BIRDS: THE ELABORATION OF A RESEARCH-BASED, INTEGRATED SCIENCE LEARNING PROGRAMME

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Abstract: This paper portrays the participation of the Alexanderschule Vechta in a project, coordinated by Gróf Appony Általános Iskola (Primary School), Jászberény. This three-year project with partners from all over Europe aimed the development of a research-based education package for the topic of "Birds", where all involved teachers worked with innovative methods based on their countries' respective curricula.

Keywords: research-based education, science education, European cooperation

A three-year project with partners from all over Europe about a bird that at first glance seems to be grey and unspectacular caused a firework of impressions, experiences and insights. The following summary should make it clear that the Alexanderschule Vechta with its pupils and teachers talked a lot about birds during the project. However, the bird itself – which is the crane in our case - took a backseat during the project for us. In our opinion, the encounter of students and teachers as well as the development of concepts for scientific working progresses were more important. There was a lively exchange not only about general educational experiences, but also about life, culture and languages in terms of the respective countries. That is why the project has literally been "live". With the help of some photos and information, we would like to highlight the most important sections of the project. The following aspects had the effect that the rather abstract title "*BIRDS:* the elaboration of a research-based integrated learning programme" has turned into a sustainable project that gave us diverse experiences. WHAT IS TNE EXACT NAME OF THE EU TENDER THA FINANCED IT, IS THERE A LINK TO THIS PROJECT? The main goal of our common project was to develop a research-based and scientific edu-

cation package for the topic of "Birds". All teachers involved worked with innovative methods for scientific working on the basis of the countries' respective curricula. This is an important contribution for the development of scientific education in the purpose of European teamwork.

A crane, a migratory bird connecting countries
(Photo by Juliane Berding, 2018)

The Crane (Picture 1) - a bird which connects many countries with one another when we have a look at its migration patterns. What is the most important aspect of this bird? What makes it unique? Why does it convey so much mysticism? What sets it apart from other European birds? These questions, amongst others, led to the fact that the pupils did not only discover regional birds, but also the European diversity of this species. The interest for this topic could only be maintained on a high level for a longer period because the lessons were highly active-based and contained cooperative learning.

To formulate ideas and assumptions together, to do research, to observe, to experiment, to assemble knowledge in mind maps or exhibitions, to check everything precisely and to present as well as exchange the results – these scientific ways of working were trained within the project over and over again. That is why the pupils became more and more confident with scientific working methods, such as measuring, organizing and comparing.

Regarding research-based education, it demands clear and correct

data. The acquisition of these data and the correct analysis, needed a good preparation in order to secure valid insights. The integration of experts and exploring nature were essential for making necessary observations. Here, the applied methods, such as creating diagrams and tables were practised in interdisciplinary lessons. This led to the fact that the experience made could be transferred to other areas. In term of scientific-based education, it can be claimed that it needs to take the pupils' foreknowledge into consideration as an orientation. At this stage, it is important to do justice to scientific demands, even when materials were developed by children. Research-based and experimental lessons are a big challenge for teachers. But only by giving enough space for initiated learning situations that allow discovering and experimental learning, scientific-based lessons can become thrilling and motivating. This kind of education promotes the pupils' autonomy, their responsibility and a sustainable networking in terms of knowledge. The development and testing of a wide educational sequence in terms of a project topic of each school taking part is another highlight of this whole project. It demonstrates that scientific models can be conveyed to diverse scientific topics and that is why the implicit teacher training programme in all participants' countries is so sustainable.

Teamwork is a catchphrase for motivating education. Capacity for teamwork demands mutual tolerance, acceptance and appreciation. These abilities need to be integrated into every-day life in school, so that especially group and partner work activities can succeed.

Teamwork in a student camp
(Photo by Juliane Berding, 2018)

End products of teamwork at the camp
(Photo by Juliane Berding, 2018)

That mutual tolerance and acceptance can lead to impressive results could definitely be seen within the student camps of the present project (Pictures 2-3). Working on an exercise when there are language barriers is a true challenge and demands a lot of consideration, empathy as well as respect. The student camps were “learning for life”-situations.

Teacher workshops give possibility to show appreciation of each other’s work (Photo by Juliane Berding, 2018)

The teacher workshops (Picture 4) were not only important for making agreements in terms of the project. They were a worthwhile possibility to show respect and appreciation for the work that has been done at other schools by the respective teachers.

Although the pupils were only at the age of eight to twelve, their participation was essential in order to gain competences that might serve as a door-opener for their future life including the development of the following areas: autonomy, confidence, reliability, capacity for teamwork, handling of new media, acquisition of language skills etc. These abilities are the basis for being successful in future life, whether it be during their studies or in a job, in the home country, Europe, or even further away.

Within the frame of the project, unified evaluation strategies and methods have been developed for the scientific work in lessons and for an educational package alike. The united agreements are important components for the success of the project.

In conclusion, our experiences show that the participation in European education project, such as Comenius or Erasmus+ is not only an enrichment in terms of the pedagogic work by the cooperation with project

schools, but also for the European idea and for the future of young people in a united Europe. We would like to thank the coordinating Gróf Appony Általános Iskola, Jászberény for letting the Alexanderschule Vechta with its pupils and teachers take part in this project. The participation in this project has led to an intense examination of our region and a sustainable change in our teaching - especially concerning scientific subjects. Again, we would like to acknowledge and thank the coordinating institution, but also all other partners being involved in this project. We made a good team together! We, of course, would like to thank the European Union (EU) in Brussels, without whom such Europe-wide projects for schools would not exist. Without the EU, we would not have enough financial means in order to organise encounters like these for pupils and teachers.