

Chapter 19

Robotics for Education

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ABSTRACT

This chapter focuses on the applications of robotics in the field of education. It discusses the scope for growth and improvement in the models of the robots currently in use. It deals with the current scenario regarding the implementation of a thought that can help in making the future of learning efficient, effective, and interesting. It also allows insight on the role of teachers in integrating this concept in the classrooms. It describes the future of merging AI in the regular classroom to make the process of teaching and learning easier and enjoyable.

INTRODUCTION

Education is one of the basic needs of human life. It helps us to communicate and understand different ideas. Education has been updated along with time to make it more compatible with the people of now. In recent times, with the advancement of technology, the concept of inculcating it with the learning process has become widely acceptable.

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Active involvement of the internet in the educational system has brought about many changes:

- Cloud-based learning managing system is a suitable learning platform for both employees and students as it is easily accessible and affordable.
- Virtual classrooms make it easier for students to attend lectures from any corner of the world.
- Digital libraries give learners easy access to books from all around the world.
- Online courses are more beneficial to students from places that lack proper educational set up.
- Gamification involves application of prior knowledge along with enhancement of critical thinking, bringing about a change in the perspective of the students.

New innovations in technology include the evolution of robotics, embedded technology, cloud computing and many more. The idea of using robotics to make daily life easier is being supported worldwide. This paper focuses on the use of robotics for education. Robotics for education is an idea that merges the above two concepts. It is the inculcation of robotics in the education system to make both, teaching and learning, easier. This will help in the process of visualizing, grasping and applying a particular concept, in addition to making it fun. For example, the use of a 3D printer in a medical college will help children to conceptualize the biological activities inside humans. Artificial intelligence is being used extensively in teaching methodologies and provides relevant feedback to students. Simply put, it is about the growth of robotics in such a way that it can go hand in hand with the growth of the education system.

LITERARY SURVEY

In this paper, we see that using the idea of robotics in education can actually be very useful (Malec, 2001). The author highlights the areas in university and college courses where robotics can be helpful. The domains of Electrical engineering and Artificial Intelligence have a huge scope for development of the employment of this technology. However, there is a big question posed to the actual effectiveness of this application in teaching. The question is whether the students do learn the objective that was intended to be taught. The main problem is that there is no hard data that says as to what extent is robotics useful in the teaching process. Since robotics hasn't been used in this process for long, there are no actual statistics that can compare which of the teaching methodologies are better (Eguchi, 2014). This paper emphasizes the need of active use of robotics in education at the K-12 level.

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