

Kolumbus-Kids

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Explore → Inspire → Encourage

Though the question how to promote and encourage pupils best in school is often discussed, many ideas and concepts cannot be realised in everyday school life because of organisational reasons or lack of time. Disinterest, social isolation and demotivation may be an ultimate consequence if a pupil's talent is ignored or not recognised. One major focus of the project »Kolumbus-Kids« is therefore to develop and evaluate teaching units which focus especially on the concerns of highly-gifted pupils, so that an improved and sustainable encouragement is ensured. The course contents are not bound to the curriculum and are taught in the University of Bielefeld in authentic learning environments. In addition, the individual enhancement of social competences is an important part of »Kolumbus-Kids«.

The aim of the project is to prevent underachievement in gifted young people by teaching the participating children according to newest results of psychological and neuroscientific research. However, it is of major significance that we do not focus on the encouragement of able young scientist alone:

»Kolumbus-Kids« is a holistic concept which concentrates on the education of prospective teachers and already certified teachers as well as on research in the field of gifted education and general school improvement. The project »Kolumbus-Kids« is aimed for pupils, teachers and students in the Bielefeld area.

The main pillars of the project will be presented in more detail on the following pages.





Promotion of young, talented scientists

The early and constant support of students and the conveying of further competences play an important role in natural sciences. This is the reason why the children attending our programme "Kolumbus-Kids" get special tuition in the area of biology, mathematics, chemistry and physics to promote their talents. The motivation for acquiring new knowledge is increased by creating a place for learning characterized by continuity and also a demanding culture of learning. Various abilities are addressed like gathering new information and also understanding new information to present new contents correctly. The "Kolumbus-Kids" programme treats interesting topics in a special learning environment which help to promote the intense process of learning. While doing so, the students are enhanced to explore the world around them on their own. Various teaching aids, like terrariums and aquariums, a sea water facility, rooms for seminars and experimental sessions and good technical and material equipment offer the opportunity to explore natural-scientific phenomena. Besides the contents, also perception and presentation methods, and specialist competences should be

imparted. The goal is to show students how to deal with complex contents and problems. Beyond this, students are taught to refine their social skills in order to work effectively in groups. This supports the feeling of togetherness and a sense of responsibility.



The target is universally valid for all courses but the contents are adjusted to the age of students. The project »Kolumbus-Kids« started with students of year five with only one course per week. Even today, the lower grades present the basis of the project, but it expanded with now three separate courses per week. Due to the increasing demand and positive response, a further course for students of the tenth grade was initiated. This group called »Kolumbus Youth« participates in various scientific competitions. They were already awarded a prize. In addition, a further project for primary education was brought into being in summer 2010. This early promotion is particularly important and hence finds general approval.

There are different admission requirements for the projects. Whereas the pupils of the project »Kolumbus Youth« have to hand in a letter of motivation, the »Kolumbus-Kids« pupils of lower grades and of primary education have to attend in a natural-scientific achievement test. Besides the nomination by their school teacher, this test is the basic requirement for attending the project »Kolumbus-Kids«.



BIOLOGIE HAUTNAH

→ Special Offers for Schools



“Biologie hautnah” is a course emphasizing the experience of biology in a vivid way. It offers two seminars for different classes of students.

Both put a similar didactic emphasis on activity-oriented learning and on practical orientation but they differ in their topics dealt with.

School classes interested in attending such a seminar can sign up for it and come to university. In the meantime, Dr. Claas Wegner and his students participating in his didactic seminar prepare for the classes' visit. They acquire the subject-specific knowledge as well as the didactic background knowledge in order to be prepared as best as possible. In this process the main emphasis for the university students lies both on the autonomous planning of the session and the cooperation with their fellow students. This prepares the prospective teachers for their later working life. During the preparation time for “Biologie hautnah”, students learn how to acquire specialist knowledge but also to reduce it didactically for the purpose of creating an exciting but at the same time understandable lesson. During the school classes' visit at university, various experiments are performed. The pupils should be given a lot of personal space to discover the biological topics and phenomena on their own. If there are any questions, the students will always provide help and discuss the new knowledge with their groups of pupils.

Further information is available on “www.biologie-hautnah.de”.



MEER^{ES} - BIOLOGIE

Our oceans are places of actions of ecologically important processes, unique organisms and stunning phenomena. Hence it is obvious to bring this habitat with all its ecological connections close to the pupils. The university's sea water facility (containing 12,000 litres of water) offers an opportunity that a school does not have, because it requires a lot of time, and high technical and financial costs.

