

THE EDUCATION **Technology** GUIDE

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BRINGING STUDENTS TOGETHER WITH TECHNOLOGY

USING ICT TO EXTEND YOUR CLASSROOM

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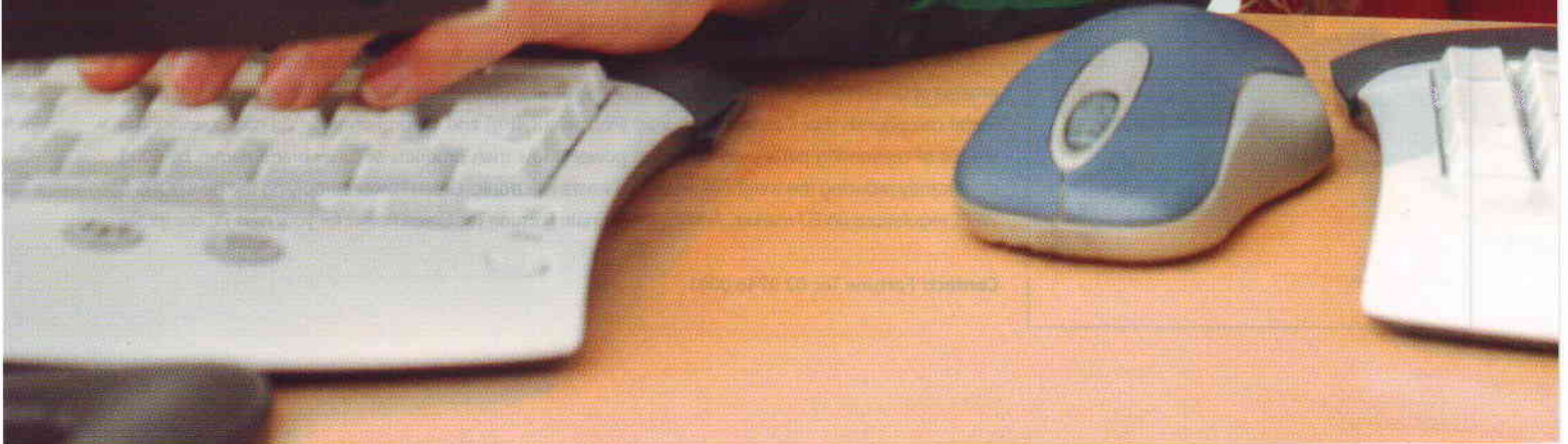
THE EDUCATION TECHNOLOGY GUIDE ISSUE 8

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For high school math and science students



EXTEND YOUR CLASSROOM



Take your class to visit NASA, the zoo or maybe diving on the reef... All without leaving your school.

Technologies such as video-, audio- and web conferencing are allowing students to connect in 'real-time' to a variety of experiences. Carol Daunt reports on the features of each of these technologies and how you can access and use them to extend your classroom.

Teach a class scattered around the state.... Bring your favourite author into the school from wherever they are in the world.... Take your class to visit NASA, the zoo or maybe diving on the reef.... All without leaving your school. You could be extending your classroom through the use of video- audio- and web conferencing – be there without going.

Videoconferencing

Videoconferencing is the closest thing to face-to-face teaching, as it allows you to see, hear and talk to people in another location. You can bring together just a few people at one site or many at sites around the world. It is fantastic for teaching and learning because it gives you a rich environment that includes the following features:

- Use a document camera to display pictures, graphs, maps and small objects.
- Display your PowerPoint presentation or other computer files.
- Play a video so everyone can see it.
- Record your session.
- Collaborate on computer data with others in the class.

OM

By Carol Daunt

Systems range from desktops, which combine with your computer, to large room systems designed for presentations to larger classes. The system you choose will depend on your use. For example, if you need to connect with 20 people at one site, you will need a system and dedicated room set up for that purpose – a desktop system will not be the answer.

Videoconference systems are now relatively cheap – you can buy a quality desktop system for around \$3,000. However, you do not need to invest in hardware; you can hire facilities for reasonable rates (\$150-\$250 per hour). Many schools now have videoconferencing systems, as do most TAFE Colleges and Universities – both here and in other countries.

Advantages

- Live sound, colour and motion
- Powerful medium – can be very interactive
- Easy to use

Disadvantages

- Need specialist equipment – but this is getting cheaper

Audio Conferencing

Most of us have been involved in a 'teleconference' but may not be aware of the new features available, which make teaching via telephone a richer experience. Your telephone can be a powerful tool that allows you to pose a multiple choice question to your class and have them give their answer by pressing a number on their telephone keypad. Telephone conferencing has become very sophisticated with the following features available through an operator-attended call or directly to a web interface on your computer to allow you to control the call.

Q&A – This feature allows students to indicate they have a question or comment without interrupting the class. By pressing a number on their telephone keypad, they indicate their desire to speak. They will be placed in a queue and you can respond at your discretion. This allows you to have a more organised session without the disruption of students talking at the same time.

