Robotics took him to Africa and a scholarship from Tec de Monterrey

Paolo Reyes never imagined that at **17** he would be in the **African desert**. He had gone from watching electronics videos to bringing water to people in **communities** in **Kenya**, a path that began when he said “yes” to joining a **robotics team**.

Being in **Africa** that day, almost 15,000 kilometers from home with the sand under his feet, was the result of having designed an **electric go-kart** he used to **teach engineering** to **young people** with **Down syndrome** in his native **Toluca**.

Those young Mexicans were **academically abandoned** when they finished high school, but Paolo had other plans. He wanted to show that **engineering** could be **accessible** and could **change their lives**, just as it had changed his own life years before, despite not having many **financial resources**.

Joining a **robotics team** at **age 15** led him to the challenge of creating that car, then to **Kenya** with the **desert communities**, later to go for a **100% scholarship** at **Tec de Monterrey**, and then to help his team go to a world event, all while trying to fulfill his dream: **inspiring others through engineering**.

*“Take the **opportunity**. It may seem quite trivial to say, ‘I want to participate here’ or ‘I want to join that robotics team,’ but you don’t know where your **lives** will end up in **2 or 3 years**,”* says Paolo, now a **mentor** on the **team** he started in.

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How a robotics team changed his life

When **Paolo Reyes** was in **high school**, he spent hours in front of a screen watching **YouTube videos**.

I would type any word related to **electronics** or **inventions** into the search engine and smile as I selected the first video to watch that day.

"*I think **you're going to be an engineer**,"* were the **words** he remembers hearing from his **parents** , **aunts and uncles**, **teachers**, and **friends**.

However, at that time Paolo did not quite understand what it was to be an **engineer**, and it hadn't been that long since the days when he **dreamed** of **being an astronaut** or even a **veterinarian**.

Days, nights, and dozens of videos passed until the moment came when **Paolo**, at **the age of 15**, made a **choice** that would lead him to travel thousands of kilometers away and to the profession people had always associated him with.

*"I **loved** that **world**. At home, I used to take **cardboard boxes** and make **remote control cars** with them. They had a very **ugly cardboard chassis**, but the idea was to understand what was in them,"* he says.

Paolo mentions that they didn't have the **financial resources** for him to study at a college, let alone think about studying at a **private university**, but that wasn't going to stop him. He would **find** a **way** to pursue **his dreams** at all costs.

*"When I was **15 years old**, I went to high school at **Tecmilenio** in **Toluca**, where they had a **FIRST robotics team**. From then on, every project I've worked on has used what I learned there,"* he says

.

This team, called **WinT**, had been **participating for years** in the **FIRST Robotics Competition,** which brings together **high school students** from all over the world.

There, the young people are in charge of **designing**, **building**, and **operating a robot** that performs actions in an arena against other teams to score points in **qualifying events** and later **compete** in a **world event** in **Houston, Texas**.

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Paolo remembers coming to the team with only the **knowledge** he had gained from **YouTube.** There was no one in his family who could have helped him with the topics they saw.

The young man recalls that he had to **learn robotics** as **quickly** as possible, but that would be only his first challenge.

Along with **creating** a **robot**, the teams must also carry out a **community project**, so Paolo, despite being a **rookie**, decided to participate in that as well.

Paolo took **initiative** wherever he could, trying to make the **WinT team** do something it **had never done** in its **history**: **win**.

*"At one point, the **team wasn't very good**. It had **lost** for **many years**, and then I took **initiative**. Before, there was no **robot design**. Everything was done on the spot.*

*"I talked to the coach, I **designed** a **first robot** in the **2020** season for another FIRST competition called FTC, and we won at the national level. Then, we applied that process to this competition (FRC),"* he said.

The team's community challenge was to build an **electric go-kart** using **PVC pipes** and to **teach engineering** to **young people with Down syndrome** at a care center in Toluca.

*"**I was new**, and none of those with experience went for it. It scared me, but I **said: 'I'll take it on**. I'll study what I have to, and it'll work out.'*

*"We wanted to bring this **go-kart** to them so they could put it together with their **own hands** through a direct, practical **approach** (to engineering). That's what **FIRST** does for us. In this way, they could discover that they could do more after they finish high school."*

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Paolo's work on the design of the **WinT** team's robot would also bear other fruit. For the **first time in its history**, the team won **national awards**.

