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Engaging Girls in STEM

2013 Student Leadership Conference
Loreto girls reach for the stars in STEM

A group of Loreto College Maryville students, representing one of only four schools in the world, has had the opportunity to share their ideas in addressing Australia’s future water security in front of world leaders participating in the Rio+20 summit in Brazil. The opportunity was made possible as part of the ScienceRise Water and Life pilot project - a partnership between Questacon - Australia’s National Science and Technology Centre, Guangdong Science Centre, China and Science Centre Singapore.

As part of the project, the girls were involved in a series of international video conference forums with students from China, Singapore and Canberra to discuss issues, share ideas and aspirations around future water security. As well as dedicating their own time on Saturdays to take part in the video conferencing, the girls created their own project to address water security in Australia.

With South Australia’s dependence on the Murray River, the girls’ focus on the Murray’s water security issues involved a community approach as they created their own awareness and education campaign starting with the College’s Primary Years’ students.

The project is just one example of the way Loreto College Maryville tailors its learning in STEM subjects, a traditionally male-oriented field, so that its girls learn best. This has led to many successes for its students including old scholar, Alyssa Fitzpatrick (‘06) who was recently announced as the 2013 Rhodes Scholar of South Australia. Alyssa recently completed a Bachelor of Medicine/Bachelor of Surgery and is currently undertaking an internship at the Royal Adelaide Hospital before travelling to Oxford University to complete her Masters in Global Health.

While there are many outstanding achievements, starting a love of learning in STEM at school is just the start on a journey to success. From Reception, early engagement cultivates a lifelong love of learning in STEM which is nurtured throughout the middle years and into the senior years. Loreto College Maryville Principal, Mrs Rosalie Glessen, said the key to ensuring retention in STEM is to encourage students to engage with these subjects.

“It’s not only what you teach but how you teach that really makes a difference in truly engaging students,” Mrs Glessen said. “Research clearly points to the higher levels of success in STEM subjects in all girls’ schools; however, at Loreto Maryville we find it’s the way the students are able to form their opinions and experiences of STEM every day that makes the biggest difference."

“As an IB World School, we take every opportunity for the girls to be hands-on and to also look for the creative applications of STEM, both within and beyond the classroom. Our focus is on developing inquiring, open-minded learners by providing opportunities to see, opportunities to do and opportunities to experience – all injected with a healthy dose of imagination and creativity.”

Loreto College Maryville has launched its students into virtual reality space through performances in the Adelaide Fringe Festival, and welcomed the Maths Man - a comedian who combines stand-up comedy with Maths as well as using Mathematical applications in Art. In addition, the College has taken part in industry-led workshops such as interactive biotechnology workshops, welcomed industry-leading guest speakers and taken part in the CSIRO’s ‘Life on Legs’ program for the junior primary students.

Beyond the opportunities to see, middle and senior students are given a multitude of in-classroom tasks. These include building and programming robots, producing short movies and designing multi-page websites, while junior students enjoy getting tactile with new technology as well as using an outdoor learning classroom to learn about forces of nature, conduct experiments and observe the outcomes each day.

When combined with the many co-curricular activities such as the ScienceRise Water and Life pilot project or the Oliphant Science Awards, the program provides broad opportunities to assist the girls to understand, appreciate and be excited about the infinite possibilities within the STEM realm.

Mrs Glessen feels the greatest gains in promoting women in STEM are made through embedding STEM into the everyday activities both inside and outside the classroom.

“One of the many, great aspects of an all-girls environment is that our students don’t have to combat gender stereotypes. This not only provides opportunity but empowerment too; our girls are empowered to achieve and grow in an environment where possibilities are endless and they can reach their full potential.”