

IT enhanced education in outdoor education

In Helsingborg we have started a research project on how to combine an outdoor educational practices with IT technology. It's called the VASS Project - The Virtual World Meets the Authentic World in Sensuous and Integrated Learning.

Partners involved are the SICS East Swedish ICT (formerly Santa Anna) and the National Center for Outdoor Education (NCU) affiliated to Linköping University and Miljöverkstaden and West Ramlösa school in Helsingborg. The project will run for three years and aims to evaluate how the combination of new IT technology (iPad and place-based learning points) and outdoor education can benefit students' learning in the compulsory school context (the year 4, 5 and 7) The project has received 1.3 million kr. funding from the Marcus and Amalia Wallenberg Foundation.

Experience shows that you can motivate students by giving them different experiences in places other than the classroom. We complement teaching inside school with different learning environments outdoors. It will be an interesting combination when we work both in the classroom environment and in the outdoor environment with all the sensual experience and new information technologies. We consider a model in which a work area is prepared in the classroom. Then we go out with the students and get different impressions and experiences that can trigger the learning process and the reflection in action. Work will continue inside the school to establish and communicate learning. The project will investigate how IT and outdoor education can work together in the learning process, and on the authentic site experience can be enhanced with new IT technology. Experiments in this direction have previously been made, but earlier projects have not integrated it tightly with an established curriculum for compulsory school, which is our clearly stated intention to do.

Previous research (1) has shown that one of the main benefits of computer augmented reality offers the opportunity to present information to the user in the situation and context in which he or she is. Applications can be used for different media events by adding text, pictures and sounds in the user's field of view. It becomes possible to create a combination of two different perspectives – for example to add historical information on top of the phone camera's current image of the environment. As we approach a place and our mobile device receives a signal via GPS we are in the right area, an event in the mobile device can be triggered. For example, the sound of carts rolling over cobblestones can be heard if we are approaching an old marketplace. When we direct the camera of the mobile device toward a deployed visual marker you can see what the market place looked like 200 years ago. But this is just an example! We want to emphasize that it is up to the teacher and students what events are triggered in the mobile device. It's a challenge to not just give students information, at different places, but also promote student activities. One goal with the project is to develop an application that is flexible and useable in different contexts. Through these examples we want to show that there are many different uses. We also believe that many, if not all, school subjects can have use of this new tool.

We also consider setting together a family of applications that make up a platform, or a toolkit, to stimulate learning both inside and outside the school. Applications will help students to accumulate different experiences in different authentic environments and then provide a basis for future learning. Applications can also assist students in documentation and presentation of their work. A development of the city's communication with citizens can be supported in this project.

(1) Nilsson, S., Arvola, M., Szczepanski, A., & Bång, M. (2012). Exploring Place and Direction: Mobile Augmented Reality in the Astrid Lindgren Landscape. In *Proceedings of OzCHI 2012*. Melbourne, Australia, November 26–30, 2012. ACM Press.



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