BRINGING A 1-TO-1 PROGRAM TO LIFE

A HANDBOOK FOR MIDDLE SCHOOL TEACHERS

Microsoft® Partners in Learning

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Queensland Government

Government of South Australia
Department of Education and Children's Services

State Government Victoria
Department of Education and Early Childhood Development

Acknowledgements

This series of three guide books is the result of a joint endeavour between Microsoft® Partners in Learning (PiL) and State Departments of Education from around Australia.

Microsoft Partners in Learning is an initiative committed to helping teachers and school leaders connect, collaborate, create and share so that students can realise their greatest potential.

These guides were developed following discussions on how governments partnering with Microsoft could best support the Digital Education Revolution. They aim to provide teachers who are grappling with significant change brought about by the Digital Education Revolution by providing curriculum ideas, examples, case studies and tips.

1-to-1 learning can be challenging to traditional models of teaching and learning. To be effective it demands significant shifts in pedagogy, physical space and the design of learning experiences.

These guides provide starting points to make the journey more manageable and exciting. By providing practical guidance from experienced educators we hope to inspire teachers to take advantage of the range of software and devices from Microsoft and its partners to engage and empower students in the learning process.

To develop these guides, we worked with three departments of Education, specifically: the Department of Education and Early Childhood Development in Victoria, the Department of Education and Children's Services in South Australia and the Queensland Department of Education and Training.

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Queensland Department of Education and Training schools featured in the case studies for this book

Burnett State College
Caboolture State High School
Corinda State High School
Ferny Grove State School
Frenchville State School
Jindalee State School
Kedron State High School
McDowall State School
Varsity College

Victorian Department of Education and Early Childhood Development Schools featured in the case studies for this book

Balwyn High School
Belmont High School
Lara Secondary College
Geelong High School
Glen Waverly Secondary College
St Helena Secondary College

South Australia Department of Education and Children's Services featured in the case studies for this book

Australian Science and Mathematics School (AMAS)
Grange Schools
Keith Area School
Littlehampton Primary
Munno Para Primary School
Prospect Primary
Richmond Primary School
Thiele Primary School

Table of contents

Introduction

Today's students need a richer and more engaging curriculum that meets the demands of an increasingly globalised and interconnected world. Access to Wikis, blogs, webcasting, distant experts, mentors, and to communities of collaborative practice and shared virtual environments can help to break down classroom walls, opening up exciting possibilities and creating a powerful educational journey.

Teachers can harness Web 2.0 applications and new technologies to create learning opportunities that develop the knowledge, skills and behaviours students require to live, learn and work in the 21st century. ICT-rich learning and teaching can increase student participation, engagement and achievement, and enable students to connect with experts and with other learners all over the world.

How to use this handbook

This handbook is based on the essential question:

How can using devices in my classroom transform learning into 21st century skills?

This handbook has been developed to support teachers working with a 1-to-1 program. It explains digital pedagogy and provides learning and teaching ideas and strategies that demonstrate how to use readily available software and online tools. These learning and teaching strategies are designed to be flexible and relevant to any year level or learning area. Teachers are encouraged to adapt them to best suit their students.

This handbook also provides real-life success stories from teachers who are enacting digital pedagogy and working with a 1-to-1 program.

It is not intended that teachers 'work through' this handbook systematically. Rather, they should use it to reflect and plan for valuable learning experiences and as a springboard from which to transform their pedagogical practice.

Reflective Questions

• What does digital pedagogy mean to me?

• What do I think 'learning in the 21st century' means? For students? For teachers?

• How can I set up my classroom for successful learning experiences?

• What are my values and beliefs about the role of ICT in teaching and learning?

• How do I use technology to help me develop my curriculum planning so that it supports enquiry learning and assessment practices?

• What skills will my students and I need in the 21st century?

Digital pedagogy

What is digital pedagogy?

Digital pedagogy is a new way of working and learning with ICT to facilitate quality learning experiences for 21st century digital learners. It is defined as the convergence of technical skills, pedagogical practices and understanding of curriculum design appropriate for digital students. It moves the focus from ICT tools and skills to a way of working in the digital world.

Used effectively, digital pedagogy:

• Supports, enables and transforms learning and teaching to provide rich, diverse and flexible learning opportunities for a digital generation.

• Provides the basis for engaging students in actively constructing and applying rich learning in purposeful and meaningful ways.

• Enhances opportunities for authentic, contextualised assessment that supports learning in a digital context.

Reflective Questions

• How will I judge my success?

• What does my current pedagogy look like?

• How is teaching with ICT similar to and different from my current pedagogy?

• How can I involve parents in the learning and teaching experience?

• What ICT 'expertise' is available in my classroom for other students to tap into – e.g. a webcasting expert?

• How will my classroom management strategies support students working in groups – location, monitoring of students to ensure all are on-task, meeting the needs of all students, etc?

Redesigning teaching practices with a digital pedagogy focus

Digital pedagogy asks us to understand how effective teaching practices that are already commonly used in the classroom can be redesigned to incorporate digital tools and technologies in order to enhance and extend the learning experience for students. For example:

Standard teaching practice 1

Ask students to keep a journal so that they can reflect on their learning.

Redesigned activity

Set up a personal blog for each student.

Advantage

Student journals can connect to a local or global audience, students can receive immediate feedback from their teacher and peers – and, most importantly, entries, comments and feedback on the blog can be recorded for use at a later time.

Standard teaching practice 2

Discussion with students.

Redesigned activity

Online discussion forum.

Advantage

Gives students an opportunity for extra 'think time'.

Device management – Top Ten Tips

Effective classroom management strategies are a prerequisite to good teaching. When devices are introduced into the classroom, it is critical that the teacher is equipped with knowledge and skills to manage the students' use of these devices. It is also important for teachers to construct engaging, challenging learning experiences.

Managing a classroom of students with devices is mostly about managing the student learning experiences.

1. **Start small, and then grow.** Students want to use the devices, so will accept if their use in the classroom is infrequent at first. Ensure that you praise their good use, and encourage students to make suggestions in relation to how the devices could be used to support their learning.

2. **When you first begin using devices** in class, try building a focused and structured task all students are doing at once. It's a great way to understand how differently individuals will use the devices to address the same criteria.

3. **Create a culture of responsible use.** Good usage by individual students should be praised and lead to benefits for the whole group. Encourage students to support each other and to problem-solve any technical or organisational issues encountered, building a positive classroom culture.

4. **Have strategies for gaining or refocusing student attention.** For example, lids down or 'half mast' this means that the device screen is lowered but not completely shut. This will ensure that the students cannot be as distracted while you or other class members are attempting to impart information, without sending the machines to 'sleep' mode. Their lids need to be below the line of sight for students' eyes.

   During the lesson, conduct a 'hands-up pop quiz' or a short test or other sorts of quizzes to gauge student progress. You could have the students show you or email you their work progress, ask the class questions during activities about the activity, such as good Web sites they have found, etc. to assist in keeping the students on task.

5. **Be wary of extended device use.** Try to encourage the students to stretch, move around, and focus on 25m + lines of sight every 20 minutes. With a 30 second break every 20 minutes, safe practices will be observed.

6. **Technological monitoring and filtering solutions are not perfect.** Many teachers would like to use screen-monitoring software to see all the students' screens during a class and not have to walk around the room. These software solutions are never 100% and the teacher must still circulate in the classroom. For real-time management, such tools can slow down the natural discourse. 'Non-virtual proximity control' is better! Rigourous learning activities should engage the students.

7. **Review your expectations.** If you measured the success of a learning experience by how quiet your room is, now is a good time to revisit this. Powerful learning occurs when students collaborate and work together in teams. This can be noisier than traditional, individual learning.

   Try new things, but remember what used to work too.

8. **Be realistic.** Students may need time to become used to ready access to devices. Pair students, by selecting an ICT-competent student to work with a less experienced student, to complete a task, and in the process help each other learn. Students benefit from the experience of learning with, and from, other students.

9. **Build a solid foundation.** Technology has great power to help students obtain, organise, manipulate, and display information. Some students will impress you with innovative uses, processes and results. Other students will have more basic achievements. Regardless of how advanced the students appear, if they haven't mastered file management, they will need your help. File management (including data backup) is an important technology based skill you can help them develop.

10. **Catch them being good and empower them to empower each other.** Be sure to move around the classroom when teaching, and make note of the use of the devices in class. Help students learn from, and with each other, and share their innovative learnings.

Cybersafety

Help keep your students' devices secure online by following these guidelines:

- Turn on Automatic Updates – Make sure you have Windows® Updates set to Automatic. This will ensure that you have the most up-to-date protection on your operating system. Microsoft release updates every month, which you will automatically receive once you have done this. You can check manually for any updates by clicking Start>Control Panel>System and Security>Windows Update.

- Install antivirus and antispyware software – Microsoft Security Essentials *(www.microsoft.com/security_essentials/)* offers you real-time protection for your student PCs. This high-quality and hassle-free download* helps guard your student PCs against viruses, spyware and other malicious software. This will automatically be kept up to date and will scan itself weekly. Your PC must run genuine Windows® to install Microsoft Security Essentials and download* fees may apply as set by your Internet service provider.

- Make sure you have a firewall switched on – A firewall adds another layer of protection between you and the Internet. It can help block viruses and malicious software and help prevent your PC from sending out harmful content to other users. You can check this by clicking Start>Control Panel>System and Security>Windows Firewall.

- Ensure that you are using the latest browser version – In the case of Microsoft® Internet Explorer®, this is version 9. Visit *www.microsoft.com/ie* for the download* and instructions. Older browser versions only protected you against older online threats; newer browsers have new technologies designed to provide you with greater protection.

- Ensure that you are using the latest operating system version – This will offer you greater protection from online threats. Windows® 7 is the most recent operating system by Microsoft and is available to everyone now. Visit *www.microsoft.com/australia/windows/windows-7* for more information.

*Download fees and charges may apply as set by your Internet service provider.

- Always set new users as standard users and not as admin users – Avoiding giving out admin rights ensures that you have complete control of your PC. As a standard user, they will still be able to fully function, but if they were do something that affected other users, a permission request would be sent to you.

- Visit *www.thinkuknow.org.au* – ThinkUKnow (TUK) is an Internet safety program offering interactive presentations to parents, carers and teachers via primary and secondary schools across Australia, using a network of trained volunteers from the Australian Federal Police (AFP) and Microsoft Australia. Created by the UK Child Exploitation and Online Protection (CEOP) Centre, ThinkUKnow Australia is being rolled out nationally by the AFP and Microsoft Australia. Topics cover cyberbullying, social networking, mobile technologies and gaming, and you can register for a presentation and/or obtain further information at the Web site above.

- Visit *www.microsoft.com/australia/protect/default.mspx* – As well as the TUK initiative, Microsoft has a dedicated online team to help keep you up to date with all the latest privacy and protection information.

- Visit the Australian Communications and Media Authority's Web site *www.cybersmart.gov.au/* – This is the Australian Government's online security initiative to help kids, parents and teachers stay safe online and help fight against cyberbullying.

- Finally, if you are concerned that the security of your PC may be compromised, you can run a scan at any time at *www.microsoft.com.au/protect*

Reflective Questions

- How can I develop my students' understanding of the importance of safe and ethical use of technology at home and at school?

- What parent information might be required?

Planning your 1-to-1 program

Reflective learning
Shaping my thinking

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Reflective learning

This section of the handbook provides teachers with a framework through which to reflect on the way that 1-to-1 devices are making a difference in their classroom practice and, most importantly, their impact on student learning, particularly in literacy and numeracy. Through careful planning, teachers can develop a process that will guide their enquiry as they collect and analyse data, and reflect on their practice. This is classroom-based action research that will form an important part of the school-based evaluation of the 1-to-1 devices.

Teachers are encouraged to work in collaboration, whether face-to-face or online, in order to deepen their understanding, share practice, test ideas with colleagues and stay motivated!

Reflective learning starts with a question, which could be as simple as "If my students used their devices to record their science projects as a blog, would it deepen their understanding?" Next, you will need to work out what it would take to see if others have already tried this approach and if they were successful. It also involves deciding how to evaluate and measure success and what changes might be required to improve classroom practice.

There are three stages that make up the 1-to-1 Devices Reflective Learning process:

1. Finding focus

2. Commitment to act

3. Implementation plan

Reflective Questions

- How can I use my current pedagogical practices and transform them into powerful 1-to-1 experiences?

- How can I build on the ICT skills, interests and experiences of my students?

- What existing ICT skills and understanding do I have that are readily applicable to working 1-to-1?

- What are my ICT professional goals?

1. Finding focus

Reflecting on how your 1-to-1 devices are making a difference in the classroom starts with a question. The framework below will help you with this first stage of the process. Use the questions below to identify your needs and focus your research and next steps.

What is my essential question?

This is your broad, 'big picture' question.

How did I identify my essential question?

This is a description of the rationale and any background information that helped you to identify this question as your essential question.

Why is this question important to you and your students' learning?

What questions do I need to ask to get started?

These are focusing questions to get you started with your research.

Which questions need to be addressed along the way to help you answer your essential question?
Write these as open-ended questions.

Success indicators – How will I know?

Success indicators are the evidence of progress. They should be supported by tangible evidence.

Fast forward to a year ahead. What do I want my student learning to look like?

How will improvements in student literacy and/or numeracy be demonstrated?

What changes in your classroom practice – curriculum planning, teaching, learning, and assessment – do you want to achieve?

What data will I need to collect throughout the year as evidence of achievement?

What will you need in order to 'write' your new story?

What school/system/data is available to provide some prompts?

• Local data
• National Assessment Program – Literacy and Numeracy (NAPLAN) national tests
• Online demand testing
• Video footage

Where are we now? How are we progressing?

Baseline situation

How are things now in relation to the presence of the above indicators? What is your starting point in terms of your student skills, your pedagogy, practice and ICT skills? The reflection questions from the 'Shaping my thinking' section on page 15 may help you with this process. Also, consider gathering some initial student reflections, observations, artefacts and responses..

(Adapted from EdPartnerships International.)

2. Commitment to act

What I will do to investigate my questions:				
Possible focus	**Specific actions**			
	Term 1	Term 2	Term 3	Term 4
Professional reading				
Something new – I'll try …				
How will I test a new practice?				
What school-based professional learning is available?				
People I can work with:				

3. Implementation plan

My essential question:

I will achieve this through (e.g. professional reading, professional learning, reflection, coaching):

So that it leads to:

Milestone	Date/time	Evidence of progress

Shaping my thinking

My values and beliefs

Purpose: The questions below are intended to help principals and teachers reflect on the values and beliefs that underpin the learning and teaching practice across the school. Some suggested uses for 'Shaping my thinking' include 'conversation starters' for Professional Learning Teams, as foci for peer-coaching sessions or for reference when planning curriculum.

1. Where can I start?

2. How can I take my successful classroom strategies (what's working now) and use them to create a new way of working with 1-to-1 devices?

3. How do I use technology to help me develop my curriculum planning so that it supports enquiry learning and assessment practices?

Questions	Links for further information
• What are my values and beliefs about student learning? • What are my values and beliefs about the role of ICT in learning and teaching?	Curriculum Planning Guidelines Phase 2: Planning and Resources: ***http://www.education.vic.gov.au/studentlearning/curriculum/preptoyear10/guidelines/phase2/psg/planproctemplate.htm*** Curriculum Planning Modules: ***http://www.education.vic.gov.au/studentlearning/curriculum/preptoyear10/modules/default.htm*** *School Improvement: A Theory of Action* 'Core beliefs', page 6, Fraser, D. & Petch, J. 2007, Victorian Department of Education, Melbourne

Students

• How do I involve students in curriculum planning?
 	
I can ask students:
 	
    – What should teachers know about you?
    – What is important for you to learn?
    – What do you think younger students need to learn?
    – How do you learn best?
    – How do you want to be assessed?
 	
• How can I best harness students' enthusiasm for the 1-to-1 devices?
 	
• How can I build on the ICT skills, interests and experiences of my students?
	Curriculum Planning Modules – Facilitator's advice:
	http://www.education.vic.gov.au/studentlearning/curriculum/preptoyear10/modules/faciladvice.htm

Questions	Links for further information

Learning and teaching

- Where can I go to discover professional learning opportunities?

