

LA MAIN À LA PÂTE

Baptiste Lefèvre – So, what I did is an internship at “La main à la pâte”, here, in the primary schools of la Goutte d’Or*, to help the schoolmasters in the teaching of science. But at the beginning, I didn’t know more than them how to teach science. So it was the union of their pedagogical skills and my scientific knowledge that permitted the construction of useful and interesting science courses... In practice, I was present during the preparation and in class during the course, but I wasn’t the one in charge of leading the course. It was the schoolmistress who came, said “Hi everyone!” and lead in fact the debate. My role was just... almost only a psychological support, hardly a technical one, because eventually, the teacher realizes that he knows everything! And he doesn’t need me! It could sound silly, but my role was, in the end, to become useless...

So, today’s lesson was about the subject “dirty water/clean water”: we tried to study what are the properties of clean water, and even of drinkable water. To do that, we studied the color, the smell and the transparency of water. Years ago, learning science discouraged a lot of children, in primary school, and even in high school, because they learned things they didn’t understand! But at some point, learning without understanding is no longer possible. For example, when I was in primary school, the process to learn that water boils at 100°C was the following: the teacher came, wrote on the blackboard “Water boils at 100°C”, and then we had to learn it by heart, recite it for the test, and that’s all. Now, the curriculum for primary school clearly imposes a scientific investigation approach, made of different steps. First, instead of affirming something, the teacher raises a question. For example, he asks: “Does water behave always the same?” The children can answer: “No, sometimes it is very hot, sometimes it boils, sometimes we see it, sometimes we don’t...” From these answers, the following question can come: “At what temperature does water boil?” After this first step of discussion, the children propose their hypothesis. They say “For me, it boils at 30°C, because 30°C is already very hot” or “A lot more: 1000°C!” From all these hypothesis that have been written on the blackboard, the right one has to be found. So we encourage the children to experiment, first by designing an experimental protocol, and then by executing it. From this experiment, a conclusion is drawn, which is vaguer than “Water boils at 100°C”. It will more likely be “Water boils around 100°C”, because in reality, water does not necessarily boil at 100°C. There are often a lot of fluctuations, and they open on the uncertainty in science.

This approach enables children to really grasp science like a researcher. I will finish on this idea defended by Pierre Léna: we should replace the motto “reading, writing, arithmetic” previously wanted by the government by “reading, writing, arithmetic and reasoning”.

*Author's note: underprivileged area of Paris