

Bot'n Roll robotic kit as a learning tool for youngsters

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ABSTRACT

Activities involving robotics, projecting assembling and programming robots are in essence hands-on and inquiry-based activities leading to an effective learning of different aspects of science and technology among others. Different approaches have been used to introduce robotics in the education of young children. In this communication we will present an approach that in an inquiry based science education, IBSE, perspective, uses an informal environment to introduce robotics, as well as a range of other science and technology, concepts and competencies to young students.

Many youngsters are getting interested on general technology and the robotics field in particular. Even though their knowledge is very basic they are very enthusiastic and willing to learn quickly.

Most robotics events consist of competitions, and that means the youngsters still need guidance by professionals. RoboParty is a different educational robotics event that teaches the participants, with IBSE hands-on techniques, how to build a robot from scratch to program it and in the end they keep the robot they built for themselves for further exploration.

Such robot to be built by the young children for the first time needs to be very easy and with a friendly programming language. The Bot'n Roll robotics kit was developed specifically for the RoboParty event, and has since then been improved with more sensors and actuators, which are simple to build and easy to use. The Bot'n Roll robot family launched recently another more complex robot that uses omnidirectional wheels and that can be used on other robotic competitions like world known RoboCup. This paper describes also the Bot'n Roll robots and show how they are built, bearing in mind that these robots were developed for youngsters who never worked with robotics.

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