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Science linking with School School linking with Science

Interim Report, July 12th 2009

SCHNAU – pupils develop learning assignments for biology and chemistry

LEADING INSTITUTION

Teacher Training College Carinthia, Centre of Natural Sciences
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SCIENTIFIC CO-OPERATION PARTNERS

University of Klagenfurt, Institute of Instructional and School Development
University of Vienna, Austrian Educational Competence Centre (AECC) Biology
University of Graz, Institute of Chemistry

SCHOOLS INVOLVED

BRG Klagenfurt-Viktring, Carinthia
BG/BRG Mössingerstrasse Klagenfurt, Carinthia
BG/BRG Lerchenfeld Klagenfurt, Carinthia



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Austrian Federal Ministry of
Science and Research

SCHNAU – pupils develop learning assignments for biology and chemistry regarding their personal learning style and gender aspects

Actors

7B-Class of BG/BRG Lerchenfeld, Klagenfurt

5A-Class and 6C-Class of BRG Viktring, Klagenfurt

5A-Class und 5C-Class of BG/BRG Mössingerstraße, Klagenfurt

Supervision and coordination are accomplished by a team of the Subject Didactic Centre for Natural Sciences at the Teacher Training College Carinthia: Project Leadership: Mag. Sigrid Holub / Supervisors and teachers: Mag. Judith Horn, Mag. Peter Holub, Mag. Sigrid Holub, Dr. Helga Voglhuber / Scientists involved so far: Univ.-Prof. Dr. Peter Posch, Ass.-Prof. Dr. Gertraud Benke, Dr. Ulrike Baum

Innovation and Implementation

What cannot be discerned from the simple title, involves the pupils in an entirely new form of learning and research. During the course of the project, pupils of the upper grades develop lesson assignments for the pupils of the lower grades. At the same time, the supervising team studies, whether girls develop different lesson assignments from boys and whether and in what manner the different learning styles take effect. The theme range worked on in the project relates to class schedules. The difference to non-project classes lies in the teaching format of the subject. Through this project work the independent work of the pupils comes to the fore.

Retrospective on the First Project Year

The work groups were assembled according to similar learning styles (Kolb). In two classes girls and boys were separated. We attempted to develop learning content for the teams that provided the pupils' difficulties in their regular classes. This method accommodated the personal learning style of the pupils working on the project. It became clear that each group followed an individual path in both the kind of lesson assignment as well as the division of competences. Here we found equally positioned pupils as well as teams organized according to hierarchy. The work halted in some teams because they had no "idea providers". In other teams ideas were plentiful but implementation proved difficult.

For many pupils the development of lesson assignments provided an incentive to grapple intensely with the chosen themes. All these differences delivered the participating scientists interesting details relative to the research questions.

Seven teams were able to test their lesson assignments on lower grades. Thereby, many a pedagogic talent was discovered! The reports by lower-grade pupils were very constructive and are valuable contributions to optimizing lesson assignments in the second project year.



The Second Project Year

15 pupils have already signed up for the second project phase. They will, under subject didactic guidance, optimize the lesson assignments and then publicize them. Thereby, an entirely new work structure will emerge for the participating pupils and scientists. The co-workers of the Subject Didactic Centre are offering the young people – in small groups of four persons each – the opportunity to learn scientific publication from the ground up. As special appreciation, the pupils will be employed under work contracts and will also receive financial compensation for their efforts.

The publication of the completed work will follow under the name of the pupils and should offer a special incentive for later scientific activities.

The pupils as well as the participating teachers and scientists await with anticipation how this completely innovative project phase will run its course. For the young people, at least, a work-free vacation time is planned for now.

Comments on the project

Pupils

“It was positive that we were able to learn about another method of instruction. It was interesting to experience instruction from the perspective of the teacher. It was positive to work more concentrated and motivated, through one’s own responsibility. We have found our learning type.”

Supervisors

“I never teach the class before the fifth period. The high attention level holds, nevertheless. The pupils urgently inquire to what I attribute that the worked-on material has gained a higher significance to them and that they, therefore, really want to know.” *Mag. Peter Holub.*

“The pupils of the teams, whose team work functioned well, showed significant higher application than in regular class.” *Mag. Sigrid Holub.*

Scientists

“Personalization of instruction has become one of the most serious challenges for schools. The SCHNAU-Project is an important step to gain experience and substantive knowledge about the learning environments necessary for self-directed work on complex issues in science.” *Univ. Prof. Dr. Peter Posch*

“The SCHNAU-project was very exciting in the first year. The initial assumption that teams with different learning types would work up different lesson assignments was not confirmed. It appears, however, that learning types strongly influenced the actual work processes. With the elaborate materials and data that surfaced in the first year, we can now, in detail, go after the shape of this influence.” *Ass.-Prof. Dr. Gertraud Benke.*


Project timeline

The project run is spread over two years. Duration of the first project phase for whole classes: School year 2008/2009. Duration of the second project phase for individual pupils: School year 2009/2010.

Website

<http://www.ph-kaernten.ac.at/organisation/institutezentren/sekundarstufe/nawi/schnau>





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