

## ЗНАЧЕНИЕТО НА ЕТИКАТА В СОЦИАЛНО-ОБУЧИТЕЛНАТА РОБОТИКА

### THE IMPORTANCE OF ETHICS IN SOCIO-EDUCATIONAL ROBOTICS

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#### **Abstract**

*Socio-educational robotics can be defined as investigating teaching-learning processes involving robots capable of bonding, learning and communicating. These robots are used as a didactic tool for their ability to interact with people, and they are designed to meet their objectives and benefit the human beings involved in the process. Therefore, it is essential to recognize the social and educational purpose of the intervention itself that will be carried out with them. However, the deontological code of the pedagogy profession does not include social robotics since it is a relatively new phenomenon in education. All the didactic interventions using robots must be designed to be compatible with the ideals of human dignity, rights, freedoms and cultural diversity.*

**Keywords:** Ethics, Social robotics, Didactic intervention.

## **1. INTRODUCTION**

### **1.1. What is socio-educational robotics?**

Social robotics can be defined as the study of robots capable of interacting and communicating with each other, with human beings and with the environment, within the social and cultural structures in which they operate [2, 5].

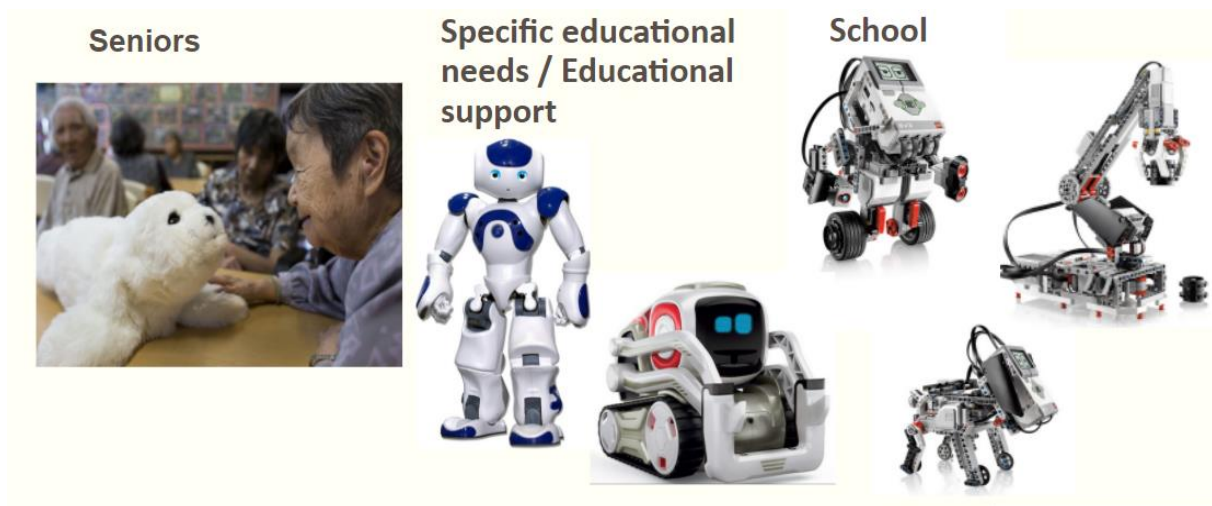
Educational Robotics are interdisciplinary teaching tools that enhance the development of skills and competencies. This didactic tools are interdisciplinary because they covers areas of different subjects throughout the regulated school program. There are different approaches when teaching with robots. Everything will depend on how they are used during the teaching-learning process [1]: robotics as a learning object, a means of learning, or learning support.

As education professionals, we have constructed a combined definition. The name given to this concept was socio-educational robotics. Socio-educational robotics can be defined as the study of teaching-learning processes involving robots capable of relating, learning and communicating, always in interaction with people and with objectives [3]. These robots are designed for the benefit of human beings. Therefore, it is essential to recognize the social and educational purpose of the intervention that will be carried out with them.

## 2. EXHIBITION

### 2.1. Who is socio-educational robotics aimed at?

Socio-educational robotics comprises a vast field of action. Currently, there are various models of robots designed to meet the needs of different groups [6]. We have classified them into three large groups, which are as shown in fig. 1.

