Gaining skills for sustainable action

Some schools are teaching STEM skills by tackling ecological and ethical issues.

BY Melissa Iaria

Many young people are passionate about taking action to protect the planet. Some schoools are also embracing sustainability to teach crucial STEM skills, incorporating science, technology, engineering and mathematics to help students make a positive difference in their lives and careers. At Toorak College, for example, students are deep-diving into real issues as part of the school's agile learning program. Students are taught to think critically, creatively and ecologically as they design prototype products that are ethically made and sustainable.

"Students are challenged to use an ethical mindset and consider how their creations may help society and promote inclusion," says the Deputy Head of Senior School, Academic Growth, Kate Brown.

The compulsory subject in Years 7 and 8 covers technology, business, society, culture and design. Once in Year 8, students create products that align with UN sustainability goals. Students have explored contemporary issues, such as the refugee crisis, with one group designing refugee life vests made from milk bottles and ropes.

Students are encourage to consider the impact of their creations on future generations by using available resources and minimising waste.

"They are also taught critical thinking stills to become discerning consumers," Brown says.

"We wanted our students to have a bigger picture and understanding of the way the world is changing and technology is developing, and making sure we're making decisions from a positive mindset."

Despite their youth, the students have a "real social mindset" with an interest in world issues around them. This kind of learning gives students a framework for meaningful action, she adds.

"They see things on the news or social media, and they don't always get the time to unpack what that means. Many of them get emotionally connected to that and get frustrated they potentially can't help," Brown says.

"We're really setting them up with fundamental skills, so as they mature and can handle potentially more complex ideas, they can tackle these problems and come up with solutions."

At Cornish College, students learn about sustainability through its award winning EcoCentre. The EcoCentre, designed and co-constructed by the Property Manager, Tom Humphreys, is built using recycled materials and includes a nursery for flowers, vegetables, native plants and an aquaponics system. There are worm farms, composting, wetlands and beehives, not to mention roaming chickens, ducks and guinea fowl.

Students learn everything from the impact of food waste to how technology can be harnessed to benefit the environment. And hopefully, they take those lessons home to their families, Principal Nicola Forrest says.

"We want to influence a whole community around sustainability," Forrest says. "There's barely a teacher in the school who doesn't do something active around sustainability and then models that to the kids, who then take it home to their parents."

"If everyone who engages with our school can do one little thing to make a difference, then we know we're getting more impact. You want to be able to work across generations."

Forrest says the sustainability theme is embedded in the curriculum. All year levels use the EcoCentre to learn and create outdoors, building on their knowledge of sustainability, animals, food production and society. It also helps students to develop crucial STEM skills in problem-solving, creativity and critical analysis. Primary teacher Erica Smith, who runs the school's STEM Hub, says students explore different growing methods, from natural garden beds to hothouses and hydroponic and aquaponic set-ups.

"The students are out there designing experiments, building different systems, trying different technologies. That helps with their knowledge, understanding and passion towards sustainability for the future," she says. "They've got a good basis to start from when they start thinking about their own solutions to problems."