- What does my current pedagogy look like? (How do I teach?)
  - What does it look like when I am teaching with ICT?
  - How are they the same/different? Why?
  - How might it look in my 1-to-1 classroom?

- What are my curriculum planning practices?
  - How do they reflect the integration of ICT?
  - How might they need to change to reflect learning and teaching with 1-to-1?

- What are my assessment practices?
  - How do they reflect the integration of ICT?
  - How might they need to change to reflect learning and teaching with 1-to-1?

- What learning and teaching strategies do I currently use that support the development of higher-order thinking?

- What existing learning and teaching resources do I have (right now!) that I use regularly and that readily support a 1-to-1 environment?

- What existing online resources and tools do I use regularly that readily support a 1-to-1 environment?

- How do I currently model correct copyright practices, and safe and ethical use of the Internet?

- What processes for permissions and protocols for intellectual property including copyright, and safe and ethical use of the Internet are in place and followed across the school?
  - How might these need to be updated to reflect introduction of 1-to-1 devices?

- How can we keep students and parents informed of new processes?

Microsoft Education Australia:
http://www.microsoft.com/australia/education

Microsoft Partners in Learning:
http://www.microsoft.com.au/partnersinlearning

Queensland Government Department of Education and Training:
http://deta.qld.gov.au/

Bloom's digital taxonomy:
http://edorigami.wikispaces.com/Bloom%27s+Digital+Taxonomy

South Australian Department of Education and Children's Services:
http://www.decs.sa.gov.au/

Victorian Department of Education and Early Childhood Development:
http://www.education.vic.gov.au/

Classroom Instruction That Works:
http://www.middleweb.com/MWLresources/marzchat1.html

What makes a good enquiry unit?
http://www.eqa.edu.au/site/whatmakesagoodinquiry.html

Principles of Learning and Teaching:
http://www.education.vic.gov.au/studentlearning/teachingprinciples/default.htm

Curriculum planning:
http://www.education.vic.gov.au/studentlearning/curriculum/default.htm

Intel® Teach Unit Plans:
http://educate.intel.com/au/ProjectDesign/UnitPlans/index.htm

Working with the Web:
http://www.education.vic.gov.au/management/elearningsupportservices/www/

Smartcopying:
http://www.smartcopying.edu.au/scw/go

Professional learning

- What existing ICT skills and understandings do I have that are readily applicable to 1-to-1 devices?

- What skills and understandings do I need to develop?

Microsoft Partners in Learning Professional Learning Programs:
http://www.microsoft.com/australia/education/schools/partners-in-learning/professional-development.aspx

ePotential ICT Capabilities Resource:
http://epotential.education.vic.gov.au/

eLearning ICT Showcases:
http://epotential.education.vic.gov.au/showcase/

SA eStrategy Framework:
http://www.decs.sa.gov.au/learningtechnologies/pages/leaders/30742/

QLD SMARTClassrooms Professional Development Framework:
http://education.qld.gov.au/smartclassrooms/pdframework/

K-W-H-L chart: Shaping my thinking about 1-to-1 devices

K-W-H-L charts are a way to organise what you'd like to learn about a topic before you launch into the research. The K stands for what you already *know*; the W stands for what you *want* to learn; the H stands for deciding *how* you think you can learn it; and the L stands for what you *learn* as you go.

Term 1

What do I know about learning and teaching with 1-to-1 devices?

What do I want to find out about learning and teaching with 1-to-1 devices?

What have I learned about learning and teaching with 1-to-1 devices?

Term 2

What do I know about learning and teaching with 1-to-1 devices?	What do I want to find out about learning and teaching with 1-to-1 devices?	What have I learnt about learning and teaching with 1-to-1 devices?

Term 3

What do I know about learning and teaching with 1-to-1 devices?	What do I want to find out about learning and teaching with 1-to-1 devices?	What have I learnt about learning and teaching with 1-to-1 devices?

Term 4

What do I know about learning and teaching with 1-to-1 devices?	What do I want to find out about learning and teaching with 1-to-1 devices?	What have I learnt about learning and teaching with 1-to-1 devices?

Case studies – Queensland

- Burnett State College
- Caboolture State High School
- Corinda State High School
- Kedron State High School
- Frenchville State School
- Jindalee State School
- McDowall State School
- Varsity College
- Ferny Grove State School

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Scoping out science

Year 11 and 12 science students at Burnett State College in Queensland use their laptops for all kinds of science experiences

Burnett State College science teacher Mark Harm introduced laptops into his science classes, so that students could use them to record data and research during experiments .

Mark's science students use their laptops to connect with scientific devices, such as data loggers and digital microscopes that connect to a range of measuring instruments. Students can then record information such as environmental conditions, water movement and even local road traffic conditions. They can even attach sensors to measure heat capacity and insulating properties of certain materials..

To begin an experiment, Mark divides the students into groups who share one laptop connected to one data logger. He believes this is a great way to get the students used to collaborating as a team on projects.

Other students observing the experiment may use their own laptops to record notes, to save the logged data, to email files to other group members or analyse the data using Microsoft® Office Excel® spreadsheets and graphs.

Mark also gets the students to film the experiments using a Flip Video™ camcorder or Web cam. The footage can be used later as reference in the overall project presentation.

The experiment and its results are placed on a blog for the whole class to use. Students can also add research, pictures, video, and comments to develop the hypothesis and analyse results. Mark find this especially useful because it 'time-stamps' their work, making it easier for him to track the progress of their research.

Wikis, accessed through a Virtual Classroom, are also used for ongoing research and to create glossaries. All students can contribute to the wiki, so they work collaboratively toward a common learning goal.

The students can also create individual blogs that they use like journals, adding their own notes and reflections. They can use Audacity® to record narration for their final presentations and tutorials.

Once the science project is complete, the students organise the information, data, images, audio and video into a presentation.

Student engagement

With 1-to-1 access to laptops, students were quick to benefit from sharing data and resources with other students. For example, when students have an inquiry, there's no need to jot down a note to research the answer later. They can use the Internet to quickly look up the relevant information to get an immediate result.

Success factors

The classroom projector has become a great tool to celebrate student success. Mark uses it to showcase student work.

Students will often take on the role of the teacher, providing links to sites and information they have found. This can be especially useful with younger students who don't feel comfortable getting out in front of the class.

Using their laptops and the software program AB Tutor Control *(www.abconsulting.com/html/Tutor_Control.html)* students simply share their information or the site they have found by broadcasting the contents of their screen via the projector.

"Ensure the teachers are comfortable and don't feel under pressure to achieve improved results. We collected successful anecdotes, not data."

*Mark Harm, science teacher,
Burnett State College, Queensland*

Potential improvements

To ensure a reliable wireless network solution, students and teachers have to update to the latest software.

Top tips

• Mark spent time talking to teachers asking them to contribute ideas on the software that they felt was required for the build on the laptops. Mark asked the teachers: What do students need to learn? What tools and software support this? Are there different tools needed for different KLAs? He quickly worked out what software was required and was able to standardise each notebook.

• When rolling out the laptops, the school didn't put any expectation on the teachers. This was important, for example, there were no demands on the amount of time teachers were to use the laptops in lessons. The school management team let things like this evolve organically. Because Mark focused on the using the laptop as a learning tool and was quick to share ideas it was surprising how fast other teachers adopted the use of the laptops because they were free to use them as they saw appropriate.

• The school collected anecdotes not data. Mark provided multiple opportunities for his colleagues to share their ideas as a 'show and tell' at staff meeting which empowered them to demonstrate their understanding and knowledge. This proved to be an excellent method of sharing and celebrating success – for both teachers and students.

• Mark ensured all the science textbooks are available as electronic versions on students laptops. Making them available as PDFs is very useful for students as it means that their textbooks are with them all the time and they can search quickly – compared with print based textbooks which do not have that capability.

Pedagogy

Mark gets the students to work in small groups, pairs and individually and in rotation activities. This way, each student gets to use the equipment and understand how it captures information. The science classes have data projectors that they use for theatre style lectures, and sharing student work. The data projectors are also a useful tool to create class concept maps.

Learning spaces

The classrooms are connected with wireless network access, the furniture is flexible and can be quickly and easily arranged to suit different purposes. For example, the tables and chairs can be arranged either in rows or U-shape groups depending on the needs of the lesson.

Tools for learning

For this particular unit, Mark used student laptops, a data projector and a number of software tools including **ProLogger** *(www.unidata.com.au)* **Digital Microscope** and **Yenka Physics** *(www.yenka.com)*

He also uses:

Virtual Classroom to access unit resources and collect student work so that he can verify their understanding and use information to plan lessons.

Learning Objects from the Learning Place for revision and synthesis as well as encouraging students to critically review learning objects using student-determined criteria to develop their critical analysis skills.

Wikis and blogs to help students keep glossaries and discuss ideas.

Audacity® *(http://audacity.sourceforge.net/)* a superb resource for recording and editing sound. You can record live audio and edit Ogg Vorbis, MP3, WAV and AIFF sound files.

Flip Cameras *(www.theflip.com/en-au)* to record science experiments, tutorials and classes which are posted on the school intranet for revision, and for students who were absent from the class.

AB Tutor Control *(www.abconsulting.com/html/Tutor_Control.html)* is a remote control application that enables teachers to control their students' PCs from their computer.

More information?

Burnett State College: *www.burnettsc.eq.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Queensland Department of Education and Training: *http://education.qld.gov.au/smartclassrooms/*

Experiencing Asia Pacific

With only their laptops as hand luggage, Rebecca Smith of Caboolture State High School sent one class of Year 9 students on a virtual tour of the Asia Pacific region, researching and mapping as they went.

Rebecca started by extending her classroom to include a 'virtual classroom' – an online learning space that would house all of her students' work and activities. Then she introduced the topic, subject and concepts, explaining that during each lesson her students would visit a different part of the region – e.g. Kuala Lumpur.

Rebecca shared a list of activities or 'tasks' for her students to complete by posting it in their virtual classroom so that students could access it at anytime, anywhere. This was also useful for absent students or those wishing to revisit the class to develop their own learning goals and manage their own learning.

To make the topic engaging, Rebecca provided a wide range of digital resources for students to explore – these included Longmans Electronic Atlas, Learning Objects, Microsoft® Office PowerPoint® presentations, tutorials converted to Flash, links to resources and Web sites, as well as games, some created by Rebecca herself using Content Generator *(www. contentgenerator.net)*.

Because all of these resources were stored online, students could access them at any time from home or school with an Internet connection.

At the end of each class, students were asked to update a blog recording their experiences as if they had actually visited the area studied – describing how the place looked and felt, as well as its geographic features. The student blogs were housed in the virtual learning space, giving them one place for everything they needed. Rebecca was able to quickly read the blogs to check that students had understood the task and provide rapid feedback through the comment feature.

Constructivist learning

By playing games and exploring interactive media, the students were able to construct their own knowledge about the Asia Pacific region. They were also able to independently evaluate resources, critically selecting the most appropriate to their needs and learning styles.

At the conclusion of the unit the students were really enthused. They enjoyed the classes and felt that they had been able to grasp concepts more quickly and easily. They loved completing the blogs and Rebecca discovered that even the most reluctant writers didn't mind writing if it was online in a blog. The reflective nature of the task allowed the students to express themselves more freely.

Success factors

Rebecca taught the same unit to two year 9 classes – one with and one without laptops. She observed that the laptop class students were more engaged in the enquiry process and better able to manage their own learning and understanding of the content. She also noticed that they engaged in higher order thinking skills more regularly than the other class because they had to interpret information rather than just copying it into their books and gaining surface knowledge.

"The range of digital media and resources actually brings colour into education and takes away the black and white."

Rebecca Smith, SOSE teacher,
Caboolture State High School, Queensland

Both classes (traditional and laptop) did an identical test. Rebecca noticed the most significant difference was the higher quality of the short answer responses from the students in the laptop class. They could clearly articulate their understanding and make clear links between the information and their response.

Rebecca reflected on her own teaching and asked herself if she would ever teach the old way again where students just copied work into their books.

Potential improvements

Rebecca discovered that not all ideas translate into an effective lesson activity, e.g. online mapping software didn't work, so it's important to be flexible and agile.

Top tips

- 1-to-1 laptop programs using laptops with the Windows® operating system are about much more than using a word processor. You need to get students to really use the technology to show what they know.

- Be willing to make mistakes. If you've heard about blogs, give them a go. Find out about new technologies and use them.

- Be vigilant, especially at the beginning of a unit. The Internet is a big place. If students don't know what to do, give them guidance.

- Cater to individual student needs, monitor what they are doing and help them navigate their way through the digital technologies.

- Limit yourself to what can be achieved in one lesson. Be careful of setting unreal expectations and confusing the students and yourself.

- Plan carefully and take the time to think about when best to implement new ideas, strategies and software/digital tools.

Pedagogy

Rebecca used the Socratic method of inquiry and discussion as well as group work and individual work. Students worked independently and demonstrated their understanding in their individual blogs.

Learning spaces

Rebecca's classroom does not have wireless access, but there are sufficient data ports for all students to access the Internet. She also uses a whiteboard and a ceiling-mounted projector to project the Virtual Classroom onto the wall.

Tools for learning

For her Asia Pacific geography unit, Rebecca used:

Virtual Classroom to store unit resources and student blogs.

Blogs to help students create a travel journal of everything they had learned.

Longmans Electronic Atlas *(http://wps.pearsoned.com. au/atlas/)* – all the usability of a print based atlas but the electronic version has extra functionality including zoom, search, find tool, copy and paste as well as games.

Audacity® *(http://audacity.sourceforge.net/)* a superb resource for recording and editing sound. You can record live audio and edit Ogg Vorbis, MP3, WAV and AIFF sound files.

Content Generator *(www.contentgenerator.net/)* A program that lets you generate your own learning quizzes, games and applications without any coding.

More information?

Caboolture State High School: *www.cabooltureshs.eq.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Queensland Department of Education and Training: *http://education.qld.gov.au/smartclassrooms/*

Queensland Government

Bringing science to life

Kate Wallace at Corinda State High School, Queensland, used Wallwisher, an online noticeboard tool to turn her Year 9 science students from passive participants to active, engaged learners and more critical consumers of media.

Rather than simply playing an instructional video on chemical compounds and mixtures, Kate Wallace decided to get her students more actively involved in their learning by incorporating the use of student laptops and an online noticeboard in her chemistry class.

Using one of the student's laptops, Kate started the lesson by demonstrating how to set up an online noticeboard with Wallwisher, which is complimentary and doesn't require any personal student details. Students quickly saw how easy it was to add a title, images and a theme, and then set permissions as to who could post on their class noticeboard.

Once the students were confident in how Wallwisher worked, Kate played the instructional video on chemical compounds and asked them to reflect, compose and publish notes on their class chemistry noticeboard as the class video progressed.

To scaffold and focus the learning, she projected the evolving chemistry noticeboard onto the classroom wall so that students could see their notes being added in real-time.

Student engagement

Students responded positively and started to collaborate with each other comparing and discussing the value of their notes. Kate paused the video when students need extra time to enter their notes. To synthesize their notes, students reviewed all of the Wallwisher postings and selected the 'top ten' that best summarised their key understandings from the instructional video.

During the next class, once students had discussed their choices, Kate asked her students to design a presentation using these notes. Students were engaged and excited to carry out their task.

Success factors

Kate saw the following factors as instrumental to the success of her approach.

Students enjoyed using relevant technology and their laptops because it is an efficient way to learn.

The students responded very well to Wallwisher because it set up a collaborative learning space where they were expected to contribute to and be accountable for their learning.

Through using Wallwisher to deprivatise and share their learning instantly, a "knowledge network" was created where students were supported to contribute and add value to the class.

As they quickly identified inaccurate information and corrected it, this promoted collective intelligence. Kate was able to provide 'just-in-time' feedback when students needed it and at a differentiated level according to the needs of each student.

The noticeboard provided an easily accessible forum where students could debate and model good notes. Low achieving students observed how stronger students took good notes, how they picked up on errors and how they used technical language.

"Engaging students is the first step. Then you can really create authentic learning opportunities for students to develop their critical thinking skills."

Kate Wallace, science teacher,
Corinda State High School, Queensland

Students managed their own learning, which was student not teacher-led. They helped each other to make connections and check understandings, creating learning efficiencies.

Watching the video tutorials reduces the workload for students and the teacher because you don't have to revisit lessons when some students don't need it.

