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Use of video-reporting of practical activities and study-visits to science and arts museums as tools for developing and spreading creative expertise in primary science teacher education

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Abstract: Preparing future teachers to use different contexts to organise science learning is an important part of primary teacher education in Sweden. Outdoor environment and science museums are often used for this purpose. This presentation reports the study summarising my teaching experience on the use of video-reporting of practical activities and study-visits to science and arts museums during science-orientation courses for prospective primary school teachers. Focus of these activities was on developing of a creative side of teacher professional competence. Students work with open practical problems outdoors, preparation of scenarios, video-recordings with mobile phones, editing and reporting of results made these course activities real exercise in creativity. Visits to science and arts museums created additional stimulus to instigate students’ creativity. The course evaluations reported high satisfactions of the students with these forms of course-work.

Keywords: outdoor physics, creativity, primary teacher education

1 Introduction / Objective

Practical activities constitute a standard part of science courses for future teachers in most of countries around the globe [1]. Usually, they are conducted in laboratory or classroom settings under guidance from the course instructor and leave little space for students’ creativity [2]. My aim was to change this situation and create a new learning arena encouraging students’ creative solutions in doing practical work in science.

2 Process

Open authentic practical activities were suggested to for students to be conducted outdoors [3], for example on play-grounds, which should be reported with help of a short video (5-6 min). Study-visits to science and arts museums aimed to give students broader perspective on possible ways of presenting science for public. Thus, video-reporting of practical activities along with study-visits to museums were used as resources for busting students creativity in doing and communicating science.

3 Conclusions

Students’ presentations of implemented practical activities have been reported in broad variety of forms, including fairy-tails, competitions, instructional videos, etc. They provided different didactical solutions how their videos can be used in science classrooms, as introduction to new study-topics, explanation of a phenomenon, a point of departure for flipped-classroom arrangement. Students showed possible ways to connect these activities to the national educational policy documents, science curriculum and suggested theoretical justifications of selected forms of doing and presenting activities using for example variation theory and cultural-historical activity theory. Findings confirmed effectiveness of using out-of-classroom context for learning science in teacher education [4].

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References