*"**We won everything.** We won the **Inspire Award,** which was the **most important.** We were **champions** with our **robot,"*** Paolo recalls laughing***.***

In addition, the team won the **Imagine Engineering Award** during the **FIRST Regional Monterrey 2022,** enabling them to go on to the **world event in Houston.**

The 15,000-kilometer journey

After his community work, a **company** called **"Dow"** became interested in Paolo. As a reward for his work with young people with Down syndrome, they gave him the **opportunity** to **work** on a **community project** in **Kenya**.

Bags packed, plane ticket in hand, and hours of travel were the beginning of **2 weeks** in which Paolo, together with **young people** involved in **engineering projects** around the world, would work to **improve** the **lives** of the desert **inhabitants** of this African country.

Some of the **actions** carried out by the volunteers included **creating domes** to **take advantage of solar energy** and **transporting water** to a community where women walked kilometers every week to collect it from a river.

*"From that experience, I **learned** to **value the things we have**, basic services like water or even the **opportunities** you have, and sometimes you think you don't have many.*

*"You realize that you're **privileged** and that you have to **take advantage** of **opportunities**, not only for yourself but also to **help others**,"* he said*.*


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The Tec de Monterrey scholarship that changed his life

Paolo returned to **Mexico**, where he had lived with **limited financial opportunities** until that point.

His trip to Kenya, Paolo recalls, had convinced him that there were ways to find opportunities where there seemed to be none.

His **next step** was to **study engineering**, and Paolo was determined to make it happen, no matter where he would end up pursuing his degree.

The **WinT Robotics** team would once again present an **opportunity** for the **young man**.

"*I think you could **apply** for a **Leaders of Tomorrow scholarship**,"* one of his **teammates** said to him, someone even younger than Paolo but who already knew that the scholarship offered **100%** support to **study** at **Tec de Monterrey**.

At that point, **Leaders of Tomorrow** could be the **ticket** to **engineering** for Paolo, who did not hesitate to apply to be chosen from among the **thousands of annual applicants** to the **program**.

Months later and only **2 days** before the **results** were **announced**, he was called to the **Tec's Toluca campus**. He was told that he had to come with his mother.

*"I thought that there were **2 days left** until they **announced it**, and I was still being **evaluated**, but when I arrived, they gave me a piece of paper they told me was the **interview date**.*

*"When I read it, it said that I had **won** the **scholarship**. At that moment, my **mom** started **crying**, and then **I did too**,"* recalls Paolo, who then went on to study **Robotics Engineering** *with a* **100%** scholarship.

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The student who became a mentor

It has been **3 years** since **Paolo joined** the **WinT team**. The **scene** is the regional stage of **FIRST Robotics Competition Monterrey** in March 2022**.**

Sitting on the floor, the young man is holding the robot while the rest of the team drills holes in a metal structure to remove an extra kilogram of weight so that it can compete.

*"**Paolo, they're looking for you for an interview**,"* they tell him over the sound of the drill on the robot.

As he leaves the arena where they are competing, Paolo lowers his mask and smiles. He has the **opportunity** to **tell** the **story** of how he came to **mentor** the **team** that opened doors for him and took him to Africa, then to a scholarship at the **Tec**, and then to the World Cup in the **United States** .

*"I'm **in charge** of the **design area**, and I also get involved sometimes in drilling holes to remove an extra kilo from the robot,"* Paolo says with a laugh.

Today, he is a **design leader** and **junior mentor** to the **young people** taking the place of his friends from a couple of years ago, with whom he will lead the robot to the glory offered by **FIRST** for those who win the **competitions**.

***"**We had our **glory** in **high school,** and now we're looking **to pass on** our **knowledge** to **new generations**,"* adds Paolo*.*

There's no time to waste. He puts his safety glasses back on his face, stands behind the **robot** that has already lost a few grams, and sits down again, as he used to do in front of the **computer**

he watched **robotics videos** on.

The drill makes a noise, hands hold on firmly to the robot, cheers of encouragement are heard from the stands, and the **competition** that gave him the **opportunity** to **design** and **build his future** returns to normal.

The day after his interview with **CONECTA, Paolo's team** received a **direct pass** to the **FIRST world event**, the robotics tournament conceived as a sport to help get children and young people interested in science.

His destination is now Houston, where he will look to achieve **international recognition** for his team and for Mexico, bringing him closer to his **childhood dreams**.


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