By this, the range of environmental-relevant topics could be widened. The sea water facility has got a water temperature of 10-12°C, which is similar to the temperatures in the North Sea. It was completely renovated at the beginning of 2011. Having direct contact to living animals influences the quality of lessons enormously on the affective level. Pupils get to know inhabitants of the Mediterranean-, the North and the Baltic Sea, which are often just slightly recognized on holiday and class trips.



Didactic courses of the biological faculty like "Meeresbiologie im Schulkontext", "Biologie haunah Sek I", as well as the "Kolumbus Kids" groups, use this facility frequently. The recognition of organisms and their classification into a system which is based on evolution, represent a major and important part of biological education. This is the reason why the groups of pupils learn about the marine flora and fauna, and the classification with the help of preserved specimen and real objects. Biological knowledge is deepened by examining real objects in case of animals' specific adaptations to their habitat. Hence the close observation of the ocean's inhabitants and their ecological interrelation with each other play an important role and are contents of many courses. Current environmental issues, such as environmental pollution, are discussed with illustrative examples for particular cases.



The sea water facility is also used for the education of students and teacher trainees. They are offered the opportunity to further their theoretical knowledge about marine organisms by earning first-hand experiences of these animals. Besides, students are able to write their BA or MA thesis about the educational work with the sea water facility. Creating teaching material and testing it with pupils is just one of various possibilities of including the facility into a school context.



Pre-Service Teacher Education

Another objective of the project »Kolumbus-Kids« is the additional training of pre-service teachers, certificated by the district government of Detmold and the University of Bielefeld, which has been developed and tested within the project itself. Students studying biology, chemistry and physics are given the possibility to attend both a theoretical and a practical course dealing with the promotion of different gifts and talents, which last for one semester each. The theory-based seminar covers two semester periods per week and forms the basis for the practice-oriented course that takes place in the following semester (six semester periods per week). Here, the students have the chance to put their knowledge into practice and work with highly-talented pupils in the university. The cooperation between the different faculties (biology, chemistry and physics) is a great advantage for the teacher training as it offers students the opportunity to acquire additional competences which are helpful, if not necessary, for their future life as a teacher. The students profit not only from the certificate course but also from the highly practical orientation as they plan, teach and evaluate lessons on their own. Scientific phenomena can be examined and explained from multiple perspectives. This is not only an advantage for the

talented pupils, who are given the chance to experience and understand science as a whole, but especially for the students as they get insights into various disciplines – which would otherwise not be possible to such an extent due to their individual combination of subjects.



Continuing Education for Teachers

The project »Kolumbus-Kids« includes studies focussing on gifted and talented education as well as subject-related research. The knowledge and experiences gained will be provided to interested teachers and can thus be integrated into their lessons. The main objective of the training is to give participants a basic understanding of different theories and their application to the identification and promotion of gifted young people. As promoting giftedness and talent within the regular classroom requires greater competences on the part of the teachers, help and assistance is given with particular respect to methodological and instructional issues of giftedness education. With the help of different case examples, the participants get the chance to develop strategies and methods for the promotion of gifted and tal-

ented pupils. Furthermore, concrete classroom and counselling situations are simulated and recorded for later analysis and reflection. Afterwards, advantages and disadvantages of each strategy will be discussed in the group.

Possible topics for discussions include:

- promotion and support of gifted and talented pupils
- recognising and identifying gifted children
- characteristics and behaviours of the gifted and talented
- nurturing gifted pupils in school and teacher competence



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Research in Teaching Methodology

»Kolumbus-Kids« does not only deal with the promotion, encouragement and further education of pupils, students and teachers, but also with didactical research and subject-related issues of interest. One of its major objectives is therefore the improvement of lessons and the analysis of learning strategies. The project »Kolumbus-Kids« itself has been evaluated in a longitudinal study, which was part of a doctoral thesis. The study was conducted with pupils of two grammar schools in the Bielefeld area, one of the groups tested functioning as a control group. As all pupils had to pass the same entrance test, the data could be evaluated easily. The »Kolumbus-Kids« were



not only compared with all pupils of the control group but also with their gifted and talented peers that could be detected within this group. In the end, the study showed promising findings in the field of motivational variables: Due to project activities, an increase in intrinsic motivation, interest and a stronger implementation of

