

Two years with Roberta's girls in Italy: they love doing science!

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The project "Roberta, Girls discover robots" was initiated by the Fraunhofer Institute IAIS in 2003. Its aim is to encourage girls to get interested in technoscientific subjects. Girls taking part in the "Roberta" courses can use Lego Mindstorm kits and the corresponding software to design, build and program robots. Simultaneously they are acquiring specific know-how about such things as cogwheels, propulsion systems and sensors, etc. They can form teams to take part in national and international competitions. The essential element of the "Roberta" concept is to consider gender specific aspects in the planning and accomplishment of courses by designing the courses in a gender balanced way.

School of Robotics is the Italian Regional Center and it is leading dozens of local projects involving girls (but, not only, also boys) in Roberta courses, "exploding" robotics in its main disciplines (physics, math, automation, and so on). The main focus is to gain gender awareness and gender sensitivity, which means, firstly, to recognize and identify gender related aspects of facts and situations in education. Then, to think of specific gender sensitive behavior. In the last step this gender sensitive behavior should be transferred in any teaching situations. Girls are not interested in programming armored vehicles, combat or football robots. They are excited in programming robots to simulate and study animals' behavior; and, they need to understand the global teleological objectives of the project and have a genius for involving kids and mates with different competencies in the team group.

In our poster, we would like to introduce our figures about two years of Roberta courses in Italy; the evaluated results in girls (and boys) performance in sciences and other subjects; forecast these results on the "Smart Girls" project, which aims to spark high school girls' interest in technical subjects and university programmes. The desired change of paradigm concerns tecnoscientific education for girls (and boys) as a whole. It includes implementing process-oriented, interdisciplinary engineering courses, improving communication skills and application-oriented cross-disciplinary skills which are relevant for the research and scientific profession, as well. These skills tend to be more appealing to female students than to male students. In the long run these specific educational processes may have impact on the existing engineering profession and the engineering professional culture.

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