

Supporting pupils' reflection with learning analytics during a phenomenon-based study module - Abstract

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Abstract

Self-regulated learning (SRL) [1] is a core skill in future learning and society. Pupils' skills to regulate their own learning are becoming a more relevant learning object already at elementary school. Understanding and evaluating pupils' SRL actions is, however, challenging [2]. When learning in a digital learning management system (LMS), pupils leave traces of learning, such as visiting the LMS and returning the assignment. These important traces describe their SRL features. Therefore, implementing learning analytics (LA) in an LMS could help to understand and support SRL. A recurring element of SRL is reflection. As in Zimmerman's model of SRL [3] reflection is the phase of learning when pupils evaluate their activities in relation to their objectives and determine the objectives and strategies for future. In this study, to support SRL, we embedded reflection in an LMS, as a part of the learning design. The context was a phenomenon-based learning [4] study module wherein pupils, as active producers, collaborated with others and created learning artefacts. This study module was realized in blended circumstances, with digital learning environments strongly utilized. The research aim was to explore how learning analytics could support elementary school pupils' reflection and SRL in collaborative phenomenon-based learning. This research was conducted with 89 5th-6th grade pupils, aged 10-12, in a Finnish elementary school. Data was gathered as a part of the learning process, through the LMS. Data consisted of pupils' reflections during the study module and learning analytics data from the LMS. Qualitative data, from open-ended reflections, underwent content analysis, to form groups of different levels of pupil reflection. A four-level scale of pupils' reflections was formed based on the reflection levels of Fleck and Fitzpatrick [5]. According to preliminary results, pupils about the same age have very heterogenous skills in reflection. A minority could perceive a change in their knowledge or skills during the learning process, highlighting a higher level of reflection. Some recognized the influence of surroundings (group, subject, mood) on their learning. Almost half were at the lower levels of reflection, i.e., being able to describe what they had done and what they had learned. According to preliminary results, the level of reflection was higher at the end of the study module. In addition, the type of the assignment made a difference on reflection level. The next phase is to compare pupils' reflection levels to LMS log-data.

Keywords

Elementary school pupil, self-regulated learning, learning analytics, reflection

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