Potential improvements

There are several ideas that Kate has with regard to improving her use of technology in science teaching. These include: encouraging students to comment on blogs; setting up a monthly technology sessions so that students can further develop digital literacies and increasing her use of web conferencing. Ideally she'd like to immerse technology into all aspects of learning so that it becomes more connected to the outside world, relevant and transformational for students. She would also like to engage with a mentor to get deeper professional support.

Top tips

- Use laptops where and when appropriate, and make sure that you include a blend of learning with class discussions and using a variety of physical learning spaces.

- Focus on student-centred lessons. Explain your learning intentions and negotiate a clear goal with your students. Make sure they know where to access the information they need.

- Encourage group work with just one laptop shared between three or four students. This is ideal for publishing information on wikis for others to share. Try Café style groups with one student from each group moving around and gathering information. Ask students to negotiate their roles and tasks and nominate which role rotates.

Pedagogy

Kate believes that by working collaboratively and not setting herself up as the expert, she empowered students to debate with each other more freely and take charge of their own learning. This in turn encouraged peer-to-peer tutoring in science, as well as good learning techniques including how to take concise notes, how to articulate ideas and how to evaluate others' work.

Learning spaces

Kate's classroom layout supports collaborative learning with desks set up in the shape of the letter 'U' so that she can move freely around the class and individual students can get up and present their ideas in the centre, being easily visible by all. A data projector enables students to share learning quickly and four power outlets enable them to charge their laptops as they go.

Tools for learning

For this particular unit, Kate used the student laptops, projector and a complimentary online noticeboard tool called **Wallwisher** *(www.wallwisher.com)*

She also uses:

Virtual Classroom to access unit resources and collect student work so that she can verify their understanding and use information to plan lessons.

Learning objects from the Learning Place for revision and synthesis as well as encouraging students to critically review learning objects using student-determined criteria to develop their critical analysis skills.

Wikis and blogs to help students keep glossaries and discuss ideas.

Greenshot *(www.greenshot.sourceforge.net/)* for very precise screenshots so teachers can scaffold student learning with clear explanations.

Flip Video™ camcorders *(www.theflip.com/en-au)* to record science experiments, tutorials and classes which are posted on the school intranet for revision, and for students who were absent from the class.

More information?

Corinda State High School: *www.corindashs.eq.edu.au/*

Microsoft Education Australia:
www.microsoft.com/australia/education/

Queensland Department of Education and Training:
http://education.qld.gov.au/smartclassrooms/

Is 'doh' a real word?

Chrissie Coogan at Kedron State High School, Queensland, used a number of online tools to inspire her students to discover the etymology of the English language while increasing their vocabulary.

Starting with the well known Homer Simpson phrase, 'doh!', Chrissie challenged her students to find out what Homer Simpson and science have in common.

Telling them to focus on language and etymology she also specified that she wanted an answer wiki where they could debate and update their findings. When students challenged her use of the word wiki, Chrissie asked them to discover its meaning and origins as quickly as they could. This gave the class an opportunity for some just-in-time learning as they used their laptops to research.

Students were excited to contribute what they had found about the word wiki and to share their investigation techniques – from using key words searches, to asking an expert or visiting authoritative Web sites.

Once they had discovered how to research etymology for themselves, Chrissie set her students the task of uncovering the longest word in the English language.

This led to a discussion that the length of a word did not necessarily equate to its level of sophistication, an important consideration for students, especially when studying senior english.

Learning in context

As they investigated words, the class discussed parts of the speech, language of origin, frequency of use, who uses a given word and different pronunciation. This led them to use the text-to-speech functionality on their laptops to see how words are pronounced phonetically.

While the laptops brought the words to life, this raised the question if all words were pronounced phonetically? This led the class to brainstorm the concept using the Interactive Whiteboard. They viewed relevant websites including YouTube, which demonstrated how the same word could be pronounced differently to infer different moods for example, Homer Simpson's famous statement "doh!"

Their search for the longest word uncovered five finalists. After much debate, the class settled on a scientific protein as the longest word in the english language. The students found the word in an online quiz but it didn't appear in an online search engine, which led the class to debate the impact of technology in determining the validity of words. This led them to the online Oxford Dictionary and to a discussion on the number one criteria for a word to appear in the dictionary, which is frequency of use.

Chrissie then showed the class a video clip at: **www.youtube.com/watch?v=khSIYmTzt6U&feature=related** – is 'doh' a word? It discussed the usability and frequency of 'doh' and provided students with a visual reminder of the criteria.

So is 'doh' a word? Yes, the students eventually found that it was added to Oxford Dictionary in 1998.

Invent a word

Following their investigation, Chrissie then challenged her students to invent a word that describes a class of students who work using laptops. Students could provide their responses as a blog or as a video diary (vblog). Chrissie collated their responses using the complimentary tool **(www.wordle.net)** and presented them to the class as a Wordle™ picture. 'Laptoppers' was chosen as the most appropriate word and the students spent the lesson creating a definition and etymology for 'laptoppers' as well as working out how to get the word adopted into everyday language.

"The use of technology and the momentum of the lesson add to the buzz of learning and teaching."

Chrissie Coogan, English teacher,
Kedron State High School, Queensland

Success factors

Chrissie believes students are far more successful in learning how to use and recall a word if they immerse themselves in it and discover its usage for themselves.

Laptops support student-centred, teacher-guided lessons with rich online resources to support just-in-time learning.

Students enjoy being able to debate and present information in different ways – wikis, blogs, videos, etc.

Potential improvements

With students engaged in their learning, opportunities to share their work with others is important. Chrissie encourages her students to share their experiences using different methods of communication. For example, 'no talk lessons' when students communicate using instant messaging, videoconferencing and discussion blogs. This is a good way of collecting written evidence of the students' work while allowing for different learning styles and personality traits.

Top tips

• Make sure your students know how to save their files and organise their folders logically – Subject, unit, lesson, date etc.

• The first and last five minutes of every lesson need to be managed. Once students are all logged in, ask them to lower their laptop lids and focus on you. At the end of the class, check they have saved and logged off.

• Write driving questions on the electronic whiteboard or make them an announcement in the Virtual Classroom.

• Define limits right from the start: e.g. a blog entry of 25 words or fewer or the teacher will not read or respond to it; students can read and comment on each other's blogs.

• Build a strong rapport with students by talking and listening to them.

Pedagogy

Students are supported to develop their digital literacy by progressively building on previous knowledge and skills. Chrissie Coogan encourages her students to create a video diary (often called a vblog) about what they have learnt after each lesson, and which questions are still unanswered. This enables Chrissie to see what students have understood, and create appropriate content for future lessons.

Learning spaces

Kedron State High School has dedicated two, large converted classrooms to the laptop program. The classrooms have moveable furniture, beanbags, wireless connectivity and open spaces to suit the learning styles and needs of the students. There's also an Interactive Whiteboard where teachers can connect laptops to a projector and work collaboratively with the students.

Tools for learning

For this particular unit, students used laptops, digital cameras and a selection of online resources such as **Wordle (www.wordle.net)** and the **Oxford Dictionary *(www.oxforddictionaries.com/)***

She also uses:

Virtual Classroom to access unit resources and collect student work so that she can review their results.

Wikis and blogs to help students communicate in different ways to discuss ideas.

TinyURL *(http://tinyurl.com/)* - a tool that lets students create a tiny URL that will not break in email postings and never expires enabling them to send each other blog URLs.

Digital video cameras to record blogs which are posted on the school intranet for the teacher to review.

More information?

Kedron State High School: *www.kedronshs.eq.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Queensland Department of Education and Training: *http://education.qld.gov.au/smartclassrooms/*

Queensland Government

Differentiated learning

Year 6 students have enquiring minds but often have differing competencies. Judy Hinton's students at Frenchville State School, Queensland make the most of their laptops and a range of technologies to enjoy a personalised learning experience.

In Judy Hinton's class, technology is pervasive throughout all aspects of teaching and learning and every unit of work has an ICT component that is assessed and moderated. Already, the data is showing improved writing outcomes, higher student completion rates for assessment, reduced time-out offences and that students are more motivated to engage in online learning at home using their laptops.

A typical day in Judy's class starts with Mental Maths *(http://teachingtreasures.com.au/teaching-tools/mental-mathematics/Main-Mental-Math.htm)* on the Interactive Whiteboard complemented with an explicit maths lesson.

Judy uses a blended approach to enable differentiated learning in her class. She combines whole class explicit teaching with individual and small group support through online tasks set in Smart Kiddies Mathematics *(www.smartkiddies.com.au)*, Rainforest Maths *(www.rainforestmaths.com)* or Tutpup *(www.tutpup.com.au/)*. Or they may work on their iMaths investigations *(www.fireflypress.com.au/primary-school/maths/imaths/)*.

During the middle teaching session of the day, Judy focuses on English language and literacy, rotating four groups of students through activities according to their reading ages.

Learning using comprehension cards and the spelling rules textbook is complemented with differentiated digital activities on the laptops. For example, Spelling City *(www.spellingcity.com/)*, Web Quests *(www.webquestdirect.com.au)*, Words Rock and learning objects from the Learning Place to suit the unit of work being taught.

Judy teaches grammar and punctuation using her Interactive Whiteboard. Students are supported with differentiated writing activities including developing their own persuasive texts for example, for "Rocky Rocks!" (the school is located in Rockhampton) recording their opinions using the Web cam on their laptop to contribute to a local government initiative. One student discovered how to use Audacity® to convert that file to an MP3 file so that students could listen to it on MP3 players.

Differentiation across the curriculum

To improve differentiation across the curriculum, students participate in online typing games such as Typing Tournament a medieval quest that jousts students through various typing skills. These typing games not only improve a student's dexterity, but improve accuracy and spelling.

A recent unit on energy forces involved asking the students to build an invention that demonstrated their understanding of energy forces. This was presented as an oral speech, complemented with the use of Microsoft® Office PowerPoint®, Microsoft® Photo story or ActivInspire software for the Interactive Whiteboard. Their inventions included a hydro water wheel and a magnetic ballerina.

A unit on Space involved the students using Microsoft® Publisher to make a space Web page as part of a space encyclopedia for children. This engaged their critical thinking skills. For a unit on natural disasters students created an animation of a disaster that demonstrated their

"Digital technologies can help you deliver engaging curriculum and differentiated learning for your students."

Judy Hinton, Year 6 teacher
Frenchville State School, Queensland

understanding of the impact.

It took a few strategies to get homework management working with the laptops. Emailing assignments to the students with images created files that were too large and slow. Finally Judy discovered ActivInspire software which allows her to save their homework as flip charts onto a common drive that students can access across the school network and copy the homework onto their laptop. Now homework is 100% completed. Anywhere, anytime learning is just fantastic!

Success factors

Using laptops empowers, extends and engages students. They can encourage students to participate in authentic learning and develop as competent digital citizens. They can reinforce or extend their learning and continue to work seamlessly at home, even in lunchbreaks – which many do.

Laptops foster independence because students use them to research proactively for answers and then share their learnings/discoveries.

For example they have taken the initiative to email the mayor and councillors regarding waste management in Rockhampton.

They learn to manage their own learning – for example using Smart Kiddies tests and tasks or NAPLAN *(http://naplan.edu.au)* to revise and test themselves.

Laptops allow for differentiation where students can learn at their own pace and present their work as a blog, a written report, a video or an audio file to suit their learning style. With the curriculum delivered in highly flexible ways, this broadens the range of learning experiences offered.

Top tips

- Just get started! It's not about the laptops and the technology it's about using it to facilitate learning.

- Make sure every student has access to a laptop. Don't use them as a reward or for Gifted and Talented extension only.

- Ask students and parents to do an induction course that covers the care and responsibility of a laptop.

Pedagogy

Judy favours a combination of lecture style/group for explicit teaching with small group work and individual activities for reflection, modelling, scaffolding and tutorials by the teacher and students.

Learning spaces

Judy's classroom supports a 1-to-1 laptop learning program using laptops with the Windows® operating system together with extra data points, wireless access and an Interactive Whiteboard. The desks are set up to replicate the shape of a worm to create a dynamic environment for learning.

Tools for learning

English Banana.com *(www.englishbanana.com)* – games, worksheets and quizzes for teachers to use.

Firefly Press – iMaths *(www.fireflypress.com.au/primary-school/maths/imaths/)* – exploring numeracy through maths investigations, ideal for students.

Learning Objects from the Learning Place – for revision and synthesis.

Raz-Kids *(www.raz-kids.com)* useful subscription-based Canadian site for reading, science and tutoring.

Smart Kiddies *(www.smartkiddies.com.au/)* – good for teaching maths.

Sparkle Box *(www.sparklebox.co.uk)* – posters, signs, labels, literacy, numeracy resources and more for teachers.

Spelling City *(www.spellingcity.com)* – a US site where you can add your own lists and make them into games.

Teach This *(www.teachthis.com.au/)* – printable teacher resources, games and activities.

Teachers tv *(www.teachers.tv)* – great story starters from the UK, good for writing in different styles.

TEAMS Educational Resources (*http://teams.lacoe.edu/)* – useful interactive science lessons.

Tutpup *(www.tutpup.com.au)* – ideal for students to practise maths alone and against others.

Web Quests *(www.webquestdirect.com.au)* – a subscription-based site that is teacher-designed.

More information?

Frenchville State School: *www.frenchviss.eq.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Queensland Department of Education and Training: *http://education.qld.gov.au/smartclassrooms/*

Queensland Government

Unlocking a rainforest

Studying Karawatha forest, a rainforest on the outskirts of Brisbane, Queensland, has become a collaborative learning experience for Jindalee State School teacher Michael Allardice and his Year 6 students, who used their laptops to create vibrant multimedia stories.

Located near Jindalee State School, Karawatha forest is one of the largest remnant rainforests in the Brisbane city area. Its variety of rocky outcrops, caves, tall timber and fertile lagoons have made it a popular place for people to visit and an ideal place to study an ecological environment.

Students started the unit by listening to a Podcast about Karawatha forest on either an MP3 player or their laptops. The podcast provided an overview of the history of the forest, including early human habitation and a geological look at its flora, fauna and minerals. Students were then given the opportunity to research the forest further using the Web.

With this knowledge, Michael and the students, headed out to explore the rainforest armed with digital cameras and laptops so that they could capture images and data.

Student engagement

When they returned to the classroom, the students used Microsoft® Photo Story and Audacity® to create their own multimedia stories on the rainforest using their photos, as well as music and voice-over with special effects, titles and captions.

Michael encouraged the students to discover how to use Photo Story for themselves sharing their learning and successes with each other. Each time a student found a shortcut to a tool then they quickly explained it to the rest of the class. In many cases students shared their photos with the class, collaborating to create photo mosaics.

The students' Photo Story projects demonstrated that they had a deeper understanding of the rainforest. As they had explored the forest and captured the images and data themselves, they were more discerning about their stories and what information they wanted to illustrate.

Success factors

Students were empowered by their digital cameras and laptops to work independently and create their own work.

Taking their own photos also gave the students a sense of ownership and pride, which is not apparent when they use photos they have gathered from online image collections.

The students are also more productive in class and at home when they have access to their own laptop, rather than sharing with others.

The laptops encouraged students to share their work. During class, as students were developing their Photo Story projects, Michael could show an individual student's work to the whole class as an exemplar, which proved an effective method of modelling for other students.

Students also shared their work on school assembly. Not only was this a fantastic opportunity for the students to celebrate success, but it was also good promotion for the use of laptops in class. For example, during parent or official visits to Jindalee State School, these projects can be used to showcase how successful the use of laptops are for learning.

"I have been teaching for 15 years and I feel that the laptop program has made me more invigorated, re-energised and enthusiastic about teaching and learning."

Michael Allardice, Year 6 teacher,
Jindalee State School, Queensland

Potential improvements

Michael believes that if the students created more detailed storyboards next time, they would then be able to construct more fluent storylines. This essential planning step would also help them organise their story, position images and information so that it flows, leading to an even higher quality result.

Michael is also putting together a series of exemplars from previous years to show future students the type of work they will be able to achieve using the digital cameras and Microsoft® Photo Story.

Top tips

• Create an online space like the Learning Place's Virtual Classroom to store your projects as well as resources.

• Make it a homework task for students to charge their laptops for class the next day.

• Use a Virtual Classroom to individualise student learning by providing opportunities for extension activities and support activities.

