The problem with teaching coding in South African schools

Issued by Pert Industrials

25 May 2021

The great thing about robotics and coding is that it is all malleable. The awful thing about ***teaching*** robotics and coding is that it is all malleable. To clarify:

Let's say you want to send a robot around a room. You could measure the room, code in certain distances and lock one wheel at those intervals. You could also do this by time intervals. Or you could vary power output to the motors and do a circle. Maybe loop this, with increments, for a spiral. Or you could add hardware. There are sensors for almost anything. Proximity (for walls) light (for colours), acceleration (for different surfaces). Etc. Etc. So many options, for both software and hardware. All of which presents somewhat of a curriculum ***teaching*** problem, when you have a fixed outcome and final assessment.

EDUCATION

Science lab activities during a pandemic

Pert Industrials 16 Feb 2021

One possibility is minimal instruction and then you just let the kids loose. This is what happens in most robotics clubs, and it works very well on that scale, with individual projects instead of a curriculum, and some flexi-time for problem-solving and troubleshooting. But what do you do with a class of 30+ kids, in a fixed lesson period and a national standardised exam looming in the distance?

I can tell you that, in practical terms, your biggest problems will be your smallest pieces: the sensors and jumpers. These get lost or broken almost immediately. Your next big issue is the time constraint. There are a lot of ways to solve technology problems, but never enough time to try them out, particularly when it takes so long to modify your setup.

Well Pert has just solved all of your problems with one product.

Ok, not really. But we do have something that might make a difference. The concept comes from the Elenco Snap Circuits, Educational Version, that we have modified for coding and robotics:


Snap
Rover

Instead of wiring components, these are all snapped in place. Much quicker, more secure and robust. Also Pert has created a hard, clear, component labelled class container to keep track of all the pieces, and we are currently developing local lesson plans and teacher support sheets and videos. And there is another big improvement, thanks to Elenco.

Have a look at this video from my kitchen table, two years ago:

Do you notice that big old blue USB cable, protruding from the left and the edge of my silver laptop? That is fine for a demo, but if you have a class of kids, they will really need to use their phones and Bluetooth for their programmes and modifications. Like this:

click to enlarge

We have also added a Pert student-resistant (almost student proof!) multimeter and extra components for natural and physical science labs: conductivity and insulation, series-parallel networks and the internal resistance of a battery.

I don't want to over-promise here, but if you have ever cleaned up after a robotics prac., you will realise that this new product is a huge improvement.

For more info or to talk about things educational, please mail me at: peter@pert.co.za or visit us at www.pertindustrials.com

- **Progress in technology has slowed down a lot** 12 Apr 2024
- **ChatGPT failed a job interview, but I can still put it to work** 5 Mar 2024
- **How do you make something interesting?** 7 Jul 2023
- **Business and government - who does it better?** 14 Nov 2022
- **The Pert Panama Project and Papers** 27 Jun 2022

Pert Industrials

Your single source for Engineering Training. Since 1967 Pert Industrials has been developing and manufacturing Engineering Training Equipment for Technical Schools, Colleges and Universities worldwide.

Profile | News | Contact | RSS Feed