Voting/Polling – This is a feature that allows you to know what all students are thinking at a given point in time. By posing a multiple-choice question you can have everyone answer by

pressing a number on their telephone keypad. You will immediately know the percentage of the students who chose each option and which individuals answered in a particular way – allowing you to follow up if necessary. You also receive a printout of the responses following your session.

Sub Conferencing - There may be times you wish to break students into smaller groups to discuss a range of issues and then report back to the whole group. Through the sub conferencing feature, you can put students into pre-determined groups, or arrange them during the session, for example, according to the responses to a particular issue. Groups can be as large or as small, and as few or as many as you wish.

All of these features are available from audio conference bridging providers at a small cost on top of your standard conference call fee. You do not have to invest in any hardware or software – all you need is your telephone.

Advantages

- Widely accessible – all you need is a phone
- Relatively cheap
- Easy to use

Disadvantages

- No visuals – you need to supply these through some other mechanism, such as print.

Web Conferencing

Web conferencing allows you to speak to your students and display still images (For example, PowerPoint) via the Internet. There are a variety of products available: some that combine the Internet with an audio conference, others that deliver sound & video images through the Internet. The latest products also include videoconferencing via a webcam.

Basic web conferencing tools will allow you to transmit images in conjunction with your voice. As you move to the next slide on your computer, this is 'pushed' to all students, so that everyone sees and hears the same message at the same time.

Most systems have features such as 'hand raising', chat rooms and student response systems that allow you to ask a multiple choice question and get an immediate response from all students using their keyboards.

You can also take students to websites during your session. As you click through to the site, they will all be brought along with you. You can set students free on the site to research something & then call them back together by pushing your next slide.

The system will also have an array of drawing tools that allow you to highlight sections by drawing lines, arrows, circles, and so on, or through colour.

You do not need to invest in any hardware or software. Everything you need can be downloaded from the Internet. Participants will be given a web address that will allow them to register and enter the session. Web conferencing combines the power of visuals with the voice and has the advantage of being accessible to anyone who has an Internet connection and a phone line.

Advantages

- Widely accessible – just need an Internet connection
- Relatively cheap
- Provides a visual component
- Provides a range of interactive tools – polling, hand-up and so on.

Disadvantages

- Two lines needed at this stage with some systems –one for Internet and one for voice

Teachers are using these technologies for many and varied rich learning experiences – below are a few examples.

The dispersed class

Students in remote areas are now being connected via any or all of the above conferencing technologies rather than the old HF radio used by Schools of the Air in the past. Most states and the Northern Territory have systems to connect students to each other and to their teachers. The use of clear audio and/or pictures greatly enhances the learning experience.

Students in small schools are also being connected to enable them to study subjects that their school cannot provide. Several state education systems have extensive

videoconference networks and these are used to deliver dozens of subjects to students throughout the network.

Universities and TAFE colleges have been using videoconferencing for over ten years to connect students across campuses with lecturers in a variety of subjects.

Connecting classes

Classes all over the world are connecting to each other to exchange views on all types of topics. Teachers often build a project around a few video or audio conference sessions with a class in another country. The students use email, discussion lists and blogs to supplement their real-time interactions.

One exciting example of a cross-cultural experience was the teaching of dance to students in Central Queensland and in New Zealand – at the same time. Both classes connected with their dance teacher in Brisbane via videoconference. They spent several weeks learning traditional steps from both cultures and rehearsing routines. The Queensland students then traveled to New Zealand where the two groups rehearsed face-to-face and performed a concert for a large audience, including local dignitaries.

Bringing guests to your class

You can bring anyone from anywhere in the world into your classroom. It might be an author, scientist, celebrity or subject matter expert. How exciting for students to have a live connection with someone they have been studying. They can question, comment on and discuss issues with the guest. If you use video or web conferencing, your students can see the guest and any items they want to show.

Virtual field trips

A videoconference field trip gives you and your students an opportunity to visit places you might not be able to otherwise, such as zoos, museums, NASA, the reef and more. One of the most successful of these is a dive to see the wonders of the Great Barrier Reef at the world's largest living coral reef aquarium in Townsville. Students can experience the reef live and have their questions answered from deep in the tanks by scuba divers who will be linked by microphone within the scuba mask. Thousands of students around the world have experienced this spectacular field trip.

Professional development

Who would you like to have present a workshop? Distance is no longer a problem. You can have any expert from any part of the country or the world present to your next staff in-service day. Any of the above technologies can be used for increasing your own knowledge without leaving the school.

So think twice before you dismiss that next great idea because someone is halfway around the world – you may be able to use technology to link in real-time. Anyone can do it, anytime – for surprisingly little cost.

Carol Daunt is an expert in the application & use of learning technologies. With almost twenty years experience she is recognised as the leader in her field - both in Australia and internationally. She is co-founder & Executive Director of the Learning Technologies User Group.

For information see: www.learntel.com.au AND www.ltug.org