• Use a Virtual Classroom for collaboration through wikis and blogs, as well as anytime, anywhere responses to homework enquiries. You can also use discussion board forums for reminders and reflection.

• Encourage parents to access information about their child's education by visiting the Virtual Classroom with their child. This gives children an opportunity to share and discuss what they are learning at school. The Virtual Classroom is a safe, password protected environment.

Pedagogy

Michael believes that with peer tutoring, students learn to work collaboratively as well as independently. They learn to share resources such as digital images which they save into the common drive on the school network. Michael also provided opportunities for the students to use digital resources, technologies and online environments to enhance their learning about the rainforest.

Learning spaces

The desks are 'byte desks' that can be easily arranged to suit different purposes from small groups, theatre style and whole group configurations. Students don't have a 'home desk' as they are always being shifted and moved to suit different purposes. Students have a 'home chair'.

Michael's classroom also has a cushioned area which students can use for listening to media or podcasts or reflection.

Extra power outlets were installed in one section of the room so students could charge their laptops during lunch if necessary.

Tools for learning

For this particular unit, Michael used the student laptops, a projector and **Microsoft Photo Story** *(www.microsoft.com/windowsxp/using/digitalphotography/photostory/default.mspx)*.

Michael also uses:

Virtual Classroom to access unit resources and collect student work so that he can verify their understanding and use information to plan lessons.

Irfanview *(www.irfanview.com/)* a very small, compact graphic viewer available online.

Audacity® *(http://audacity.sourceforge.net/)* a superb resource for recording and editing sound. You can record live audio and edit Ogg Vorbis, MP3, WAV and AIFF sound files.

Big Huge Labs *(http://bighugelabs.com/)* allows you to manipulate your digital images. Has a range of applications including mosaic maker, posters and jigsaw puzzles.

More information?

Jindalee State School: *http://jindaleess.eq.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Queensland Department of Education and Training: *http://education.qld.gov.au/smartclassrooms/*

Queensland Government

Jindalee

Volume and 3D shapes

Ashley Proud's Year 7 students enjoy learning mathematical concepts on their laptops. In a recent class, they used digital resources to understand volume and 3D shapes and then presented their understanding both as a class presentation and on their blogs.

Before commencing his lesson on volume and 3D shapes with his Year 7 maths class, Ashley created a Virtual Classroom and added learning objects which he thought the students would find useful to their understanding of the topic. By making them available online, students could access them during class or from home later with an Internet connection, if they wished.

Ashley started the lesson by explaining to his students what they would be doing as well as the basic concepts he wanted them to understand. Students could take their own learning paths through an enquiry process, but at the end they would have to present to the class what they had learned about volume.

The students broke into three groups to complete different tasks. One group worked with Ashley in a hands-on activity looking at 3D shapes and volume. A second critically selected and used learning objects from the Virtual Classroom to further their understanding, and a third group completed an online worksheet.

Each student managed their own learning experiences, seeking and receiving help from each other as well as from Ashley, as and when they needed it.

Once the students had rotated through all of the activities, the class reassembled to discuss how they would present their understanding of the topic.

Students were free to choose their mode of presentation, with students creating blogs, Microsoft® PowerPoint®, Scratch animations, podcasts and delivering oral presentations to peers using the Interactive Whiteboard.

This approach encouraged them to use higher order thinking skills – evaluating and synthesising the knowledge they had gained and creating an artefact to share that knowledge with the rest of the class. This meant that prior to creating, they had to remember, understand, apply, analyse and evaluate knowledge.

At the end of the lesson Ashley provided an opportunity for students to reflect on their learning in their blogs about volume and 3D shapes; how they might have better represented their knowledge and how they could gain a deeper understanding of the concept. Students also commented on each others' blog entries with advice or ideas. This was an excellent method of inviting students to collaborate for a shared goal of learning and to communicate and provide immediate feedback. Ashley was also able to read the blog entries to gauge students understanding of the topic.

One place for everything

Ashley found that using the Learning Place supports most technology for his class – Virtual Classroom (using Blackboard), Learning Objects, blogs, wikis, discussion board and group emails. This makes it easy for students to locate resources and it's much more efficient.

Success factors

By integrating technology into every aspect of teaching and learning Ashley's students are more engaged and more motivated to learn. It has also made it easier for them to manage their own learning. For example, at the beginning of the week, students use their individual timetable (a chart mapped for the week) to organise what activities (rotations for literacy and numeracy) they need to complete by the end of the week. This is significant because the students are now active participants in the learning process, not just recipients of information as can be the case with some traditional teaching methods.

"It was really powerful to see the students managing their own learning and negotiating their tasks."

*Ashley Proud, Year 7 teacher,
McDowall State School, Queensland*

Potential improvements

Ashley would like to extend his use of technology to include Web conferencing. He'd like to invite 'experts' to visit the classroom virtually.

He would also like to make use of other functions in the Blackboard Virtual Classroom such as the gradebook and assessment tools.

He is also looking into the use of a software such as AB Tutor to share student work and invite collaboration.

Top tips

• It can initially be difficult for the teacher to give away control but it is valuable and rewarding.

• Negotiated tasks work well especially for students in the lower (abilities) band. This solidifies their understanding and ability to think at a deeper level. Contemporary teaching methods are more successful in these instances, as students are being challenged to learn different skills. For example, one student demonstrates his understanding using an animation program.

Pedagogy

Ashley incorporates a range of learning strategies to cater to students' individual and diverse learning needs. Some of these include: whole group work, individual, peer-tutoring and using class experts (in software, connectivity to the Internet, concept e.g mathematical). The class experts create audio or video podcasts that can be shared with other students. Some students have even uploaded the MP3 files onto their MP3 player to listen to at home for revision.

Learning spaces

Ashley's class has big workbenches in the middle of the room. There are also exercise balls, beanbags, pillows, couches that can all be easily moved and several choices of work spaces suited to different needs and group sizes. The space is flexible and some sections can be rearranged and repurposed. The class has cables and ports, but no wireless access, which Ashley would like to have.

Tools for learning

Ashley uses:

Virtual Classroom to access unit resources and collect student work so that he can verify their understanding.

Learning Objects from the Learning Place are used extensively for literacy, numeracy and other topics.

Blogs to help students keep a journal of learning.

Wordle *(www.wordle.net)* an online resource for generating world cloud from text.

Prezi *(http://prezi.com)* create interactive presentations and then publish them online.

Scratch *(http://scratch.mit.edu)* create interactive stories, animations, games, music and art, and share them on the Web.

Spelling City *(www.spellingcity.com)* – a US site where you can add your own lists and make them into games.

Microsoft® Expression® Encoder *(www.microsoft.com/ expression/products/Encoder4_Overview.aspx)* is used to create podcasts during the class. These are used for revision, reinforcement and for absent students. Students also record podcasts for presentations or revision.

More information?

McDowall State School: *http://mcdowallss.eq.edu.au/*

Microsoft Education Australia:
www.microsoft.com/australia/education/

Queensland Department of Education and Training:
http://education.qld.gov.au/smartclassrooms/

Queensland Government

Analysing current affairs

Watching TV on their laptops during class is helping Year 10 students at Varsity College in Queensland, develop crucial analytical and interpreting skills needed for english language and texts.

Earlier this year, Year 10 English teacher Lisa Newland, started recording current affairs programs and converting them to '.wmv' files so that her Year 10 students could analyse mass media as part of the english curriculum.

Lisa uploaded the wmv files and other class resources onto USB sticks, which were then transferred to the students' laptops.

As part of the initial lesson, Lisa modelled an example of how to analyse current affairs programs and then tasked the students with analysing a current affair show of their choice. She encouraged the students to work independently to develop their critical analysis skills – a central part of the curriculum.

Students then created presentations on the current affair show they had watched using Windows Live® Movie Maker, Microsoft® Office PowerPoint® and Audacity®.

To storyboard their ideas, the students used XMind – an online brainstorming tool – and they also embedded PowerPoint presentations, voice over and music. Lisa was delighted to find that students' presentations were of higher quality and professionalism than she had seen in previous years. Lisa felt this was due to 1-to-1 access to laptops and software, enabling a more authentic experience.

The students were also required to use the presentation for an oral speech. They were able to practise their speaking skills by recording audio of themselves speaking, or using a Flip camera to film themselves, which they could then download to their computer and analyse. This was useful for critically evaluating their intonation, pace and other speech characteristics. It was also a great opportunity for students to exercise their reflection skills and critical thinking skills. Lisa stated that this process added a new dimension to their speeches and improved aspects such as eye contact.

Student engagement

Using the laptops, the students' visual language and digital literacies improved significantly. By creating this type of media presentation, students could quickly and critically analyse their own work and provide feedback for their peers.

The most significant observation Lisa made was that "lower achieving students wrote so much more than they previously had, they were more confident, and they didn't feel quite so isolated, due to not understanding the task. The students felt much more connected to the learning than they were before."

In fact, there was a 100 percent completion rate with a continued record of legible work to follow the students' process of development.

Success factors

Laptops enabled students to construct deep knowledge and understanding of the concepts. They also helped students develop higher order thinking skills through dynamic delivery and pedagogy. Lisa believes that the level of engagement was higher due to the accessibility of the laptops, which in turn meant that the quality of the students' presentations was higher. Some other success factors Lisa noted include:

• The students were more independent and managed their learning more effectively.

• Lower achieving students all produced the assessment and were more engaged, writing much more than they had previously (without access to laptops).

• Students improved visual literacy skills.

• Students managed their own learning, which was student- not teacher-led. They helped each other to understand concepts and critiqued each other's work.

"The access to the laptops won't make learning worse so use them to your advantage. Use technology for the positive aspects it offers."

Lisa Newland, English teacher,
Varsity College, Queensland

Potential improvements

Lisa has already had several ideas on improving this unit. Firstly, she would like students to post and evaluate their presentations on a group blog, so there is a record and opportunity for peer reflection and feedback.

Secondly, Lisa wants to garner greater collaboration with 'the outside world' to make learning connected.

And finally, Lisa would like to develop more collaborative and group learning experiences that encourage students to extend and refine their digital literacies.

Top tips

- Lisa says its important to retain a positive attitude at all times. "There are always going to be issues," she says, "so work out strategies early, develop some protocols and work collaboratively with other teachers in your faculty."

- Pre-empt technical issues. For example, ask yourself: "How are students going to print and how much are they allowed to do?" This will never be a last minute problem if you get your planning and strategies right, from the beginning. By doing this, you will help your students get organised and set up.

- Set up folders so that students can save their work systematically.

- Encourage students and teachers to share. Give teachers time to prepare quality learning experiences, plan collaboratively and contribute regularly. Team up with a mentor.

- And most of all, don't be afraid!

Pedagogy

A range of learning strategies were incorporated to support the learning needs of students and the requirements of lessons. Some of these included:

Whole class lecture style teaching, modelling by teacher and students, and the use of group work to share information and to collaborate effectively. Microsoft® OneNote® supported the facilitation of group work, making it easy to take and share notes, either in their virtual classroom or via USB sticks. Students also worked independently to develop critical thinking and reflective skills.

Learning spaces

Lisa's classrooms have a traditional setup and furniture with a data projector. The students and teachers are in a different classroom for every lesson so each classroom has a different layout and is arranged differently. This meant that there were limitations to what could be done with the physical environment.

Tools for learning

For this particular unit, Lisa used the student laptops, a projector and an Interactive Whiteboard. Lisa also uses:

Microsoft OneNote *(http://office.microsoft.com/en-au/onenote/)* A convenient digital notebook which helps enable students to research and collate notes and share them easily online. They can add images, audio, video, and Web links in one location on their PCs, notebooks, and tablets.

Virtual Classroom to access unit resources and collect student work so that she can verify their understanding and use information to plan lessons.

Wikis and blogs to help students keep glossaries and discuss ideas.

Taking IT Global *(www.tigweb.org/)* is a social network hub that connects today's students to global issues.

XMind *(www.xmind.net/)* a great brainstorming and mind mapping software and the best way to share your ideas.

Flip Cameras *(www.theflip.com/en-au)* to record science experiments, tutorials and classes posted on the school intranet for revision, and for students who were absent from the class.

AB Tutor Control *(www.abconsulting.com/html/Tutor_Control.html)* is a remote control application that enables teachers to control their students' PCs from their computer.

More information?

Varsity College: *www.varsitycollege.eq.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Queensland Department of Education and Training: *http://education.qld.gov.au/smartclassrooms/*

Queensland Government

VARSITY City

Literacy rules

Arlene Smethurst at Ferny Grove State School used a number of online resources to improve literacy and higher order thinking skills with her Year 7 students.

Arlene has a diverse group of students, from gifted and talented to students with Autism Spectrum Disorder (ASD). To involve all her students in learning, especially those who were typically disengaged, Arlene structured her lessons to enable students to manage their own learning.

To do this she introduced activities that would take advantage of the students' laptops and the classroom's Interactive Whiteboard. Arlene started the lesson by demonstrating how to create a wiki.

Seeing how easy it was to create this kind of interconnected Web site, where they could add images, stories, information and thoughts on the projects they were working on in class, the students quickly began creating their own.

To further develop literacy skills, Arlene introduced them to online resources and Web sites such as FunBrain, BBC Grammar Skills and Voki which enabled the students to learn individually and at their own pace.

Student engagement

Once Arlene had introduced the online resources and explained how they worked, the students quickly latched on to working with each other to collaborate on projects.

They created a wiki to publish their notes and findings, as well as to communicate with each other. For example, the students used the wiki to report what they had completed and what work needed to be done. They used mind mapping software to take notes on different topics and create workflows. They also used Audacity® to record audio notes.

Success factors

Arlene saw the following factors as instrumental to the success of her approach. Low achieving students were engaged and became 'experts' sharing skills with their peers.

All of the students responded very well to resources such as Voki because it was a fun way to create word definitions that were spoken out loud by the avatar. To get the avatar to say a correct definition meant the students had to insert the correct text to begin with. Once they had done this, Arlene got them to publish their definitions on the class wiki.

Because their word definitions were being shown publicly, the students had a real reason to get it right – they wanted to add value to the class wiki.

The wiki provided an easily accessible forum where students could present and debate how to make good notes. Low achieving students observed how stronger students took good notes and how they picked up on errors.

Students managed their own learning. They also helped each other to understand literacy, norms of behaviour and ways of working.

Potential improvements

In the future, Arlene would like to focus on encouraging students to use blogs to post their work and setting up a monthly technology session so that students can learn extended features. Arlene hopes to immerse digital tools into all aspects of learning so that it becomes more connected to the outside world, relevant and transformational for students.

"What most amazed me was the amount of collaboration and switching in and out of 'expert' roles."

Arlene Smethurst, Year 7 teacher,
Ferny Grove State School, Queensland

Top tips

- Arlene believes it's important to check for understanding and develop processes for giving and receiving feedback. The use of AB Tutor *(www.abconsulting.com/html/Tutor_Control.html)* enabled Arlene's students to 'share' their laptop and demonstrate their understanding.

- Be flexible! If students were not engaged then Arlene would ask them: 'How do you think you could develop your understanding for this topic?' This way, Arlene encouraged her students to take charge of their own learning.

- Development of a 'sharing model'. Arlene has encouraged the sharing of work amongst the students. She gets them to complete different tasks, so there's a sharing of skills, for example, if a student is an expert with particular application, they act as the teacher.

- Having strong sharing skills also meant the students were more confident in risk-taking. For example, if they had to try using new software, they'd work in groups, share work and manage their own learning.

- Arlene says it's important that teachers are prepared to 'let go' and realise they don't need to be the expert in everything.

Pedagogy

Arlene believes that by empowering students to take charge of their own learning and not acting as the expert, students were far more engaged and interested in the learning process. This in turn encouraged peer-to-peer tutoring, as well as good learning techniques and behaviour.

Learning spaces

Arlene was able to do everything with the original desks and chairs of her classroom. Desks were arranged in groups for most activities, but were moved around as needed.

The students' 'tidy trays' were stored in a separate area and accessed throughout the day. Beanbags and pillows were purchased for quiet, reflective, collaborative spaces.

Tools for learning

For this particular unit, Arlene used the student laptops and an Interactive Whiteboard.

She also uses:

Virtual Classroom to access unit resources and collect student work so that she can verify their understanding and use information to plan lessons.

