



ROBOT SPORT

A COMMITMENT TO ROBOTICS AS A SPORT. CAN WE REALLY MERGE THESE TO THINGS TOGETHER IN THE SOUTH AFRICAN SOCIETY?

IS THIS A RELEVANT QUESTION TO ASK?

Pieter Pretorius

A SPORT MAD COUNTRY

- South Africa will literally get to a standstill when international sports events are taking place.
- This however is only true for sports like soccer, rugby and cricket.
- Rugby is probably the biggest issue.
- Parents will spend lots of money to buy the right equipment, trying to give the children the best kits available.
- They will drive absurd distances to support their children in their sports. I know because I am part of those parents.
- I've been a provincial athlete for many years.
- I've even coached national track and field athletes.
- So when we talk about sport crazy, I will definitely make the list of crazies

WHAT HAPPENS WHEN IT ALL ENDS?

- For most professional athletes this is the type of question they would rather ignore as if one's sporting career can continue forever.
- It happened to me, it happened to my wife. One day we just decided that it is over, that we need to continue with our lives.
- Yes, we have been to university, that was the responsible thing to do, and yes we both have degrees also.
- None of these things really helped us. Finding work was a great issue. We had to become self employed.

A NEW REALIZATION

- We started a computer business teaching children to work with computers.
- Then I moved on to robotics and it was like a homecoming to me. I just love educational robotics.
- From my own experience and what I've learned through the years I suddenly realized that I can do much more with robotics than I could ever do with athletics.
- Robot competitions like FLL, FRC, Robofest and WRO prepare kids way better for the challenges of adult life than any of the sports I've ever done. This was the turning point for me.

SLOW START

- However Robotics in South Africa was in embryonic state. Few people know about robotics, most did not believe that it is important and even more people just think that we have lost our marbles.
- Setting up robotics competitions was not a big problem. Finding people willing to invest in this was another story.
- While businesses do realize that it could be important they would rather invest in traditional sports, and the universities in South Africa did not help at all.
- They wanted the candidates, but they did not really want to get involved by producing scholarships or bursaries or anything substantially to support the robotics movement. Sad to say, it has not changed yet.
- The media was sort of on the fence with it also. We really could not get them to be interested to the point of saying, listen guys we can make a real difference here.
- These were the things that would prove to be our Achilles heal for robotics over the next decade.
- Nobody really look at Newton or Einstein as heroes the same way they looked at our national sport stars and to be honest, they still don't.

THE WAY FORWARD

- On the positive side we have expanded our activities in South Africa to include competitions like the FIRST program, Robofest, WRO, and Africa bot and a few other lesser known competitions. This means that South Africans are catching up to the idea of robotics.
- However while the universities, and even governmental departments are gearing up for robotics, there is very little reason for schools to change their attitudes towards robotics. Only a hand full of schools recognize robotics as a form of extra mural activity, much less as a serious sport.
- We need to popularize robotics, very quickly as the pool of interest is still very small. Compared to something like “serious gaming”, we can say that robotics, has not even got out of the blocks yet.

IMPACT

- The impact of robotics for those learners in our clubs who decided to do it as a serious sport was very significant.
- I am not talking here about just being in robotics classes like most kids do, but doing competitions. This is my firm believe and I've seen it again over the past few months, just how big an impact preparation for a competition really makes on the lives of children.
- The learning curve is steep, especially concerning problem solving. Adapting to changing circumstances is extremely tough, but the personal growth coming from this is very evident.
- Looking differently at problems and how to solve them is a big requirement for robotics, but also in everything we do. Sometimes just a change of perspective can make all the difference.

TO UNDERSTAND OUR MISSION

- I am not trying like most people doing robotics, to create a bag full of engineers. If that happens, it is a huge bonus, but through our program we build confidence in ability. And a big part of these programs are competitions.
- Our primary aim is to motivate and inspire kids especially in middle school to learn more about science, engineering and technology.
- The premises are: If they think they can do it and they understand some basic concepts, they will be more willing to take subjects like science and mathematics in high school. Because it is tough, they don't want to do it. We do have a huge problem in this regard at the moment.
- However we have found that kids doing competitions develop at a much higher rate than those who don't, because they are pushing their own boundaries.

A FEW CASE STUDIES

- Henk and Jo Mulder 2003 – 2004 (mechanical and electronic engineering)
- Neil Clegg (international procurement at Sasol), Petri de Kock (mechanical engineering) , Liezl Potgieter (forensic scientist) 2005 to 2009
- Karel Olivier (Attorney), Leander Jacobs(electronic engineering)
- Jamie Anderson (chemical engineering)
- These are but a few of the learners that I've worked with over the years. Personal growth has come from doing robotics competitions more than any lessons I could ever teach in class.

GROWTH?

- Yes robotics has grown in South Africa, the growth is slow but it is there.
- However, I believe that we need to speed up this growth. Our economy is limping along at a snails pace and we need to convince the right people to start thinking ahead and invest in something that can and will have an impact on our economy in the future.
- The right people meaning the government. They are still more interested in sport development and the development of arts and culture than they are in engineering and science – well that is my personal opinion, but still I think I can support it with a few facts if need be.
- Establishing underfunded science centers is really not the way to develop future engineers and scientists.

CAN WE MERGE SPORT AND ROBOTICS

- After nearly 2 decades as a robotics teacher, coach and organizer I do not think that this question is relevant anymore.
- It is not a question of can we do it, it is more a question of how important it is to do it.
- Each one of us sitting here today know that we are working with future questions, and these questions needs to be answered by parents, teachers, coaches, and organizers.
- Everything we do starts at a personal level, this includes robotics also. We need to give enough incentive for performance, we need to make our future engineers and scientists heroes and we need to ensure that the world knows about them, especially the children. We need to give them vision!

A VISION

- It is important to understand that people became heroes, not robots. Therefore we need robotics competitions that allow for both player and autonomous modes.
- It is a whole lot easier promoting human faces, when people can see them competing intensely, because then we can promote heroes.
- Incentives in all forms are important, from money to scholarships, to be part of national teams. Prestige will make the difference.
- And we need to understand that it is not so much about complex tasks, but rather making it accessible for as many people as possible, in doing so we will get more the scientists and engineers to do the complex stuff.
- In the end it is all about public image and understanding of what we do

CONCLUSION

- I firmly believe that robot sport, especially educational robotics should be elevated to the same position as popular sport. The benefits of knowledge and skills gained through these competitions will last learners a lifetime, but even more important, it prepares them for adult life like no other sport can do.
- I know this, I have been involved in both, there is no way that athletics can compare to robotics when it comes to preparing someone for adult life.
- For a country like South Africa which does not even produce a quarter of the engineers we need to keep our economy afloat, it is not a question of should we make robotics a sport anymore, it is a question of: Can we afford not to do it?
- Thank you for listening!