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**Suomen kasvatustieteellinen aikakauskirja**

Hähkiöniemi, Markus – Hirvonen, Sami. 2013. Orchestrating the growth of students' understanding in inquiry-based mathematics learning. *The Finnish Journal of Education Kasvatus* 44 (2), 126–137.

In this paper, we examine how a teacher orchestrates the growth of students' mathematical understanding in inquiry-based learning. We analyse how individual guidance as well as whole class teaching affect the growth of individual understanding in an inquiry-based mathematics lesson. In Pirie's and Kieren's model of understanding, students' understanding grows through eight levels. According to the model, the growth of understanding often includes folding back to a previous level to extend understanding. The data were collected by video recording a 9th grade mathematics lesson about the Mayan number system. In addition, separate audio recorder was used and the students' written notes were collected. We chose to elaborate on one students' understanding. We coded the growth of her understanding using Pirie's and Kieren's model and interpreted how she moved between the levels of understanding. We found that she folded back to a previous level two times. The teacher initiated both of these by drawing the students' attention to contradictions in her thinking. In addition, the teacher supported the student in moving to subsequent levels. Furthermore, the teacher orchestrated the growth of the student's understanding through a three-phase lesson structure.

*Descriptors:* mathematics learning, understanding, inquiry-based learning

Räsänen, Vilma – Lipponen, Lasse – Hilppö, Jaakko – Rajala, Antti. 2013. Cumulating and trickling interaction: A study of interactional processes during a school field trip. *The Finnish Journal of Education Kasvatus* 44 (2), 138–149.

This study focused on the interactional processes taking place in an out-of-school learning environment during school time. The participants were 18 fourth graders, their teacher, and a birdwatcher. The data source was a video recording of a birding field trip. The data were analysed using the method of progressive refinement of hypotheses. We identified two interactional processes, cumulating and trickling. Cumulation was concrete: the students and adults literally gathered together and formed a group at certain moments and places. In cumulation the attention of all in the group was focused on the same object of sighting. Trickling refers to the gradual unravelling of the joint activity and sighting. We show that the learning environment and the freedom of the field trip were important for cumulation and trickling. These processes and the explorative concepts provide a novel perspective for understanding interaction and learning opportunities afforded by out-of-school learning environments as well as classroom settings.

*Descriptors:* Interaction, observation, out-of-school learning setting, cumulation, trickling, field trip

**Karvonen, Ulla. 2013. Only losers smoke? Critical textbook analysis as teachers' professional skill. *The Finnish Journal of Education Kasvatus* 44 (2), 150–161.**

School textbooks are often regarded as a trustworthy source of information. Although electronically supported learning and teaching environments are becoming more widespread, traditional textbooks seem to hold on to their position in an elementary school classroom. In this article, I will illustrate with examples derived from empirical research, that a critical and analytical relationship to textbooks is an important part of a teacher's professional competence. The analysis of the ideal reader constructed in a textbook on health education shows how the writers, while trying to appeal to the values of the ideal reader, may end up in legitimating and supporting values and goals that contradict the values and goals of the subject and curriculum as a whole

*Descriptors:* textbook analysis, critical discourse analysis, health education

**Poulter, Saila. 2013. Religion in the Public Sphere: School as a societal Arena. *The Finnish Journal of Education Kasvatus* 44 (2), 162–176.**

This study examines school as a public sphere, and religious worldviews as part of the notion of "public". Three religious incidents in Europe are analysed and reflected in the light of recommendations from the Council of Europe that concern religion as a part of democratic practices. Methodologically the analysis is carried out through theoretical and content analysis methods. The study is based on a philosophical analysis of the public sphere, and aims to deconstruct the hegemonic secular standpoint of Western societies and challenge its narrow way of looking at the plurality of worldviews. With the help of a philosophical concept analysis, a blueprint is sketched for worldview-informed practices in education. The aim is also to argue for a school culture that is able not only to identify the categories of public and private but also to reflect an individual's own way of looking at things and to question the marginalisation of certain worldviews in the public sphere. Although the article is limited in an analysis of three special cases and uses a relatively small number of written documents from the Council of Europe, it nevertheless aims to offer a broader theoretical view on secular epistemology in the public sphere as this epistemology is blind to its own particular way of creating terms and conditions for citizens to act in this domain.

*Descriptors:* public sphere, secularism, religion, worldview, citizenship, Council of Europe