ROBOTICS IS WAY FORWARD

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Robotics is gaining prominence in the field of education as it promotes holistic development of a child. It offers a comprehensive empowerment programme to students, focusing on development and application of core life skills. The use of robotics in the Indian education system is a mix of theory & practical, says Sameer Bora

In today's rapidly changing world, the life cycle of hard skillset like programming languages, use of tools and specific vocational skills, is becoming shorter. At the same time, skills such as critical thinking, problem solving, decision making and teamwork are becoming imperative in order to succeed. These skills, collectively called Life Skills, cannot be developed in a traditional classroom environment which focuses mainly on academics.

Robotics is now gaining prominence in the field of education as it promotes the holistic development of a child. It offer a comprehensive empowerment programme to students, focusing on development and application of core life skills and Science, Technology, Engineering and Mathematics (STEM) learning, in order to solve real-life problems. In general, its key solution lies in its instructions and enablers.

The hardware and software that accompany robotics give students creative liberty and analytical skills to approach any problem with countless solutions and make effective decisions. The utilisation of such technology builds self-confidence in students and gives them a sense of accomplishment, thereby increasing the fundamental impetus in a child to learn and develop. But a point to remember is that for any robotic solution to be successful, it is mandatory for it to be allied with strong content.

Robotics will play a major role in the future so it is imperative that we prepare the present generation of students for this transition. The use of robotics in the current Indian education system is an intriguing mix of theory and practical. When used properly in schools, it forms the basis of cross-curriculum activities and becomes an ideal resource to teach Mathematics, Scientific principles, Design and Technology and Computer programming.

The use of this technology stops students from being a passive target of archaic teaching methodologies and turns them into active learning subjects who are capable of learning in much shorter time. When robots are used in classrooms, small groups of 2-4 students are assigned one robot each. This also encourages the development of basic communication and interpersonal skills

in students. The ability to collaborate and convey complex ideas to fellow students or colleagues are considered essential skills by modern employers.

Another spectacle introduced by the use of robots in classroom is an involuntary introduction of students to exciting career paths that they may have never considered. Robotics is a perfect way to show students that engineering and IT can be fun. Engineering principles, such as electrical, mechanical and chemical, as well as IT skills are a must for successful completion of a robotics-based project and there exists a shortage of skilled workers in engineering and IT fields. Thus, it is cardinal to encourage students to plan their careers in these fields.

Robotics is a multidisciplinary field (includes mechanics, electronics, computer science, etc.), making the spectrum of jobs which requires these skills very wide. Students can specialise in robotics at post-graduation level. In India, apart from manufacturing, other areas where robots are expected to play a big role include education, entertainment and households.

The use of robotics in education can be divided into two categories. First, is the application of robotics in a classroom environment, where some teachers who realise the advantages of using a robot have creatively fit its usage into the current curriculum. Second is the usage of robots in school robotics clubs, where dedicated teachers supervise interested students in their free time.

Apart from 'core robotics' related jobs, there are also other areas where specialisation in robotics helps. For example, a person who has a background in robotics can work in fields where integration of mechanical hardware and software is very important - such as mechanical prosthetic limbs, human machine interface, control systems for heavy machinery and so on.

Let us now try and understand how Robotic Labs help all the stakeholders:

Students: It provides a platform for students to integrate STEM streams. It also helps in building self-confidence, teamwork and critical thinking and decision making skills.

Teachers: It helps teachers relate classroom concepts to real-life, develop an affinity towards technology and increase students' motivation.

Principal or Management: School gets an integrated STEM Lab and global standard robotics program. Robotic labs can be easily integrated into curriculum as a lesson or activity.

Parents: It ensures that wards become 'future ready'. It instills core life skills such as critical thinking, teamwork and problem solving in children of different ages.

Source:
http://www.dailypioneer.com/avenues/robotics-is-way-forward.html