

Development of a basic kit for creating a workshop of educational robotics of low cost using micro Arduino controller

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Resumo

This work proposes the development of a low-cost robotic kit using rapid prototyping platform nominated Arduino. With this kit, we present some concepts of physics, electronics and introduction to computer programming. Because it is a low cost platform and free access (hardware and software), Arduino reduces considerably the costs for developing the proposed kit.

Palavras Chave: Arduino, Education, Robotic.

Introdução

With the advent of computerization, emergence of computers and the introduction of dinamization technologies for teaching, there was a great revolution in the teaching- learning process¹, and currently there is a major concern with these new technologies embedded in education. We can observe in the classroom environment of classroom a wide range of technologies aimed to boost teaching². For this, we propose in our project, develop a basic kit, inexpensive so it can be used not only in the classroom but in any educational setting, for this, the kit used the Arduino board, One version, which has its hardware and free software, greatly reducing its commercial value.



The block programming environment was excellent for students with the first contacts programming. Another important point was the low cost, because it is an open platform (open source), sensors and components were easily acquired in electronic stores or even on websites.

Conclusões

We can conclude that the kit developed by students team is economically feasible for use in robotics workshops, not only in the classroom environment, it is also feasible in the technical aspect, because it is a basic kit that consists of a platform blocks by programming (Minibloq) which also assists in learning introduction to programming and does not use the specific and traditional hardware programming (C language).

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Resultados e Discussão

The proposal to develop a basic kit for robotics workshop, had two fundamental aspects, low cost and ease of programming. In programming we use the Minibloq programming environment, which facilitated the understanding of computer programming, because it is a programming environment in blocks, as can be seen in the following figure.

1 VALENTE, J. A. (org.). Computadores e conhecimento: repensando a educação. Campinas: Editora da UNICAMP, 1993

2 KENSKI, V. M. Educação e tecnologias: o novo ritmo da informação. 5. ed. Campinas: Papirus, 2009..