievement. The aims mentioned above should also be fulfilled:

- describe the biological and sociocultural diversity of the one world based on the example of cocoa farming and fair trade;
- identify the sale of fair trade chocolate as a main reason for the development of sociocultural diversity of the one world in respect to ESD;
- draw the conclusion that this leads to an improvement in the work situation of local small-holders

The pupils with greater initial learning deficits were not able to completely fulfil these aims.

Is there a difference in the learning progress made by pupils with different initial learning strengths and weaknesses at the school and the environmental centre?

If one only compares the learning progress of pupils with greater initial learning strengths, there is no significant difference in learning progress between the groups at the extracurricular training centre and those in standard school-based lessons. As a result, within the context of this study no specific teaching location can be recommended as a preferred solution for non-inclusive school classes, neither the environmental centre as an extracurricular training facility nor schools offering standard lessons. In contrast, a different picture emerges with pupils who have greater initial learning deficits. In several areas such as those listed below, significantly better learning outcomes are achieved at extracurricular training centres compared to learning in lessons at mainstream schools:

- familiarity with the concept of sustainable development
- explanation of fair trade as an example of sustainable development
- description of selected developmental problems and their causes in relation to fair trade

Conclusion

The question as to whether inclusive school groups should be taught in schools or extracurricular training centres is highly complex. This issue will continue to require further intensive investigation in order to be able to find an adequate solution. Nevertheless, the results of the explorative study presented here show that it is possible through research to gain diverse perspectives that can lead to an optimisation of teaching and learning opportunities. Special attention can then be given to precisely those aspects that enabled the pupils with greater initial learning deficits to significantly increase their learning progress. Finally, it is valid to say that such an emphasis should not only aim to improve the potential of inclusive lessons for all participants, but also to strengthen the extracurricular learning facilities as learning environments that give all attending pupils a “special” learning experience and, to some extent, also provide the other inclusive pupils with better learning opportunities compared to lessons that take place only at mainstream schools.

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