RECENT DISSERTATIONS

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Chemistry is cool. Research on how scientifically talented 9th graders view chemistry teaching

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Abstract

This research declares in the phenomenographical way, pupils' impressions about their effective and useful models of learning as well as social grouping of pupils when studying primary level chemistry. The informants (N=47) are the most scientifically talented third of homogenous 9th grade at the comprehensive school in Finland. The research material was collected mainly by conducting conversations from the feedback after teaching.

The analysis of feedback discussions shows that pupils adopt different attitudes in studying chemistry. You can find four groups. One group fails to do studies (outsiders), the other group wants to have excellent marks (mark-hunters) being content with learning by heart and superficial strategies. These pupils are not interested in chemistry as a science. About half of the pupils develop enthusiasm. One group is merely interested in the subject itself and the other in learning by doing. Even in their own handling of knowledge, the pupils of different adaptations considered various models of learning to be efficient.

Those most interested in the subject, **the “mattersers”** listened to the teacher and they liked to read. They deepened their knowledge and experienced pleasure by reaching conclusions and demonstrating comprehension. Those who learned by doing, **the “doers”** got support for their learning by means of doing even when thinking and seeking knowledge. For instance, it was important for the doers to arrange knowledge by writing, for example, in dialogue journals. They experienced pleasure through their own observations while working in the laboratory. **The outsiders** longed for varying and exiting models of learning. This is where you can feel as if you are participating even if you are merely sitting. It was important for **mark-hunters** that the model of learning allow them to realize easily, for example, by using ready-made classifications or tabulated materials.

Everybody experienced that the teacher's information was important. Classmates as informers were not appreciated at all. Letter writing they considered to be a highly effective model of learning. Nearly everyone considered discussions in their home group to extend one's comprehensions and help understanding. The investigated models of learning formed a varying wholeness of studies and they were based on different concepts of learning. Doers and mattersers lived in a socio-constructivist society, getting knowledge from each other in their home groups.

Nine of ten informants had felt pleasure in their chemistry studies. The doers and mattersers obtained pleasure from just studying processes. The mark-hunters experienced less pleasure. Sufficient challenges were posed as voluntary and elective jobs for talented pupils and they considered their studying to be sensible. The teacher is the expert and has the role of creating atmosphere and ensuring that the pupils work in peace.

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