AB Tutor Control *(www.abconsulting.com/html/Tutor_Control.html)* is a remote control application that enables teachers to control their students' PCs from their computer.

BBC Grammar Skills *(www.bbc.co.uk/skillswise/words/grammar/)* a great site with games, quizzes and fact sheets that explore the use of grammar.

Audacity® *(http://audacity.sourceforge.net/)* a superb resource for recording and editing sound. You can record live audio and edit Ogg Vorbis, MP3, WAV and AIFF sound files.

Funbrain *(www.funbrain.com/)* this site contains online fun educational games, teachers resources and parenting advice.

Voki *(www.voki.com/)* this is a service that allows students to create personalised speaking avatars and use them on their blogs, profiles and in email messages.

More information?

Ferny Grove State School: *www.ferngrovss.eq.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Queensland Department of Education and Training: *http://education.qld.gov.au/smartclassrooms/*

Queensland Government

Backchanneling

Steve Lang at Kedron State High School, Queensland, used Backchanneling software when students were engaging in video stimulus to encourage exploration and communication whilst viewing.

Video can provide students with a clear picture of events when studying Society and Environment, but Steve Lang, a Year 10 teacher a Kedron State High School wanted to add more depth.

So as he played the video he set up a live chat session using the Learning Place, which enabled students to comment, ask questions, inquire and discuss, all without breaking the flow of the video – in other words, backchanneling.

During the video, Steve encouraged the students to ask each other questions about what was happening in the program, help each other understand topics or themes they may not have understood, and to answer prepared questions that Steve had posted.

Student engagement

The students were engaged throughout the entire video. They were collaborating in real time with one another in a mode that did not overtly interrupt any other student (or the teacher).

Because each student was sitting at their individual laptop, they could think about the content of the video and ask just in time questions. Steve believes that this technique of learning "levels the playing field" for all of the students in his class regardless of ability.

Steve was able to produce a 'transcript' that accurately showed what each student was thinking during the experience.

Success factors

Steve uses digital technologies alongside traditional practice to support students learning needs.

This technique got the whole class involved in the topic – whether they were working individually or collaboratively. The plan was to get students comfortable working in any situation.

While this led to a whole class discussion, it occurred in a completely new format. The collaborating and communicating was online through the chat session.

Potential improvements

Steve emphasises that it is important to explore the different technologies available but it is also very important to consolidate understanding of knowledge. "It's not always about the new technologies. It's about the learning," he says.

Always reflect on your lessons and as yourself "How can I improve it?" However, make sure you don't overanalyse everything. Seek to improve key aspects and focus on the core concept.

Top tips

- Don't try to do too much too soon. If you take small steps, success is more likely.

- Don't be afraid to give over some control. The teacher is not the expert in everything and it's important that the teacher empowers students to have the opportunity to take on the role of the leader, expert, teacher and advisor. This also helps develop, refine and extend students' digital literacies and fosters independence in their learning.

- The students enjoy being experimental learners – they want the opportunity to engage in the learning process and 'figure it out for themselves.'

"Laptops are not the important part – it's the access to the laptop that is important and the nature of learning that occurs."

Steve Lang, teacher,
Kedron State High School, Queensland

- Revisit the class norms regularly. Ask students, "How should it work in our classroom?" This also fosters a productive relationship with the students about what works best in the classroom. It's a team effort.

- Involve yourself in discussions with other staff. Get involved in forums and discussion lists. Use the professional development you have experienced – collaborate and learn.

- Working digitally is a holistic approach. It's about encouraging the whole school to transform. Work with the staff to make this transformation seamless and stress-free. Provide opportunities for everyone to learn, even the non-teaching staff. It's about changing people's mindset. For example use a self-review framework that focuses on school leadership, resources, curriculum, impact on pupil outcomes and professional development.

- Take away obstacles as much as possible. For example, make digital resources such as Learning Objects available on the school server so staff can quickly and easily access them without connecting outside the school intranet.

- Provide professional development on student free days to share ICT ideas. Steve's advice is: don't assume that everyone knows everything.

Pedagogy

Steve believes both traditional and digital pedagogies have value. It is important that teachers provide opportunities for students to purposefully use online environments, digital resources and technologies to enhance the learning of concepts and processes. The main objective should be on creating positive learning experiences that are challenging.

Learning spaces

Steve's classroom consists of 20 floor cushions, byte desks that can be easily moved and reconfigured to suit different purposes and brightly coloured comfortable carpet (students can sit on the carpet). The whole room can be easily changed into different configurations and students have the opportunity to move to a space where they feel comfortable learning.

Tools for learning

For this particular unit, Steve used the student laptops and a data projector.

He also uses:

Virtual Classroom to access unit resources and collect student work so that he can verify their understanding and use information to plan lessons.

Learning Objects from the Learning Place for revision and synthesis as well as encouraging students to critically review learning objects using student-determined criteria to develop critical analysis skills.

Wallwisher *(www.wallwisher.com)* a complimentary online noticeboard tool where students can post announcements and keep notes.

Wolfram *(www.wolframalpha.com/)* – a great complimentary tool that make all systematic knowledge immediately computable and accessible to everyone.

BB Flashback Express *(http://www.bbsoftware.co.uk/BBFlashBack_FreePlayer.aspx)* BB FlashBack Express is a complimentary screen recorder that captures your screen, audio and Web cam.

More information?
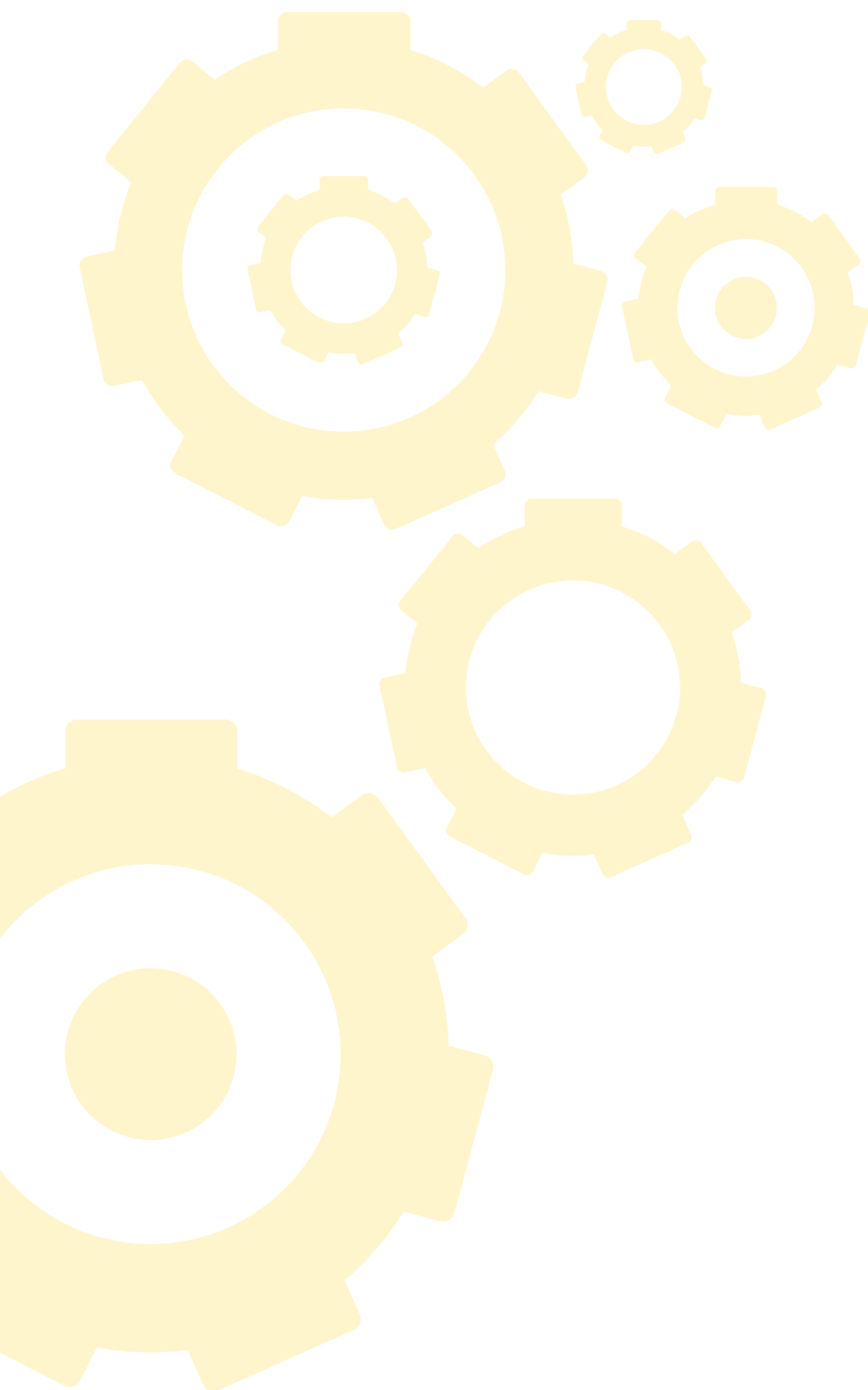
Kedron State High School: *www.kedronshs.eq.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Queensland Department of Education and Training: *http://education.qld.gov.au/smartclassrooms/*

Queensland Government

Case studies – Victoria

- Lara Secondary College
- Balwyn High School
- Belmont High School
- Glen Waverly Secondary College
- Geelong High School
- St Helena Secondary College

Reviewing 1-to-1 learning

Kelly Butler at Lara Secondary College, Victoria, wanted to ensure the teachers in her school were making the best use of the many new technologies entering the college, particularly netbooks for 1-to-1 learning.

Kelly's first step was to meet with teachers to discuss the school's existing hardware, software and infrastructure, and understand the relevance of each to teaching and learning across all disciplines.

The staff meeting began with a general discussion about the unique learning strategies technology was providing their students.

Kelly prompted the discussion by entering an academic article into Wordle, an online "text cloud" generator which display words by size according to their frequency of use.

With the article's key words brightly and boldly displayed across an interactive whiteboard for everyone to see, the teachers were better able to focus on the important themes and engage in useful debate, while using technology.

The Wordle cloud highlighted words such as 'flexible', 'collaborative' and 'interactive', underlining the article's argument for taking risks in educational ICT. The teachers studied these words in the context of adopting a more broad ICT strategy in high schools, and discussed whether or not they were taking enough risks in their own strategy at Lara College.

Using the interactive whiteboard, the teachers then brainstormed ideas, paired off to discuss topics in more detail and developed a log of netbook use throughout the school. Most took notes on laptops during the session, and shared resources with each other online.
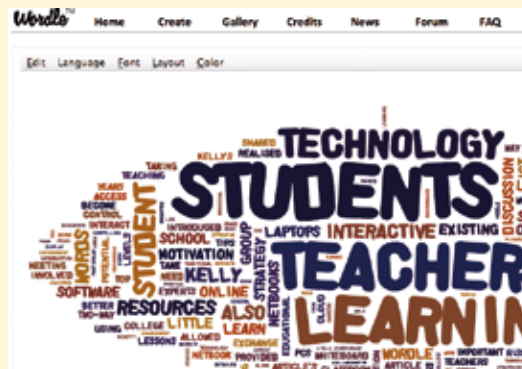
Understanding needs

Kelly quickly realised two important questions needed to be answered for her to better assess the school's existing ICT; firstly, how were the teachers at Lara using its physical space to effectively support student learning? And, how was technology being incorporated into the learning experience?

The school's existing classroom configuration featured traditional desks and chairs but an open learning environment had been introduced for students at all levels, which included stand alone PCs, laptops, trolleys and interactive whiteboards.

Inquiry-based learning had also been provided for years seven and eight, with each student equipped with an individual netbook. Kelly wanted to know if this strategy was improving student learning. She turned to the group for more specific feedback.

> "Netbooks provide our students with the motivation to become more involved in lessons and to interact with each other."
>
> *Kelly Butler, ICT co-ordinator,*
> *Lara Secondary College, Victoria*

An example of Wordle text cloud created using the complimentary tool at: **www.wordle.net/**

A student working on her netbook.

Using technology to motivate

The teachers had seen encouraging results from their students as more technology was introduced to the school. In particular, they were pleased about the introduction of netbooks in the middle years, having witnessed a dramatic improvement in the quality of work amongst those students. They also said that the netbooks motivated students to become more involved with lessons and interact with each other. They ultimately gave them ownership and control of their own learning.

The group also noted the two-way learning exchange technology had created, which also allowed teachers to learn from their students.

Unleashing student potential

Kelly's meeting with the teachers confirmed that student engagement levels were higher using technology. She also concluded that teachers don't need to be technology experts for educational software to be effective because students can learn to use it with little guidance and uncover its potential for themselves. In fact, she realised that if she encouraged teachers to step back a little, it would allow students to take more ownership and control of their learning.

Top tips

• Netbooks provide students with the motivation to become more involved with lessons and interact with each other.

• Technology helps create a two-way learning exchange between teachers and students.

• Teachers don't need to be technology experts because students can learn and benefit from it with little guidance.

Pedagogy

Kelly found that student engagement levels were higher when teachers used technology in the classroom. She concluded that teachers don't need to be software experts because students can easily adapt to use new technology and uncover its potential without assistance. Kelly suggests that teachers step back a little to allow students to take more ownership and control of their learning.

Learning spaces

The school's existing classroom configuration features traditional desks and chairs but includes interactive whiteboards, PCs and laptops. Students are encouraged to collaborate using the electronic whiteboard during lessons, and share ideas and resources from their personal laptops.

An open learning environment was introduced for all students by providing them stand alone PCs, laptops, trolleys and interactive whiteboards. Inquiry based learning was also introduced for years seven and eight, in which the children used netbooks.

Teachers said the individual netbooks provide students with the motivation to interact with the lesson and give them ownership and control of their own learning. The new learning technologies also allow teachers and students to better collaborate, providing a two-way learning experience not previously possible.

Tools for learning

Wordle *(www.wordle.net/)* – an online word cloud generator.

More information?

Lara Secondary College: *www.larasc.vic.edu.au/*

Microsoft Education Australia:
www.microsoft.com/australia/education/

Victorian Department of Education and Early Childhood Development
http://www.education.vic.gov.au/

Improving collaboration

Jonathan Heard, Year 9 teacher at Balwyn High School, Victoria, realised that students would benefit from a more collaborative and technology-based learning environment, after being inspired by a presentation from visiting Israeli educators.

The Israeli presentation, entitled 'Communities of Thinking', explained how to create an environment that assists year 9 students with learning, collaboration and developing their sense of school community.

The research delivered in the presentation, together with funding from the Victorian Government and data from a student needs survey conducted in the school, formed the impetus for Jonathan and the middle years team at Balwyn High School to develop a new collaborative technology program called Xplore specifically for Balwyn's year 9 students.

The aim of the program was to create a workspace that allowed students to better engage with lessons using collaborative and interactive technology such as video, audio and Internet. The Xplore program would also enhance the current school curriculum by focusing on pertinent social, global and sustainability issues.

The team simplified their new program by dividing its implementation into three basic steps: engagement, research and communication.

Student engagement

The first step was to focus on activities that could be teacher facilitated, such as videos, which stimulate student thinking and discussion. For example, using TED Talks or Gapminder, two Web sites featuring inspirational videos, Jonathan and the other teachers could present videos on significant global issues. They could then encourage small group discussion using a graphic organiser to illustrate student feedback and ideas.

Asking the right questions

The second phase provided students with a pathway of inquiry by offering them a challenging question to tackle. The "pathway" framework teaches students to break down a large question into smaller, more manageable components. First, students are taught to do preliminary research to answer the basic background of the topic. They then work on forming their own opinions about the broader question by concentrating on several sub-questions. And finally, they combine this information and their ideas in order to answer the larger question as a whole.
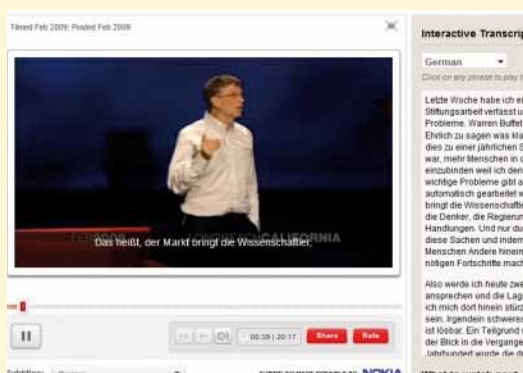
Communication that's fun

The final stage of the program involved showing students how to present their research findings. The goal was to offer them the flexibility and creativity to work with communication tools they feel comfortable with. For example, while some students would typically use Microsoft® Office PowerPoint® or Microsoft® Photo Story, others would prefer to use Windows Live® Movie Maker.