learning aims and objectives could be noted. There were significant differences not only in the expression of these characteristics but in the children's intellectual development as well. Hence the influences on the pupils' learning success are manifold. Information in the field of natural sciences can be stored more easily so that the learning process is more effective and the incorporation of skill development more natural – to mention only one effect. Through the project activities, there is room for free development of the pupils' personalities as well as for self-directed learning based on curiosity and interest. The »Kolumbus-Kids« are intrinsically motivated and their talent for natural sciences, which is their potential, develops. Frustration and boredom are no longer present as the children joyfully deal with almost the entire range of biological topics. Due to their increased interest for natural sciences, important aspects such as information processing, creativity, sociable- and cooperativeness are fostered. On the one hand, this encourages and promotes the pupils, on the other hand, the topics and course's contents are optimised due to the creative ideas and ways the »Kolumbus-Kids« approach certain issues and problems. To sum up, the pupils participating in the »Kolumbus-Kids«-project have the chance to develop their potential and to shape their talent.

The project builds an important foundation for an extracurricular promotion of talented learners by confronting them with exciting topics and by allowing a first intensive contact with an academic institution. The pupils get to know the University of Bielefeld as an exciting and interesting place where they can develop own ideas for scientific research and put them into practice. We hope that the pupils' interest manifests during their school career and that the project »Kolumbus-Kids« provides a good basis for a successful scientific education.



Sponsorship and Cooperation

The realisation of the project »Kolumbus-Kids« requires cooperation and collaboration of numerous motivated and dedicated persons as well as generous sponsors who support the project. Thanks to their financial help, already existing structures of the project can be maintained and new materials and equipment can be purchased. This is a huge advantage for pupils, students and teachers as they have the chance to broaden their knowledge in the different parts of the project, and keep pace with emerging developments in modern science. If it was not for the involvement of sponsors, the »Kolumbus-Kids«-project would not be feasible.

Moreover, we are supported by institutions that do not only help with advice concerning public relations and -affairs but also by providing well-equipped conference rooms.

For more information, please visit our homepage www.Kolumbus-Kids.de or contact:

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Public Relations and Contact Information

»Kolumbus-Kids« was initiated in 2006 by Dr. Claas Wegner, who has not only planned but also constantly refined the project. In the past few years, it has been presented in various media reports (newspapers, radio and TV) and therefore became quite popular. Thus, it is not surprising that its development and research results are being discussed at expert meetings and symposia. Current information on the project is available on www.Kolumbus-Kids.de (see especially menu items "Referenzen" and "Medienbeiträge"). This website also offers information on the following topics:

- course reports
- registration procedure
- films which have been made in the course of the project
- special offers for schools and teachers

If you would like any more information, please feel free to contact Dr. Claas Wegner, manager of the project »Kolumbus-Kids«:

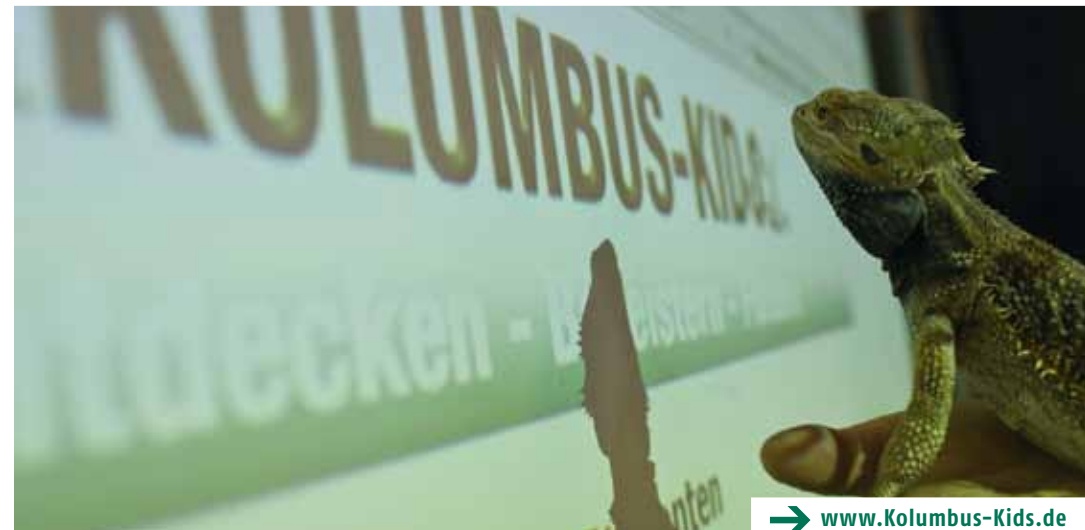
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