

Life Skills Learned in Robotics

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1. Introduction

Many people think robotics is just a fun after school activity that just teaches students how to play with LEGOS. This assumption is wrong. Many important skills that are crucial for our future are learned in robotics, not just technology skills. Some of these skills are even learned in the most basic parts of robotics. This paper is designed to show all the skills we have learned and put to use not only in robotics but in our lives everyday.

1.1 Writing Skills

One of the first skills we had to learn to perfect was writing skills. This was especially important when we started to compete in Botball. We were then introduced to a new part of robotics, documentation. This is an essential element of Botball. It is where you record everything that happened in the process of building your robot during the 6-8 week time period. Documentation ensures that the team actually built the robot themselves. Teams are also judged on documentation and can receive awards for exceptionally good writing. Team members worked on documentation and developed their writing skills. We learned how to write in a detailed and concise manner to include as many details as possible and to refine our writing to present a professional product. This writing was harder than anything we did in our regular classes.,

1.2 Researching Skills

Another important thing learned from robotics is researching skills. One component of Botball is the Research and Design Website competition. Students have to research on a topic concerning robotics and then create a website, telling people the past, present, and future on that subject. In this website they also have to describe a proto-type robot that solves a problem concerning that issue. This gives a lot of student experience with advanced research. They learn new skills every year to try to place higher in the competition. People involved in the R&D competition improve their researching skills through robotics every year. We found that it was very hard because we had to cite all of our research and take a large amount of information and present it so it made sense while keeping track of where we got all of our information. We also learned how to properly cite information.

1.3 C Programming

People who chose robotics as an after school activity also learn a new language! This “language” is the language the students learn to write programs in. C is a program used by engineers all over the world every day. It’s a very complex programming program that is used by professionals. Therefore it is a very complex thing to learn and it takes a long time for many students to perfect it. The good thing is we are learning new ways to write programs every day, this skill might also come in handy for future careers and helps develop our problem solving skills because it is a challenge to convert what you want the robot to do into C programs that make it do that.

1.4 Lego Use

Little kids may use this skill, but it’s a crucial part of robotics. Lego are the base of the robot. They form the whole robot’s body and they are easy to work with. You can snap things on or try them out and if they don’t work break it down and rebuild. They also are a base for string or rubber bands or anything else you could attach to the robot to help you. This makes building robots fun and easy but you are learning something much more valuable than just putting Lego's together. You are learning more problem solving skills, it is one thing to say that you are going to build a robot to do something and another to actually build it. It can take lots of thought and you never get it right the first time so you have to figure out what is wrong and find a solution and test it over and over again.

1.5 Teamwork Skills

One of the most important things in the game of Botball is teamwork. You cannot do this project by yourself and it will help you so much if you have strong teamwork skills. A crucial part of teamwork is communication. Everyone on your team needs to know who is doing what and when. This way there are no fights, but you have to be prepared if there are fights. Contracts and deals can be made about consequences. Everyone on the team should be cooperative for the team to function properly.

1.6 Leadership Skills

For every team there has to be a leader or leaders. If you happen to be chosen for this special job you need to know how to be effective. Leaders need to be sure to lead but not be bossy. Followers will respect and do as the leaders say if there is a good leader. You can be a good leader by making plans and assigning jobs equally. If you have an effective leader you can be an effective team.

1.7 Listening Skills

Listening to your instructor is a very important part of robotics. Robots are very delicate so slight mistakes could lead to big consequences. You should always listen to any instructions even if they aren't even being directed towards you because you can learn a lot from other teams. There are special ways to build, program, document, and organization. In order to be successful you should always listen, this is an especially important life skill that is learned and perfected in robotics.

1.8 Organization Skills

This is another very important aspect of Botball. As you can imagine building two robots there are many Lego pieces. Of course you could build a robot with a box full of jumbled pieces, but to work faster and more effectively the parts should be organized. When every part has its own place then finding it is no problem. This makes building easier and work can be done a lot faster. This is very important as a life skill, because organization is a key to working affectively.

1.9 Conclusion

As you can tell from this paper many important life skills are learned and or practiced in robotics. Writing skills, researching skills, C-language, Lego uses, teamwork skills, leadership skills, listening skills, and organization skills are just some of the great skills learned. Since I we have been in robotics we agree that we have practiced these skills repeatedly and are happy that we know and use them, because they will be such help in our later lives.