"Our students are engaged by greater collaboration with their peers, self-directed learning and the freedom to focus their studies in areas they're interested in."

Jonathan Heard, Year 9 teacher,
Balwyn High School, Victoria

An example of a Gapminder presentation.

TED Talks gives students free access to great speeches.

Learning strategies

Jonathan's goal was to create a workspace that allow students to better engage with lessons using a collaborative and interactive technology such as video, audio and Internet.

He also wanted to use the program to enhance the curriculum by focusing on pertinent social, global and sustainability issues. As he developed a strategy, Jonathan discovered that the main concerns for implementing the program were how to best use the physical space and how to incorporate technology into this space.

Success factors

The Xplore program has proven effective because it's so closely based on the successful approach to learning explained in the Communities of Thinking research from Israel. Balwyn's students have become more engaged through self-directed learning and by having the freedom to choose what they study and present to their peers.

The ability for students to work in groups and socialise their ideas has also been crucial to the success of the program. Students are engaging with each other, teaming up on projects, sharing their creative ideas and using technology to communicate with one another in new ways.

While student collaboration has been the focus of the program, the new learning space has also helped students develop individually by encouraging them to take control of technological tools and ownership of their own work.

Balwyn's students have become more engaged through self-directed learning, the freedom to choose what they study and which technology to use.

Potential improvements

The program could also engage parents and friends of the school and so this is clearly an area Jonathan and the teachers hope to explore in the future. There is also a need to reduce the number of Year 9 teachers to increase the engagement between teachers and students.

Top Tips

- Improve student development and learning by offering direction and feedback.
- Integrate core subjects such as english or science to formalise the program.
- Measure success by making technology tasks assessable.

Pedagogy

Jonathan simplified the development of Balwyn's new learning program by dividing it into three basic steps: engagement, research and communication. The first step was to focus on activities that could be teacher facilitated, such as video presentations, which stimulate thinking and discussion. The second phase aimed to provide students with a pathway of inquiry by offering them a challenging question to tackle. The final stage of the program involved showing students how to present their research findings.

Learning spaces

The Xplore program is housed in a large open space which can accommodate up to 100 students at a time, ideal for collaborative learning.

The environment would need to comfortably accommodate data projectors, PC workstations and a bank of laptops, video conferencing systems, audio stations with microphones, headsets and speaker and digital cameras.

Tools for learning

By integrating TED Talk or Gapminder video tools, Jonathan and the other teachers present students with video content about significant global issues.

TED Talks *(www.ted.com/talks)* – video Web site housing inspirational and educational speeches.

Gapminder *(www.gapminder.org/)* – videos, flash presentations and PDF charts showing major global development trends.

More information?

Balwyn High School: *www.balwynhs.vic.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Victorian Department of Education and Early Childhood Development *http://www.education.vic.gov.au/*

Tackling school bullying

Nic Masters at Belmont High School, Victoria, wanted to put an end to physical and emotional bullying at the school. He began developing an education program that not only targeted existing bullying but the potential for future incidents.

The goal was to first build resilience amongst individual students so they could better deal with bullies, and to also create a broader strategy for combatting bullying culture.

Nic began the program by working with students to brainstorm ways of confronting bullying. He set up a data projector and used Inspiration® Mind Mapping software to note their ideas and develop a plan.

The students took a proactive approach to the issue by producing personal reflections in various formats. For example, they wrote creative stories about bullying in Microsoft® Office Word, sketched storyboards of bullying scenarios and used digital cameras to reproduce those sketches as photos.

The students then used Plasq Comic Life on their laptops to create short comic book style anti-bullying booklets. Everything they produced was uploaded to class blogs as a reference for others, as well as printed and passed onto the school counsellors as resources for the student well-being centre.

"Point students in the right direction for ideas and inspiration and see what they end up with. You'll be impressed by the results."

*Nic Masters, Year 7 and 8 teacher,
Belmont High School, Victoria*

Some students began turning their sketched-out scenarios into animations using Pivot Stickfigure Animator, with audio voiceovers recorded in Audacity® freeware.

Student engagement

Nic's students were deeply invested in the anti-bullying program because they could clearly relate to the content.

Using different technologies to collaborate and communicate their ideas, they were able to create an effective and very personal anti-bullying campaign. Specifically, they helped each other use software programs such as Comic Life and Audacity to translate personal experiences into well-structured narratives. They studied comic book standards and conventions, paid close attention to story sequencing and ensured their photos delivered the appropriate impact.

Success factors

Nic was impressed by how well his students worked together. He knew that if he asked them to write traditional stories or to simply draw sketches, they would achieve a sound result. But he also knew that by encouraging them to try new technologies, he would help them and the school achieve an even better outcome.

Comic Life allowed the students to be creative but also to think about their anti-bullying message in a concise, easy to follow and professional-looking format. The end result was that their booklets were of a high production quality, which ensured they would be noticed around the school.

An example of a comic being built in Plasq Comic Life.

An example of some preliminary sketches drawn by the students.

By using easily accessible software, students could also work on the project from anywhere and at any time. Some students were inspired to contribute extra work from home, giving additional thought to initial concepts and raising the bar for the entire project.

Nic was pleased with the commitment and creative flair shown by his students. The software made it easy to overcome any storyboard or final layout challenges. The students simply thrived when pointed in the right direction.

Potential improvements

The project was completed by only years 7 and 8, so Nic felt there could have been an opportunity to involve other students and teachers and expand overall involvement in the school.

Top tips

- Inspire students to get out of their comfort zone by giving them ownership of the program.
- Provide students with the technology to help them collaborate, take responsibility for their own work and effectively convey their ideas.
- Achieve high quality production through fun and engaging software like Comic Life and Audacity®.
- Engage other students in the school by showing them the end result.

Pedagogy

Nic worked collaboratively with students to brainstorm ways of combatting bullying. He then used a projector and Mind Mapping software to better organise their ideas.

The students were directed to write creatively about bullying in Microsoft® Office Word, sketch storyboards of bullying scenarios and then use digital cameras to reproduce those sketches in real life. They were then asked to work collaboratively in combining these elements to deliver the final product.

Learning spaces

Belmont's students were encouraged to use whatever school environments supported the images they needed to prepare. The aim was to give them the flexibility to be creative and also take responsibility for guiding their project's content. For example, while some students preferred to work in the classroom or recreate scenes outside in the playground, others chose to take photographs at home and use those images in their comic book.

Tools for learning

Students used different technologies to collaborate and communicate their ideas into an effective anti-bullying campaign.

Pivot Stickfigure Animator *(www.snapfiles.com/publishers/peter-bone)* – complimentary download for making stickfigure animations without any artisty skills.

Plasq Comic Life *(www.plasq.com/comiclife/)* – a downloadable software program for creating comic strips or photo scrapbooks.

Inspiration *(www.inspiration.com/)* – mind mapping software for students and teachers.

Audacity (*www.audacity.sourceforge.net/)* – a superb resource for recording and editing sound. You can record live audio and edit Ogg Vorbis, MP3, WAV and AIFF sound files.

More information?

Belmont High School: *http://www.bhs.vic.edu.au/*

Microsoft Education Australia:
www.microsoft.com/australia/education/

Victorian Department of Education and Early Childhood Development
http://www.education.vic.gov.au/

Blogging gets personal

Darren Lynch at Belmont High School, Victoria, was looking to create an online space for the students in his Personal Development class to share their work with parents and friends. The goal was to create an ongoing conversation about the students' work and the different ways in which they were developing.

Darren realised blogs were the perfect medium for the type of online discussion he wanted to establish. He began by researching various blogging tools that both students and parents could easily adopt and enjoy using.

After trialling a few free blogging products such as Blogger, WordPress and Typepad, he decided that *(www.WordPress.com)* was the best platform for his needs. Darren felt it offered a robust set of writing and design options for blog writers that could easily be accessed and learnt by his students.

Once all blogs were set up using the WordPress blogging platform, it was easy for students to access and update them daily. Both teachers and students started taking notes for the specific purpose of creating blog entries, and reflections about class activities and learning were then added to individual blogs.

Personal reflections about class activities and specific learning that took place were then added to individual blogs. Peer and parent feedback was soon posted into the comments section beneath each student entry.

Student engagement

Darren initially needed to guide students through the blogging process to ensure their entries prompted the desired feedback. It wasn't long though, before students took ownership of the project. They enthusiastically assumed the role of bloggers, approaching it with diligence and pride. Because they received such instant and candid feedback, it gave them a strong sense of satisfaction and engagement, which ultimately helped their class work.

Students enjoyed learning blog writing techniques and how to create different layouts using a range of WordPress functions. These included formatting copy in various fonts and colours, replying to comments, as well as adding images, videos and links to resources.

The blogs have been embraced by both students and parents, providing them with the ideal platform for intimate discussion about school work. Students are now able to create and access a record of their educational journey at any time, while parents have a rare window into their kids' daily class work.

"Blogs allow our students to access a record of their learning journey at any time, and allow their parents to have a window into the school world."

Darren Lynch, health and PE teacher
Belmont High School, Victoria

WordPress is a complimentary blogging tool.
(http://wordpress.com)

Success factors

In the concise blog format, students are able to share their thoughts in an open and comfortable manner. And because parents appreciate the way their kids are honestly discussing their work, they are offering constructive and considerate feedback via the blog comments section.

Potential improvements

The most important thing Darren realised is that blogging provides a communication platform that works across most disciplines. As a result, he decided that the best way to expand his blogging initiative was to introduce it on a wider scale, to more students and parents, and across more subjects.

Darren's Food Technology and Outdoor Education classes soon adopted blogging and discovered similar success. It was clear this was a tool that could be implemented across the school, as long as students could access a laptops or PCs and the Internet.

Top tips

• Teach students how to blog by trialling a few online blogging tools yourself and discovering what might work best for your students.

• Ensure students take useful and logical class notes that they can then transfer to their blog. This will strengthen the quality of each blog post.

• Give the class a sense of responsibility through blogging by emphasising the need to edit and publish thoughtful posts for their parents and peers to read.

• Get buy-in from parents and the community by positioning class blogs as the ideal window into daily lessons and their kids' overall progress.

• Offer students laptops so they can connect to their blog from anywhere in the school at anytime. This encourages them to be proactive with their blog communication and also get more familiar with the technology.

Pedagogy

Darren initially needed to guide students through the blogging process to ensure their entries prompted the desired feedback. Once they understood the blog writing style and how to create different types of posts, very little teacher intervention was required.

Learning spaces

This type of communication initiative was made easier by Belmont's existing technology framework, which includes computer labs with laptops and PCs, and the advantage of wireless connectivity.

Some classes involve outdoor activities which take place in a variety of locations, but the actual uploading of blog content occurs in computer labs. Students can connect using PCs or even across the school's wireless network with laptops.

Blogs are sometimes projected onto a screen in the computer lab using a data projector. This is most effective for group discussions. Once students break from discussions, they can return to their laptops or desktops for to write individual posts or respond to comments.

Tools for learning

WordPress *(http://wordpress.com)* - an easy-to-use blog hosting provider.

More information?

Belmont High School: *http://bhs.vic.edu.au/*

Microsoft Education Australia:
www.microsoft.com/australia/education/

Victorian Department of Education and Early Childhood Development
http://www.education.vic.gov.au/

Teaching sustainability

Daniel Strauss and Kylie Price at Glen Waverly Secondary College wanted to teach their year 9 students how to live sustainably. They knew this would be best achieved through an inquiry based learning program that inspired students to make informed decisions about sustainable living.

The teachers developed a cross-curricular program about sustainability called 2020 that incorporated current core subjects over a rolling four-week schedule.

The program focused on the key reasons for sustainability, community engagement, relevance to students and their families, and the global impact of sustainable living.

Students began by forming groups and choosing research questions to develop into a final project. Among the topics explored were biodiversity, energy, transport, people and population, food and water.

To help initiate their research they completed an online survey about research and learning preferences so that they could pinpoint a work style that suited their project theme and team.

Students promoted their questions in a WordPress blog, which allowed collaboration with their peers, as well as teacher feedback and guidance. Once their initial proposals were approved, they started publishing findings and developing a final presentation.

Students presented their projects in an expo style fair during the final week of the course, which included displays, videos, quizzes and demonstrations.

Student engagement

Students found the program an enjoyable way to learn a new subject.

Key to their engagement was the use of blogs, which helped keep groups accountable for their work. Teachers could set email reminders and link to student posts via RSS feeds, which meant they could check date stamps and the frequency of entries.

The other advantage of this online collaboration was that students could form communities around their projects, which is hard to achieve using traditional pen and paper.

The final expo also proved a fun exercise in which students could showcase their work and stimulate discussion with their peers and teachers.

> "The transparency of the blog format allowed students to more openly discuss their work and give others feedback."

Daniel Strauss, Year 9 teacher
Glen Waverly Secondary College, Victoria

WordPress *(http://wordpress.com)* – an easy-to-use blog hosting provider.

An example of a student blog.

Success factors

The 2020 program would not have been possible without the blog environment. It united students by giving them a sense of teamwork and helped them rally around their respective projects.

The transparency of the blog format also allowed students to openly discuss their work, see whether their ideas were working, and offer feedback to their peers. This collaborative learning style really gave the class a sense of duty around the cause and made them feel like responsible citizens.

Blogs are also entirely paperless (and therefore sustainable). Ongoing assessment is easy and logical; and discussions are open and collaborative.

Potential improvements

Daniel and Kylie noted that while the expo was a great success, it could have been improved through more hands-on demonstrations. For example, if a project involved growing a veggie patch, the students could have used the veggies to cook food and present it.

Daniel and Kylie also felt that greater involvement from other teachers and the school community would have created a larger audience and more exciting atmosphere at the final expo.

Top tips

- Create a sense of teamwork by forming the students into groups and allowing them to choose their area of research.
- Use online surveys to establish research and learning preferences.
- Encourage student and teacher collaboration with a WordPress blog.
- Organise an expo-style fair for students to showcase their work.

Pedagogy

A four-week inquiry based learning program was used.

The cross-curricular program incorporated maths, english, humanities, science and health & PE classes and allowed students to form groups and focus on a preferred area of study.

The teachers guided their students through the WordPress blogging tool to help them collate information, collaborate on their research and deliver a final research project for the expo.

Learning spaces

Regular classroom spaces were used during the program but the teachers encouraged a flexible learning environment where the students could openly communicate and share their ideas. Because they were mostly working in groups it was important to provide flexibility with the arrangement of chairs and desks.

Tools for learning

Students used school PCs to access their blogs, an environment that offered multiple benefits: The project allowed students to also work with movie files, digital worksheets, PowerPoint® presentations and online surveys.

WordPress *(http://wordpress.com)* – an easy-to-use blog hosting provider.

Microsoft® Office PowerPoint *(www.microsoft.com/ powerpoint)* Build professional slideshow presentations with text, graphics, animations, transition effects, embedded sound and video, and much more.

More information?

Glen Waverly Secondary College: *www.gwsc.vic.edu.au/index.cfm*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Victorian Department of Education and Early Childhood Development *http://www.education.vic.gov.au/*

Meet you online!

Megan Crawford at Geelong High School, Victoria, wanted to move her students beyond traditional documents and worksheets to an environment where they could access the school curriculum in a shared online space. Her intention was to encourage collaboration amongst the students and enhance their self-expression.

Megan began by researching a number of Web 2.0 environments using the **www.Diigo.com** social bookmarking site. Diigo allowed her to collect and organise useful Web sites and online content using an online text highlighter and sticky note tool within her browser.

During her review of online spaces, Megan came across **www.Stixy.com**, a Web site her students could use to better organise class materials and resources. Stixy provided the class with an online noticeboard, where they could post notes, set up collaborative workspaces and use widgets to incorporate multimedia into their work.

In addition, Megan introduced students to **http://penzu.com**, a Web site that offers space to paste resource links, make notes and pose questions. The class also used **http://EyePlorer. com** to search for visual content by time, place and people, making it easy to order and organise.

