Teaching robotics education with a gender focus through a robotics course with Arduino: a study case in Pontificia Universidad Católica de Valparaíso

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Abstract

In the context of W-STEM European project [1-19], a case study was applied on the teaching of educational robotics [20-22] with a gender approach is presented, which is offered as a free course for schoolteachers, with participants from different countries, such as Chile and Colombia. The design of the course is focused on the interests of the female gender and following the project-based methodology, where every week classes were given virtually for a period of 2 hours. 64 students approved the course, of whom 61% were women.

Nowadays the teaching of educational robotics is one of the skills that are being included in the 21st century. In addition, there is a great interest from different organisations in encouraging women in careers related to engineering. In turn, educational robotics is related to STEM education [23], which integrates the disciplines of science, technology, engineering, and mathematics, which allows the development of related skills such as problem solving, creativity, collaboration, communication, and others [24].

The teaching of educational robotics requires didactic methodologies focused on teachers, so that they can transmit the acquisition of this learning to their students. In turn, the course design in the teaching of educational robotics with a gender approach. Therefore, the course is designed focusing on the interests of the female gender.

The aim of this course is to improve the processes of attraction, access, and orientation in STEM program to increase the number of women. Engineering has several sub-disciplines, some of which attract the attention of women better than others. Areas as engineering design and human-technology interface are gaining interest [25].

Keywords

Women, Science, CBHE, EU, gender, STEM, W-STEM, Latin-America

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