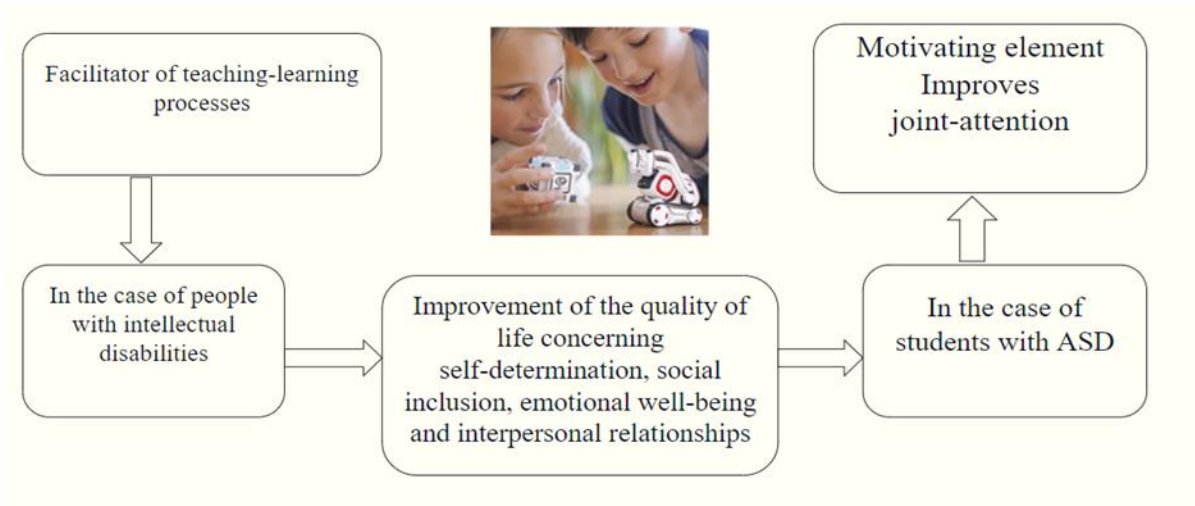


*Fig. 1. Robot type classification*

### 2.2. What are the potentialities of robotics from the socio-educational perspective?

Robotics used as an educational tool offers us many advantages. It is a facilitator of the teaching-learning process. In the specific case of students with intellectual disabilities or behavioural disorders, such as autism spectrum disorders, it helps us improve their quality of life and educational process [7].

Figure 2 presents the advantages of using robots in the educational process when working with children.



*Fig. 2. Educational advantages of the robot*

### 2.3. The importance of the purpose

We must keep our educational and didactic objectives in mind whenever we work with technology in general and with robotics in particular [4]. Every intervention must have a "what for" or a purpose. We should not carry out actions just because we can or because we have the technology since technology will not always be the way to achieve our educational goals.

Figure 3 presents the ethical issues and questions that need to be asked and that researchers need to answer before involving robots in the educational process at school.



*Fig. 3. Ethics*

#### **2.4. Ethical issues for beneficial use of robotics**

A beneficial and ethical AI conference was held in 2017 in Asilomar, California. Owners of influential technology companies appeared there and members of academia and science. These are some of the conclusions they reached [5]:

- Artificial Intelligence systems must be designed to be compatible with the ideals of human dignity, rights, freedoms and cultural diversity.
- Autonomous artificial intelligence systems must be designed so that their goals and behaviours align with human values.
- The application of artificial intelligence to personal data cannot curtail people's perceived or absolute freedom.
- Any artificial intelligence system involved in judicial decision-making must provide a satisfactory explanation to be audited by a competent human authority.
- The object of artificial intelligence research is to create intelligence, but valuable intelligence.

Similarly, if we analyze the deontological code of the pedagogy profession, we will find the following articles [4]:

- The pedagogue will be responsible for the professional acts and their foreseeable and direct consequences.
- The pedagogue will attend to any person, family, group, community or social institution that expresses a request for intervention and considers it unique and different from another analogous situation, placing it in its context of life and relationship.
- The pedagogue will establish collaborative relationships with other schools and other professionals and promote the integration of interventions, give an adequate response, ensure globality in user care, and, consequently, carry out good interpersonal communication.
- The pedagogue will contribute to the development of social policy, improving the socio-educational quality of the person, the family and the community, differentiating the response to needs and favouring prevention and the active participation of citizens.

#### **2.5. Good practices for people with ASD**

Finally, we will analyze those components that an appropriate intervention designed to develop the skills and abilities of students on the autism spectrum should have. In education, we call this good practice [2, 4]. For an intervention aimed at this group to be a good practice, these are the requirements that it must meet:

- Longitudinal.
- Early attention.
- Parent and family training.
- Measure progress and adjust the intervention according to progress.
- Natural context.

- Curriculum focused on:
  - Language and communication.
  - Social skills.
  - Autonomy.
  - Behaviour.

## CONCLUSION

Socio-educational robotics should not be exempt from meeting good practice requirements when designing educational interventions. However, it should be aimed at the collective it goes to; it must adapt its methodology to fulfill its pedagogical objectives.

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