

Activities During Labwork in Physics and Chemistry

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In French secondary education, pupils learning physics and chemistry have practicals on a regular basis: they experiment in small groups and look for an interpretation of their results. These experimental activities are considered as very important for learning by the establishment and by the teachers. One can then ask what the actual activities of the pupils are, during these practicals. What do they learn through them: what do they actually do? with the equipment?, with their ideas? what knowledge do they involve, and is it changing during the sessions.

In order to bring elements of answer to these questions, physics and chemistry sessions have been specially designed within a research project in didactics (I NRP - UMR - I CAR) and were video recorded. The watching of the sessions, the analysis of the written papers and of the video recordings prove that when the instructions tend to involve the students in reflection work, they analyse the experimental situation, make suggestions and defend their arguments, discuss their understanding of physical phenomena.

But what about general practice in class? what tasks are the pupils supposed to do? to what extent is their reflection involved? how big is their autonomy? In order to answer these questions and help the teachers question their practices, a grid describing the tasks required from the pupils has been set up during that same research project.. Its use reveals a variety of teachers' practices. It shows at the same time how important it is for teachers to engage in analysing the articulation between learning objectives and choice of the activities they offer to the pupils during lab work.