Trial and error Girl powered Curiousness Robots



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Our special team.

We are students from Taichung Municipal Girls Senior High School (TCGS), which is a single-sex school in Taiwan. We used to be in a school club, which was composed of students who are interested in robots. Sadly, we were forced to disband because the number of people who wanted to join our club was less than the minimum. Although we didn't have the chance to start a club, we still wanted to find an outlet for students who are interested in making robots. We recruited people who are enthusiastic about robots to build a new team. And sought resources such as teachers and place by ourselves. Since we aren't a club in school, we can't apply for funds. Fortunately, our seniors leave components for us. That really relieved our financial burden.

In order to recruit people to join us, we not only wrote the posts on Facebook and Instagram, but handed out the leaflets.





Team Members

Tz-Lan Chang Driver

She has been interested in building things with her own hands. After joining VEX team, she spent lots of time working on it, and make herself tired sometimes. However, there is no regret in her mind. she hopes she can complete this competition with lots of happiness.





Chia-Yu Lin

Driver

She loves to build up things like Lego with her hands. When she saw the commercial to recruit new members, she came in without hesitation.

Shi-Yin Chen Builder

She had touched VEX. Out of her passion and love for this activity, she also became one of the team's conveners, finding someone with same idea.





Wan-Chi Tsai Builder

She likes to learn something new, and like to make some craft by herself. So, she joins our team.

Shi-Xuan Zheng Builder

She had touch VEX for one year, and that wonderful experience push her to continue this season.





Yun-Ron Huang Programming

She used to join LEGO and she in the VEX wants to learned how to make a robot and write a programming language for robot.

Ting-An LiProgramming

She has been interested in programming, so she joined this competition, hoping to learn how to make robots and code to control them.



The way we communicate with each other peacefully.

We never had any internal strife in our team. While someone has difficulty on anything, we would empathize with each other. If we did not all agree on some issues, we would use democratic methods to reach the resolutions, such as voting.

How do we cooperate with each other?

In our team, we separate jobs into several different parts. For those who take charge of building machines. They learned how to build a good machine, discussed how to make the robot outfitted with more capabilities with their teammates, and how to make it better through working with their teammates. The most valuable things they learned were creative thinking and cooperation. In terms of creative thinking, sometimes the first way that comes is not the best method, so they need to think about new things all the time to solve the problems. If the team only has one person, she won't be able to finish it because it is not very simple. It is a precious thing that they could find someone with whom they can discuss when they met difficulties.



While some of us took charge of building robots, others were taking responsibility for coding. They had to learn many new programs and the usages and considered the sequences of the robot's moves. The most difficult thing was to figure out why the robot wouldn't move as they expected. During trial and error, it let them learn more by seeing how the robot moved in those programs although those programs weren't what they were looking for.



Still others were Coach and Driver. The hardest conditions about being a Diver was that although receiving the command of Coach, some actions could not be executed immediately, or the actions of the robots were not as expected, so it is necessary to quickly combine the commands from Coach with the current situation. It could enhance their capabilities and encourage them to think out of the box. During practicing, they have better response capability and resilience.

As for the Coach, they need to see the situation on the field clearly and convey the most precise instructions to the Driver. In the process of trial and error, they gained more superb skills and clearer logic, and their tacit was also getting better. What's more, they had participated in the production of the machine, so they knew what tactics were more suitable

for our robot.



Before we decide which role we want to be in the team, everyone gave different roles a try. We practiced making chassis together and coded to drive the chassis. In that way, each of us could choose the role that we are in favor of.



Moreover, We think teamwork is essential. Through different perspectives, one team member can find the machine defects that other team members may not have noticed, thus bringing our machine significant improvements.

The things we learned from our STEM role model.



Our STEM role model is Katalin Kariko, whose research paved the way for today's mRNA COVID-19 vaccines. At the time, the scientific community was focused on DNA, and many believed that Kariko's work lacked merit. But "sometimes the greatest scientific discoveries are made by those whose work is ignored but who persevere against all odds until they succeed."

Even though facing doubts, she still pulls out all the stops on doing her research, and still perseveres and keeps it up. When we undergo difficulties, her perseverance inspires us to solve the problem actively against all odds. It makes us know nothing can stop people who have ambition. The most important thing is that she shows us that gender can't limit one's talent and ability. To match her, we need to become a more inclusive team to be the strongest team, so that we can see things from different angles to perfect our machine.

What is "Girl power" in our opinions?

When people hear "power", they may think of boys. But what about "Girl power"? We think that it is a novel word which should break the tradition. Recently, more and more girls in different fields show off their power. For example, now, our president is the first female president in Taiwan. Moreover, the deeper meaning of "girl power" doesn't just talk about girls, is that gender is not a wall that stops you when you want to do something.

The process others' opinions about us change.

Others didn't know what we were doing at first. Some of our parents used to think that we spent too much time on it and didn't manage our time well. But after a period, they changed their opinions. They saw our efforts on doing things like building machines or writing programs. Although they might not know what we are doing exactly, they turned to support us, encouraged our hard work.

About our future.

Because of our enthusiasm for robots, we gathered to participate in this competition, not only gaining the special experience, but also meeting friends with common interests in this project. It also made us aware that we can make such wonderful works. We hope that our team can keep existing and become bigger, and let more people know about us. We want to let more people to experience the interest of building a robot and let them learn the spirit of teamwork. We hope to make an impact so that our school will take notice of us and give us some financial support. Although it will be difficult, we will do our best to make our dreams come true.

We are all looking forward to participating in different activities in the field of machinery and technology, broadening our horizons, and making us more competitive in the future.



Reference:

- All Plus Interactive English Magazine. October 2021 No.203
- Photo of Katalin Kariko:

https://i0.gmx.net/image/648/35676648,pd=5/biochemikerin-katalin-kariko.jpg

Anecdote (The interesting things happen in the process):



• These pictures show the time when we tried to dig a hole on the PC board. It is because we do not have an electric drill, we need to do that with the tools that we have. We used the hammer and the screwdriver to do that.



• We were trying to soften the PC board which we want to add on the machine with a lighter. After we finished our work, we felt hungry but our egg tarts which we had bought were already cold out. Therefore, we used the lighter to heat them up.

• We had the duck called "Bubi" as our team's mascot.

Because one of homonyms of the word "Duck" in Chinese means to get rid of ghosts and disasters. We hoped it can bring in lots of good luck to us. Also, we painted our team card in the duck's color.