Students found the spaces perfect for compiling content in their English class. For example, they created a specific area in Stixy for the 'Age of Enlightenment', where they downloaded Microsoft® Office Word and Adobe® PDF research documents, and also posted their own findings.

The students really latched onto the idea of online sharing using Stixy. They added relevant images, posed questions to each other in a forum-style space called "Sticky notes" and also edited their own notes and assignment papers.
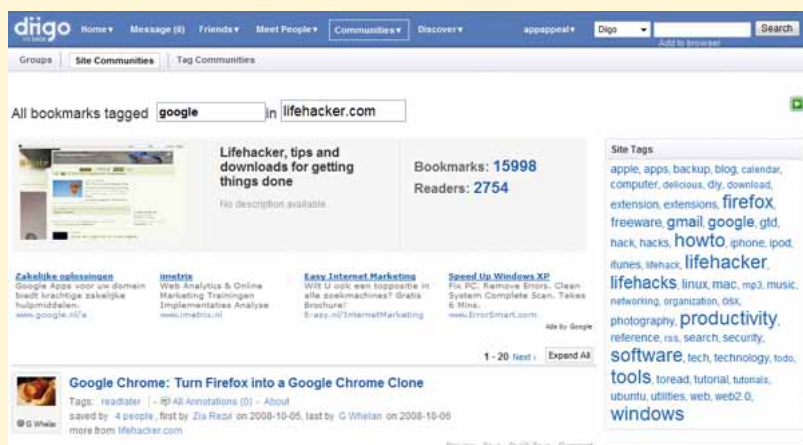
Success factors

The Stixy spaces were engaging and visually appealing, allowing students to be creative, while maintaining a level of consistency in how they presented both shared and individual work.

Megan noticed that the collaborative nature of Stixy instantly provided a more compelling learning experience than traditional text documents. In particular, she was pleased to see greater interaction with course material than in previous classes. The ability to embed rich content such as video, audio, images, for example, allowed students to be more creative and post more detailed work.

"Our new online spaces are engaging and visually appealing, but also maintain a level of consistency in how students collaborate."

Megan Crawford, English teacher,
Geelong High School, Victoria

Diigo *(www.diigo.com)* - an online research tool that makes it easy to highlight and share content.

An example of a Penzu journal.
(http://penzu.com/)

In addition, the noticeboard was an easily accessible forum where students could debate and ask each other questions. Even poorer achieving students started to display strong collaboration skills and a more dedicated approach to their studies.

Stixyboards also gave Geelong's teachers the ideal space for collaborative projects with teachers in other schools, helping to broaden their own curriculum and teaching methods.

Potential improvements

The only issue Megan found with the Stixy environment was that student contributions could be too easily deleted. While Stixy allows students to view recent revisions, it's not capable of reinstating deleted items. As a result, Megan and the other teachers instructed their classes to take great care with all site resources so that no work was lost. Megan concluded that the school would benefit from more versatile online workspaces in the future.

Top tips

• Use laptops where appropriate but make sure you include a blend of learning, including class discussions and different activities.

• Focus on student-centred lessons. Explain your learning intentions and negotiate a clear goal with your students. Make sure they know where to access the information they need.

• Encourage group work with just one laptop shared between three or four students. This is ideal for publishing information on wikis for others to share.

• Try café-style groups with one student from each group moving around and gathering information. Ask students to negotiate their roles and tasks to develop their team skills.

Stixy offers students fun and easy to use Web spaces for their class resources. *(www.stixy.com)*

Pedagogy

Minimal direct instruction was involved as Megan has selected tools that are generally quite self explanatory, but also have plenty of scope for creative use. Megan started by introducing her students to the technology and showing them how to collaborate online. Once she had encouraged students to explore and use the shared online environments, they quickly took the initiative themselves.

Learning spaces

As Megan's Enlightenment topic is primarily aimed at providing online support, the physical space is less important. Student access to a personal laptop or netbook is central.

Tools for learning

Stixy *(www.stixy.com)* – a collaborative Web site that provides online bulletin boards for posting information, photos, documents, and to do lists.

Diigo *(www.diigo.com)* – an online research tool that makes it easy to highlight and share content.

Penzu *(http://penzu.com/)* – a Web site that offers space to paste resource links, make notes and pose questions.

Eyeplorer *(http://eyeplorer.com)* – a Web site that searches for visual content by time, place and people, making it easy to order and organise.

More information?

Geelong High School: *www.geelonghigh.vic.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Victorian Department of Education and Early Childhood Development *http://www.education.vic.gov.au/*

OneNote® for all

Sue Dunlop at Geelong High School wanted to her students to have a centralised online knowledgebase where they could store their class work and collaborate on projects.

The idea came to her after the introduction of 1-to-1 netbooks for year 7 students when Sue realised her students were having to manage an ever-growing knowledgebase in different school subjects.

Sue investigated the capabilities of Microsoft® OneNote®, which provides free form information gathering and allows multiple users to share online.

Sue realised Microsoft OneNote was ideal for the classroom and so she introduced it to her students, explaining it as similar to creating their own wiki, an idea which they could grasp immediately. Sue explained that each student's Microsoft OneNote space was something that could grow and change as they needed. They had total control to develop content and edit their work throughout the course of the year.

During ensuing science lessons, students began using Microsoft OneNote to make online notes, add Web clippings, screen grabs and resource links.

At the conclusion of a session students were encouraged to record an audio or video reflection on their learning for inclusion in their Individual Microsoft OneNote notebooks. These media resources could include practical demonstrations and be used for later revision.
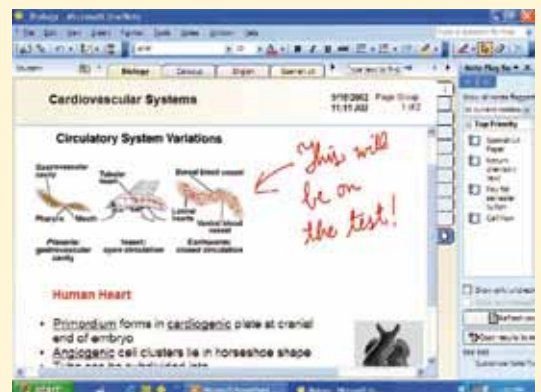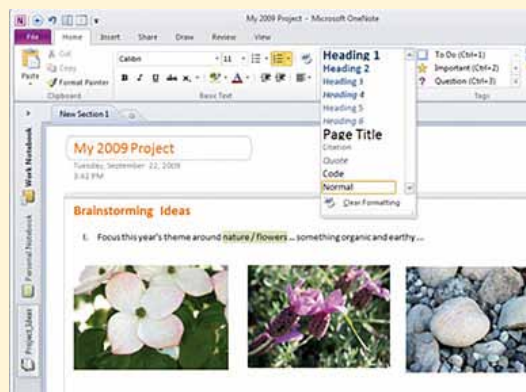
Student engagement

Microsoft OneNote initially formed part of everyday ICT lessons, but Sue encouraged the students to use the software as a broader collaboration tool and they soon discovered additional capabilities and interacted with it more effectively. For example, Microsoft OneNote syncs automatically with Microsoft® Outlook®, which the students realised made managing projects and other tasks even easier. Students can get a better view of their assignments and gather relevant resources as they find them.

The flexibility of Microsoft OneNote means both teachers and students can share ideas, post questions and track the progress of experiments, projects and homework.

Students access Microsoft OneNote on their netbooks as they need it. Some students may be working on a practical activity with scientific equipment, whilst another student may be capturing that using the Webcam recording function in Microsoft OneNote, and yet another student may be typing notes/reflections directly into the interface.

"The flexibility of Microsoft OneNote means both teachers and students can share ideas, post questions for each other and track the progress of their work."

Sue Dunlop, science teacher,
Geelong High School, Victoria

Microsoft OneNote allows students to collect resources and collaborate locally on the network or through the cloud.

Success factors

Sue feels that a tool such as Microsoft® OneNote® allows students to record their learning in ways simply not possible with paper and pen. A traditional chemistry experiment, for example, might involve handwritten research, a pencil drawing of the apparatus or equipment, and a few scrawled notes. But using Microsoft OneNote, students have a much richer and more detailed record of all their work, incorporating video footage, audio and video reflections, typed notes and ongoing research compilation.

One of the chief successes of giving the students Microsoft OneNote is that they managed their own learning. They helped each other to understand different science concepts and worked together to unravel problems. And the addition of video tutorials reduced the workload for the teachers because they didn't have to revisit lessons - they were available at anytime for all students to access themselves.

Students are also able to choose how they record their observations in Microsoft OneNote, which caters to different learning styles. For example, some prefer to type notes, while others use photographs.

Potential improvements

As more teachers and classes adopt Microsoft OneNote the staff are looking at ways for it to work effectively across disciplines. Sue sees science as something that doesn't stop at the classroom door and so she hopes OneNote's ability to hyperlink between notebooks could help with the sharing of information and resources.

Sue is a little concerned that backup of files over time may not be performed effectively by students, so an ongoing focus with students will be the importance of backing up data to USB drives, or external hard drives.

Top tips

• Encourage students to use Microsoft OneNote to make online notes, add Web clippings, screen grabs and resource links.

• Get students to share different concepts and work together to unravel problems using Microsoft OneNote workspaces.

• Reduce the teacher workload using video tutorials. Lessons can be made available for all students to access at any time themselves.

Pedagogy

Sue started with a basic introduction to Microsoft OneNote and its capabilities as part of an ICT lesson initially. Students have gone on to find useful features and capabilities as, and when they are needed through "Just in time learning" For example they have just discovered that Microsoft OneNote 'tasks' will sync automatically with the 'tasks' list in Outlook®, which helps make managing homework easier.

Learning spaces

Sue used a standard science lab with an interactive whiteboard on one wall. Students all use netbooks to access their Microsoft OneNote workspaces.

Tools for learning

Microsoft® OneNote® *(http://office.microsoft.com/en-au/onenote/)* A convenient digital notebook which helps students to research and collate notes and share them easily online. They can add images, audio, video, and Web links in one location on their PCs, notebooks, and tablets.

More information?

Geelong High School: *www.geelonghigh.vic.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Victorian Department of Education and Early Childhood Development *http://www.education.vic.gov.au/*

Anywhere, anytime learning

Stephen Brown at Geelong High School created an online space with curriculum resources his students could use to study and discuss topics.

He began by testing a simple online forum, in which he facilitated a discussion about online collaboration. He quickly found this particular forum, which was publicly available, wasn't giving him enough control over content.

Stephen looked for a more versatile platform with better publishing controls that ensured the security of his students and the school. He decided to move the existing forum over to Moodle, an online content management system that provides greater publishing flexibility and security because it can be managed within the school IT framework.

In his physics class, Stephen used an interactive whiteboard to show students a series of slides embedded with interactive content. The students made annotations and sketches directly onto each slide using a digital pen, which were then saved and shared within Moodle.

Stephen also recorded five minute soundbites of his classes using Audacity®, an audio editor available online. These recordings were also added to Moodle as revision resources and quickly became valuable revision resources.

Student engagement

The Moodle learning spaces used by Stephen's year 12 science classes are lively and vibrant, encouraging them to log on and participate regularly. Students actively contribute by initiating discussion, collaborating on course work and sharing class notes during study sessions.

The forum has also allowed students to be more engaged during class because they can focus on practical science projects and experiments, instead of always writing notes. They can relax and focus on core in-class learning, knowing they can access revision notes and resources later.

"Students can actively contribute using Moodle by initiating discussion, collaborating and sharing notes for revision."

Stephen Brown, science teacher,
Geelong High School, Victoria

Moodle can be used to gather and organise class resources.

Audacity is a recording software available online.

Success factors

Moodle provides Geelong High a flexible and fun way to organise their revision notes and resources. It's accessibility and ease of use has become invaluable to students who are already balancing a heavy workload for their High School Certificate.

For instance, Stephen has a number of students who travel from another high school to attend his classes, so he feels it's essential that those students have access to the same resources as his regular students – from anywhere at any time. These students can log in from their school campus, at home, in the library or anywhere with an Internet connection, and contribute or locate resources like any other Geelong High student.

Stephen also provides online support in case anyone has questions or is having trouble finding resources. It has become a shared responsibility between teachers and students, whereby everyone contributes content and can help each other around the forum.

Potential improvements

Moodle has proven to be the ideal online space for Geelong High School, though it was initially difficult for students from other associated high schools to access content. Stephen and the school's IT technicians were able to overcome this in the end but it remains a potential problem area that requires an easier solution in the future.

Stephen would also like to introduce video recordings via Webcam into his classes. This would provide an even richer learning experience and learning resource for the Moodle forum.

Top tips

- Find an online forum that has flexible publishing tools, allowing set-up control and content editing, but also provides online security for your students.

- Use an interactive whiteboard to bring content to life and engage students.

- Record snippets from classes using Audacity®, providing a quick and easy reference for students when revising. They are also simple to store online in Moodle.

Pedagogy

Stephen used physical resources to demonstrate and explain concepts in the physics lab. Where these weren't available he used digital learning via a whiteboard or laptop computer.

Learning spaces

Stephen runs his classes in a standard science lab with an interactive whiteboard on one wall.

Tools for learning

Geelong High offers its students digital learning technology wherever possible. Students access their online forum on the school's PCs and laptops and most classes incorporate the interactive whiteboard. The board is easily connected to a laptop for everyone to see online content.

Moodle *(www.moodle.org/)* – a learning management system that allows users to organise resources in a easy to use Web space.

Audacity® *(www.audacity.sourceforge.net/)* – a downloadable sound editing software.

More information?

Geelong High School: *www.geelonghigh.vic.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Victorian Department of Education and Early Childhood Development *http://www.education.vic.gov.au/*

Waxing Lyrical

Ian Mitchell at St Helena Secondary College gave his english class hands-on poetry and lyric writing experience. When he heard that some year 10 students were producing their own horror films and needed original music for the credit sequences, he knew it was the perfect chance to get his class writing.

Ian began by chairing discussions between the year 10 and year 7 students, helping them brainstorm about musical styles and recording techniques. He then demonstrated Microsoft® Songsmith® to the group and suggested it as the ideal software to record their songs.

The year 7 students decided to create a rap song, feeling that it would be a vibrant and effective way to spruce up the film credits. They drafted lyrics based on discussions with their respective year 10 film producers, using storylines from the horror films as inspiration.

The groups then created makeshift audio recording studios in quiet spaces around the school, such as storerooms and secluded hallways. They used Songsmith on their laptops together with microphones and headsets to record and edit the their songs. They developed these into music tracks, which were added to the year 10 films.

Student engagement

The year 7 students really enjoyed the chance to collaborate with the older students they looked up to. Similarly, the year 10 students found it useful to look at their films from the perspective of a younger student.

The groups of year 7 and 10 students sketched out sequences, drafted music and lyrics, planned the recording sessions and delivered a final product via Songsmith. The amount of teamwork required an the fun experience of creating a rap song generated a very high level of engagement and encouraged the development of new skills.

Success factors

Songsmith is an intuitive easy-to-use application that allowed the students to easily create professional-sounding accompaniment for their lyrical ideas. The simplicity of the software meant than every student could focus on developing concepts and writing, without worrying about their musical talent. This helped make the whole project more successful and easy to accomplish.

"There was such a strong level of engagement because of the teamwork involved and because the different age groups were learning new skills from each other."

Ian Mitchell, english teacher,
St Helena Secondary College, Victoria

Microsoft Songsmith provides musical accompaniment to voice recordings to create complete songs.

There was also a genuine team atmosphere in the class as students worked toward a common goal. For example, at any single moment year 7 and 10 students were working on different elements of production together – from writing to sequencing scenes and recording. Ian said "it felt like a real movie studio and encouraged the students to openly offer their most creative ideas."

Potential improvements

Ian was pleased with the intuitive, easy-to-learn nature of Songsmith®, but would like to consider a broader range of audio software. He would like to combine a variety of online and offline music methods so that students can develop a greater variety of music for each film. "Students could have used traditional loop-based recording techniques or even have set-up a virtual studio that allowed easier collaboration from any location," said Ian.

Top tips

- Encourage students in different grades to work together on a project and learn from each other.

- Facilitate discussions amongst students to get them brainstorming and collaborating.

- Use laptops to give students the flexibility to move around and record music in their preferred environment.

- Use Microsoft® Songsmith with microphones and headsets to record and edit songs.

