Learning Experiences from a School Gardening Project in Sweden

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Introduction
A team of teachers at a secondary school in Sweden started a project on Health and Learning by Cultivation. Teachers in home economics, science and technology, and students in grades 6-7, were involved in various learning activities during the first year of the project. The aims of the project were to renew the school grounds and use it as an outdoor classroom with a focus on cultivation.

While observing the project, we focused mainly on the purpose of the activities, in order to increase our knowledge of theoretical and practical education in combination.

Research questions
• How is the vision of the school project realized?
• What are students' attitudes towards practical work and learning in the outdoor classroom?

Method
The principal and the teachers were interviewed in focus groups using semi structured questions at three occasions: before, during, and after one school year.

Students (n=72) responded to questionnaires at the beginning and the end of the school year. The questionnaire contained both open questions as well as statements, to which the students in a Likert scale were asked to agree or disagree.

Results
The team of teachers and the principal had a vision of creating and developing an outdoor classroom and using it in different school subjects regarding cultivation. The aim was to make the work performed outdoors a natural part of the teaching and to link theory to practice. The principal stated an expectation of seeing the students experience more function and purpose when working with their hands.

During the first semester, the teachers planned practical and technical work to enable cultivation in the spring. The students measured the area where the cultivation beds should be located, and made drawings before building models from sugar cubes. Two of the models were built in full scale at the school grounds during lessons in biology and technology. The technology/science teacher stated that being allowed to do this in reality, instead of just in theory, really embodies the essence of the class, since this work is strongly based on the core content and knowledge objectives of the curriculum in technology.

During the second semester, students planted seeds and grew various herbs and medical plants, and the teachers spoke about the link between cultivation and the curriculum. The teachers believe that the cultivation project will affect students' knowledge and understanding of the plant cycle when they experience first hand planting seeds and observe the development of the seeds. The teachers also think that when working in certain subject areas, they will be able to connect theory to the students' practical experiences in cultivation.

The results of questionnaires 1 and 2 showed however that students' attitudes were not significantly changed during the school year as a result of the project.

Although most of the students stated that they enjoy working with practical applications during class time (Fig. 1), more than half the students found the cultivation project “boring”. What specifically was perceived as “fun” or “boring” varied among them, but generally constructing cultivation boxes, planting the seeds, and student collaboration was “fun,” whereas planning, digging, weeding, and being “forced to work hard” was “boring.”

More than half of the students did not enjoy being taught about cultivation in the outdoor classroom (Fig. 2) and stated that their science knowledge did not improve (Fig. 3). Most of the students did not believe that they learned a lot during the cultivation project (Fig. 4), but those few students who said they did gave the following examples of what they learned: drawing models, construction with bricks, cultivation, the amount of water a plant needs, names of different plants, and photosynthesis.

Discussion
The analysis of the results is still in process.

Acknowledgement
Thanks to The Nature School in Lund and Malmö University who funded our study. Special thanks to RCE Skåne for recognizing this research as a RCE project.

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