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THE AGE

Computer dream sees light of day

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Schoolchildren at Shepherdson College with their XO computers.

Children in the Northern Territory have become the first Australian recipients of the XO computer, writes Anthony Caruana.

One Laptop Per Child — it sounds like an interesting ideal, and is part of the vision of many schools and colleges. However, with a decent computer costing more than \$1000, it's clear children in the poorest parts of the world are going to miss out on an important educational and enabling tool. The One Laptop Per Child initiative, or OLPC, came to Australia a few months ago on Elcho Island, in the Northern Territory.

Championed by US academic and philanthropist Nicholas Negroponte and others at the Massachusetts Institute of Technology, the OLPC project sought to design a laptop computer that was cheap to make, functional, robust, connected and could be used in bright sunlight.

Formerly known as the \$US100 laptop, the idea was that such a device would enable the poorest children to have access to improved educational opportunities. The OLPC computer, called an XO, is designed around five core principles: child ownership, low ages, saturation, connection and free and open-source tools.

So, what makes the XO so special? Holding one for the first time, you realise this is like no other laptop or netbook on the market. The casing is made of a very solid plastic that protects the 19cm, 1200×900-pixel display. While most LCDs cannot be viewed outdoors, the XO uses the sunlight as a light source.

Outdoors, the screen becomes monochrome but is incredibly clear. The display technology was developed specifically for the XO and has been licensed by other companies. Outdoor usage is important, as many of the children given an XO don't have enclosed classrooms.

When the screen is opened at a right angle, it can be rotated and flipped, converting the XO from a mini-laptop into a slate or tablet. There's also a button that toggles the screen between portrait and landscape.

Each key on the XO's keyboard is about a third of the size of a standard key, but there's quite a bit of space between each key. The entire keyboard is protected by a silicone casing, ensuring dust and water don't get into the electronics. The keyboard, despite this unusual design, was comfortable to use once we'd taken the time to become accustomed to it.

Where the XO really raises the bar is its ability to connect to networks and other XOs that are nearby. Every XO is a network router capable of creating a mesh network with all the other nearby XOs. This enables simple collaboration between students. For example, if one student is writing a story using the word processing application, he or she can invite a friend or teacher to work from that screen.

The XO needs to run for a long time without reliable access to a recharging point. The typical notebook screen consumes about seven watts of power. When working indoors, the XO uses just one seventh of that, and a mere 0.2 watts when outdoors.

The processor, a 433Mhz AMD LX700, can selectively power itself down when not in use. It can even do this between keystrokes, meaning the XO can run on just two watts of energy.

While the XO's hardware is an impressive collection of parts, they can do little without the right software. Using a customised version of Linux distribution Fedora and then overlaying it with a user interface called Sugar, the XO is easy to use. All the programs save their data in open formats so they can be shared easily with non-XO users. In addition to education applications, there's a drawing program, music editor, astronomy and some games.

DONATE

THE OLPC organisation in Australia encourages people to donate these computers to schoolchildren. Go to laptop.org.au.