



Monash University and John Monash Science School enable regional science students to reach beyond classroom walls with WebEx Collaboration technology



Key points

Business need

Keep students engaged in science by providing them with access to world-class educators and an open, collaborative learning environment.

Solution

Monash University and JMSS use Cisco WebEx to create a Connected Learning environment. Regardless of their physical location, students can collaborate and learn together using WebEx.

Benefits

Students in remote and regional locations have the same opportunities to learn from leading educators as their inner-city peers. Educators can sustain student involvement through use of video and interactive elements of WebEx. Students are not just passive observers but active participants immersed in the classroom environment.

John Monash Science School (JMSS) is a secondary school focusing on science, mathematics and associated technologies. It is the result of a partnership between the Victorian Government and Monash University, and is located in a purpose-built facility on the university's Clayton Campus in Melbourne, Victoria. Opened in 2010, the school caters to students from years 10-12 and has approximately 650 students.

Keeping students engaged in science

At a policy level, JMSS was created to increase student participation in science and mathematics, drawing on Monash University's expertise in science, mathematics and education.¹ As Professor Deborah Corrigan, Director of the Centre for Science, Mathematics and Technology Education at Monash University; and Peter Corkill, Principal of JMSS explain.

"In partnership, Monash University and John Monash Science School's goal is to create exciting opportunities for students and teachers to engage in groundbreaking emerging sciences."

The challenge for educators was to extend JMSS's reach beyond inner-city Melbourne to rural and regional Australia, who may not have the opportunity to study emerging sciences.

"We wanted to extend the opportunity for students in remote areas to participate and learn from our teachers," says Peter Corkill, Principal of JMSS.

"To engage 15- and 16-year-olds over the internet, we knew we would need to connect in real time and use video so they could build relationships with their teachers and each other. We knew this would be vital to sustaining their involvement."

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– **Professor Deborah Corrigan**,
Director of the Centre for
Science, Mathematics and
Technology Education,
Monash University; and
Peter Corkill,
Principal, John Monash
Science School

Solution

National Virtual School of Emerging Sciences

In 2012, Monash University, in partnership with JMSS and Pearson Australia, founded the National Virtual School of Emerging Sciences (NVSES). Funded by the Australian Government, the NVSES comprises a two-year learning program for Year 10 students to study new emerging sciences. Students can study up to four units, each for eight weeks, in astrophysics and nanoscience. All units are aligned with the Australian Curriculum.

Cisco WebEx technology proved to be well-suited to NVSES’ needs. A long-time user of WebEx, Monash University recommended the online collaboration application to create interactive classrooms.

WebEx technology is cloud-based, meaning it can be used by students and teachers anywhere, allowing students in remote locations to connect without the boundaries of participating in a traditional classroom. The solution has a simple and easy-to-use interface, enabling students and teachers to share documents and video. WebEx provides a collaborative experience where students can exchange ideas and concepts in an interactive learning environment.

NVSES went live with its first WebEx-based class in astrophysics in February 2013. More than 20 Year 10 students from schools in three Australian states joined the first term, including those from Gungahlin College in the ACT, Willunga High School in South Australia and the Tasmanian eSchool. Classes were run in a team-teaching format – two teachers taught approximately 30 students so they could split into groups. Teachers at JMSS used a custom-built studio on school grounds to deliver their classes.

The success of the program is evident from its expansion over its two-year run. By the program’s end in December 2014, more than 35 schools and 460 students had participated in NVSES classes via WebEx.

Benefits

Engagement and interaction in the virtual classroom

Students enjoyed the flexibility of the online classroom environment created in WebEx, according to Jasmine Evans, Project Officer at Monash University.

“We conducted student surveys to gauge feedback and it was very positive,” she says. “Students liked being able to see each other in real-time, interact and take part in group discussions and projects. They liked the fact they weren’t just passive observers.”

One Year 10 survey participant described her favourite moment during her term as a NVSES student: “My favourite task was the group project that we all presented at the end. It was a long-term project that spanned across a few lessons and each group got to present their own project to a panel of teachers.”

A Year 9 survey participant added: “Initially I thought we would all just sit there listening to teachers talking, but it’s really interactive; you can have your hand up and ask questions.”



Unprecedented access to world-class educators

As well as building relationships with teachers, academics and peers from other schools, Year 10 students participating in NVSES were taught by interstate and international guest speakers.

For example, in 2013, students studying nanoscience met CSIRO Principal Research scientist Dr Grahame Rosolen, who joined teachers in the NVSES studio, while astrophysics students were joined by Dr Helen Maynard-Casely from her Sydney research laboratory at the Australian Nuclear Science and Technology Organisation.

“The depth and variety of experts students can access via virtual classrooms is second to none,” says Corkill. “This program really brings science to life for students – when they can talk to a real, working scientist and ask questions, it makes the possibility of becoming one themselves a more tangible goal.”

Emerging Sciences Victoria: a new Connected Learning program

The success of the NVSES led to a new learning program beginning in January 2015 – Emerging Sciences Victoria. This new program is a collaboration between JMSS, the Victorian Department of Education and Early Childhood Development, and Monash University.

Emerging Sciences Victoria will enable Year 10 science students in government schools across Victoria to study an emerging science subject as part of their own courses.

“Emerging Sciences Victoria will deliver high-quality, face-to-face learning using WebEx,” explains Chris Harte, JMSS Leading Teacher and Director of Emerging Sciences Victoria. “The WebEx platform enables learners from different schools to learn collaboratively via a live, interactive video link to specialist speakers from our teaching studio here in JMSS.”

“The response has been phenomenal. We have places for around 250 students per semester for the first course. So far we’ve received 388 expressions of interest, so we’re on-track to be over-subscribed for actual enrolments.”

Students enrolled in Emerging Sciences Victoria use a platform designed by JMSS and based on single sign-on access to the Cisco WebEx video classroom, Google Apps for Education and realsmart – a learning and assessment portfolio.

“We’ve proven that the pedagogy and the virtual space can work incredibly effectively, and in lots of ways, the sky is the limit,” says Harte.

“I thought we would all just sit there listening to teachers talking, but it’s really interactive; you can have your hand up and ask questions.”

– Year 9 student participant,
National Virtual School of
Emerging Sciences²

For more information

For more information about Cisco Connected Learning, visit www.cisco.com/web/strategy/education/primary_connectedlearning.html.

To discover more about Emerging Sciences Victoria, visit www.emsci.vic.edu.au, and for the National Virtual School of Emerging Sciences visit www.nvses.edu.au.

Products and services

Cisco WebEx
Cisco WebEx Meeting Center

1. [Energising Science and Mathematics Education in Victoria](#), State Government of Victoria, 2009.
2. Student quotes taken from the NVSES student survey, Associate Professor Debra Panizzon, Faculty of Education, Monash University, 2014.

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