Butterflies for girls, earthquakes for boys. Gender representation of sciences in primary school

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In Europe, the part of the women in the MINT, Mathematics, Informatik (Computing), Natural sciences and Technology) experienced a significant increase during the years 60-80, concomitant with their massive arrival on the labor market and the generalization of the coeducation in higher education (She Figures, 2006).

Of the three main PISA (2006) domains (reading, mathematics and science literacy), science is the one where overall gender differences are smallest. In the great majority of European countries, there is no significant difference in the average score for boys and girls. However, in many countries, students make different choices in terms of the schools, tracks and educational programmes they attend. With the exception of biology, male students are more likely than female students to move towards MINT studies.

According to various studies in UK, Switzerland, France and Germany, (Acker & Oatley 1993; Collet, 2014; Duru-Bellat, 2004; Solga & Pfahl), contents, assessment procedures, teacher expectations and behaviour, peer pressures, unequal funding, and stereotyped textbooks are among the long list of schooling features thought to contribute to gender inequality in MINT.

To determine if this gender division of knowledge is induced in primary school, we compared two educational systems in France and Geneva (Switzerland) to discover, beyond the official curriculum, what kind of sciences are really practiced in the classroom and what stereotypes fill them.

To discover the real science practices at the age of 7-8, we analyse questionnaires addressing to teachers. We also analyse questionnaires addressed to pupils, about the type of science activities they prefer.

It appears that despite of the official science curriculum, the schedule allocation for science and technology remains low in primary school. Only biology seems to occupy a small, but real place, during the years of primary school. Girls do not have the opportunity to discover the other sciences, and subsequently to choose them later, during secondary or higher education. So, girls and boys keep their stereotyped representation of science. Girls choose biology to observe caterpillars and butterflies and avoid computer science. Boys choose natural science for earthquakes and hurricanes and avoid “girly” activities, which include butterflies (biology) or perfumes (chemistry). Moreover, the small place left to the experimental method deprives many girls of the opportunity to feel actresses in a field where the social representations confine them to the role of spectators or users.


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