- Give students the freedom and creativity to design their own workspaces – and watch the great results!

- Students can use online loop based editor such as *http://www.looplabs.com/*

Pedagogy

Ian set up collaborative sessions between St Helena's year 7 and 10 students, which got them quickly sharing ideas and planning recording sessions together. These discussions were a great way to break the ice, encourage teamwork and introduce new technology to everyone at the same time.

Learning spaces

Ian used a standard classroom space for the initial discussions, planning and writing. Students generally chose to record their lyrics privately using withdrawal rooms, hallways, or store rooms as makeshift recording studios.

Tools for learning

Microsoft Songsmith was used on laptops with built-in microphones or headset microphones. Some students chose to use their own headsets.

Microsoft Songsmith *(http://research.microsoft.com/en-us/um/redmond/projects/songsmith/download.html)* – a fun audio software which helps deliver professional-sounding musical accompaniment to voice recordings.

More information?

St Helena's Secondary College: *www.sthelena.vic.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Victorian Department of Education and Early Childhood Development *http://www.education.vic.gov.au/*

Real world learning

Mariejke Graham at St Helena Secondary School set up an online space where her year 7 students could store curriculum resources and have productive ongoing conversations about their projects.

She decided that a five-day urban camp in Melbourne would deliver a rich learning experience that the students could develop into an online resource and discussion forum.

The students visited a number of cultural sites in Melbourne, including the state library, museum and art gallery. They took digital photographs and movie footage, gathered vox-pop audio recordings and made observational notes and sketches.

Back in the classroom, the students saved uploaded their resources to the new online space using laptops and school PCs. Mariejke also used an interactive whiteboard to help review the student findings and discuss ways in which they could explore them further.

The students then formed groups to turn their research into final projects. Mariejke encouraged them to think creatively and develop compelling multimedia pieces with the latest software.

Some students used Microsoft® Publisher to write and publish a newspaper, while others built a Web site about homelessness. Another group used video footage from their Flip Video™ camcorders to produce films in Windows Live® Movie Maker. Other students scanned hand-drawn pictures and combined them with text written in Microsoft® Office Word to create storybooks.

To complete the assignment, each student composed a reflection on the experience of researching, working and collaborating in the new online space.

Student engagement

Mariejke's inquiry-based teaching style allowed the students to direct their own learning. This meant her class was given the space and time to pick a topic of interest and engage with their choice of software. The students embraced the opportunity to learn new skills and share what they learned with their peers online. They gained a sense of responsibility and ownership from their research in Melbourne, which then translated into meaningful and personal projects.
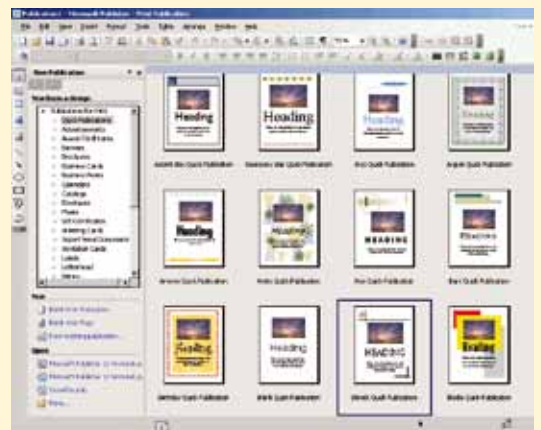
Success factors

Mariejke believes that by giving the students a chance to gather and share rich digital resources during the camp, students were able to develop higher quality work. They quickly identified inaccurate information and corrected it, which established collective intelligence and confidence within the group.

"The great success of this experience was watching students of varying technological expertise help each other overcome problems and collaborate on their projects."

Mariejke Graham, Year 7 teacher
St Helena Secondary College, Victoria

An example of a Flip Video camcorder.

An example of a Microsoft Publisher screen.

The students also managed their own learning instead of relying on Mariejke's direction. They helped each other gather different resources, qualify their learnings and create professional-looking projects using software on their laptops.

The biggest success of this unit was demonstrating that all students – regardless of technological competence – were able to work together to overcome problems and produce a high quality project.

Potential improvements

Next time, Mariejke would like to encourage a wider use of technology tools. A number of students incorporated a minimal amount of software, opting for puppet shows and hand-drawn illustrations. Mariejke feels that it would be more appropriate and relevant to future learning if students were pressed to develop stronger ICT skills.

Top tips

• Take students outside the classroom and the Internet by providing a rich real-world learning experience.

• Encourage the use of multimedia software to help students become more confident with new technology.

• Allow students to manage their own learning and minimise teacher direction.

• Let students use written reflections on their work to comfortably share experiences and learn from collective mistakes in a dedicated online space.

Students collaborate online during class.

Pedagogy

Mariejke uses relevant, real life experiences to inspire her students. By showing her class around various cultural locations in Melbourne she finds it easier to spark thinking about important issues in today's urban world.

Mariejke employs a student-directed learning experience, especially when it came to new technology. She and her colleagues at St Helena's are careful not to appear as "experts" in multimedia software, which empowers students to embrace the tools themselves and collaborate with each other to create their projects.

Learning spaces

Mariekje used an open learning classroom with an interactive whiteboard and a number of dedicated desktop computers and netbooks.

Tools for learning

Mariejke's students were free to pick and choose from available technology as it suited their particular project. Some of the software used includes:

Microsoft® Publisher *(http://office.microsoft.com/en-us/publisher/)* – helps create stylish and professional publications.

Flip Video™ camcorder *(www.theflip.com/en-au/)* – record science experiments, tutorials and classes which are posted on the school intranet for revision, and for students who were absent from the class.

Windows Live® Movie Maker. *(http://www.microsoft.com/windowsxp/downloads/updates/moviemaker2.mspx)* – allows you to build and edit home videos on your PC or laptop.
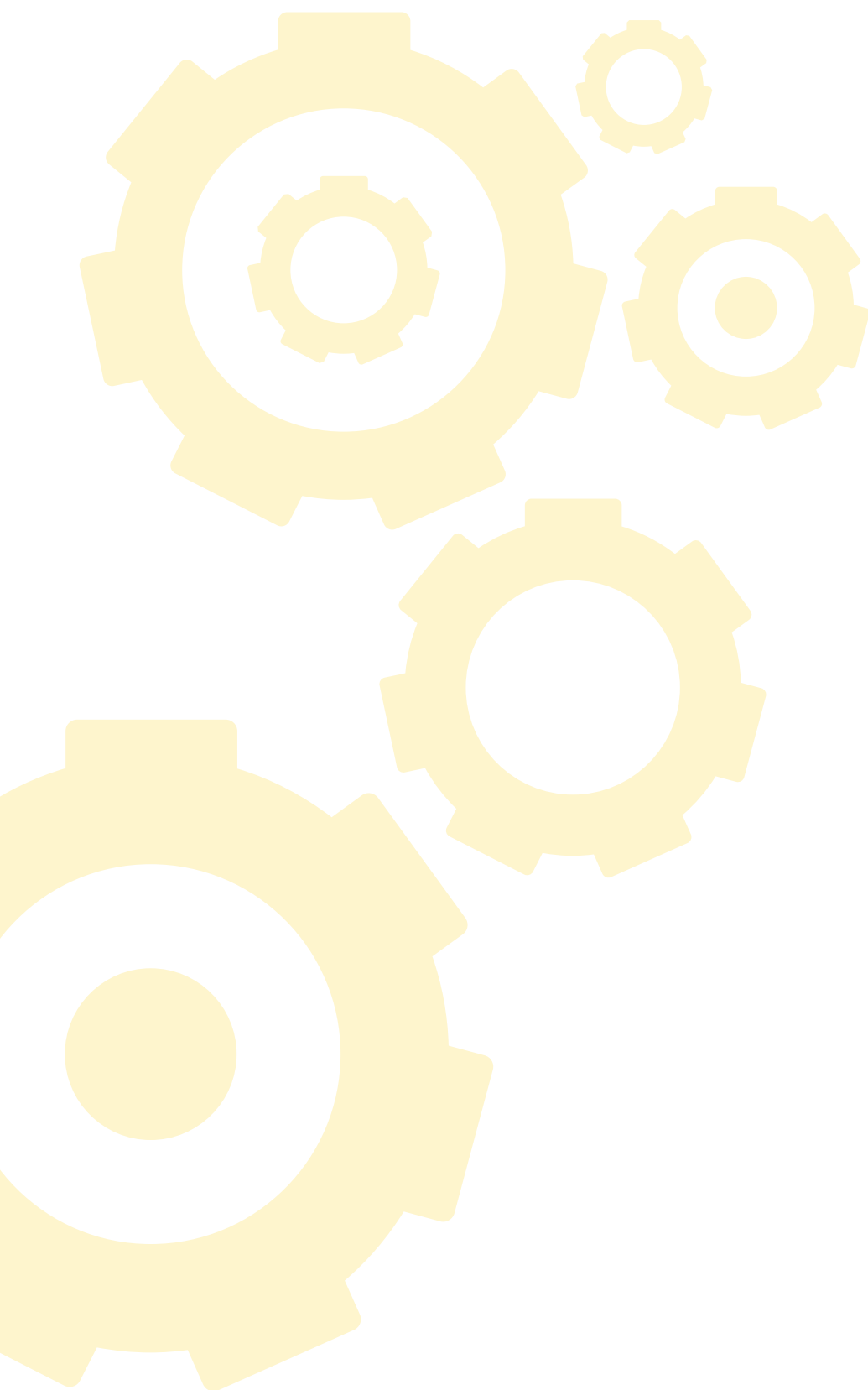
More information?

St Helena Secondary College: *www.sthelena.vic.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

Victorian Department of Education and Early Childhood Development *http://www.education.vic.gov.au/*

Case studies – South Australia

- Australian Science and Mathematics School (AMAS)
- Grange Schools
- Keith Area School
- Littlehampton Primary
- Munno Para Primary School
- Prospect Primary
- Richmond Primary School
- Thiele Primary School

Microsoft

The science of poetry

Jean Clayton and a team of six teachers at Australian Science and Mathematics School, let students select from a variety of technologies to develop "bricks" – digital collages of images and poetry for display in an art gallery.

Worried that students would switch off when presented with poetry, Jean and her team developed a new strategy for teaching poetry using science and technology. Their goal was to engage reluctant students with poetry by offering relevant ways for them to form opinions and the chance to create a digital resource.

Two Microsoft® Office PowerPoint® presentations were used to introduce the unit to students. One contained a series of photographic interpretations, commentary, poetry, questions and quotations on the unit theme: biodiversity. The second contained examples of artistic collages to demonstrate how pieces of other images can be used to create a new visual idea.

Students were given a ten-question "Learning Log" (Microsoft® Office Word file) and were asked to read and discuss poems in small groups, with close monitoring and teacher support. Each group could choose which technology they used to fill up their Learning Logs with ideas about the poetry. This ranged from composing wikis and blogs, to recording audio or writing in Word or PowerPoint. They could also include links to images and Web sites they found using Bing™ and felt added depth or understanding to their responses.

Finally, each student was tasked with creating one or two A3 "bricks" of images and texts. The bricks were then put together to construct an impressive display on a wall within the building. They were also used to create a digital art gallery on the school Web site.

Student engagement

Jean found this unit generated much greater engagement and enthusiasm for poetry than she had expected in year 10/11 students – especially considering their predominantly scientific interests. By comparison, the same unit was offered in a more traditional format two years ago and was significantly less engaging.

There was very strong collaboration and interaction, even among students who have been seen as isolated or alienated in this school. "For example," Jean said, "a student identified as having Asperger's syndrome felt confident enough to work with me intensively via email and classroom engagement was visibly stronger. He was confident enough to take students on a tour of his bricks and to engage in peer review with other students. Another student who has a high level of non-attendance, maintained contact with me from home over the six weeks of the activity and produced an excellent outcome."

Students enjoyed directing their own learning and were surprised that they learnt so much so effortlessly – seemingly oblivious of the extra effort they all put into their work. The final "bricks" say it all, revealing the strong student engagement and commitment to the task.

"This project encouraged very strong collaboration and interaction, even among students who have been seen as isolated or alienated in this school."

*Jean Clayton, English teacher,
Australian Science and Mathematics School, SA*

Examples of "bricks" created by students.

Success factors

Jean saw the following factors as instrumental to the success of her approach:

Because the project could be created and presented in a number of ways, students had greater freedom of imagination and personalisation. They undertook collaborative work and developed significant critical literacy.

Many of the online Learning Log responses could be readily recycled as learning resources for other students.

Since projects were submitted online, teachers had a place to provide 'just-in-time' feedback or stimulating questions.

In creating the collages, students developed advanced image editing skills. When faced with a problem, such as being unable to embed text in their collage, the students collaborated together to solve the issue and develop their own work-arounds. They used discussion forums and email when away from school, which integrated peer tutoring and peer review processes.

Web research would often yield materials not available in the school library, including a wider range of poetry than that in the students' traditional poetry anthologies.

It was a requirement that all borrowed material be referenced correctly using the Harvard style, teaching students essential skills for future study.

Potential improvements

Jean notes that the final products – both the Learning Logs and the "bricks" – could be customised for ESL and special needs students. This would require a wider range of resources and responses that could be provided through online discussion and mentoring.

Top tips

The task needs to be scaffolded carefully with access to ongoing teacher support and resources such as a sequence of subtasks, learning log, starter Web links, resource centre briefing (for display of poetry books) and attention to building collaborative structures for group work both in class and online.

Pedagogy

Jean believes that by working collaboratively and not setting herself up as the expert, she empowered students to debate with each other more freely and take charge of their own learning.

Learning spaces

This project was all done in a regular classroom where students had 1-to-1 access to laptops and a desk space on which to collate their ideas – both individually and in groups.

Tools for learning

For this particular unit, Jean needed 1-to-1 access to computers and used a projector as well as the following software:

Bing™ *(www.bing.com)* A search engine that makes it easy to locate relevant Web sites, movies, images, maps and translation tools.

Microsoft® Office PowerPoint® *(www.microsoft.com/powerpoint)* Build professional slideshow presentations with text, graphics, animations, transition effects, embedded sound and video, and much more.

Microsoft® Office Word *(www.microsoft.com/word)* A powerful industry-standard word processing tool for writing and designing various text documents.

More information?

Prospect Primary School Web site:
www.prospectps.sa.edu.au

Microsoft Education Australia:
www.microsoft.com/australia/education/

SA Department of Education and Children's Services:
www.decs.sa.gov.au/easternadelaide/

Government of South Australia
Department of Education and Children's Services

AUSTRALIAN SCIENCE & MATHEMATICS SCHOOL

Student-directed presentations

Karen Butler at Grange Schools managed a framework for year 6 and 7 students that enabled them to freely choose a topic and create a presentation using technology.

Every year, year 6 and year 7 students at Grange Schools must complete a Roundtable Assessment. Students select a topic of interest relating to the theme "heart, hand and mind" – which means choosing something they are passionate about, something they can do and something they involves new learning and higher order thinking.

This year a global perspective was added, by including stimulating questions about gender equality, environmental sustainability, cultural diversity and poverty. This critical component meant that students had to question information, validate their resources and consider multiple perspectives.

Students used Bing™ to research their topics. This helped them gain practical knowledge about how to identify good quality information from valid sources. Once they had collected and verified enough research, the students began to develop engaging multimedia presentations that made use of slideshow, movie making or animation tools in Microsoft® Office PowerPoint® and Windows Live® Movie Maker.

"Technology is truly transforming the educational landscape and I for one am enjoying the ride!"

Karen Butler, Year 6/7 teacher,
Australian Science and Mathematics School, SA

Student engagement

Karen was amazed at the creativity unleashed in her students through access to technology. "Allowing a student to take home a camera was astounding," says Karen. "The student made a video of her Aunt, a local Aboriginal artist who talked about being part of the stolen generation through her art works."

Technology also allowed students to enhance the depth of their learning, by accessing content designed to evoke a response. One student used a "blood diamond" music video to talk about the social costs of mining gemstones; another used statistics to discuss the disparity between male and female wages in tennis; and another student discussed the ways a pianist used her fame to support aids research and prevention. One student wrote to the A-League asking them not to use Nike® soccer balls because he discovered they were made by child labour.

Success factors

Because students were allowed to explore any topic of their choosing, their passions were immediately engaged. Karen noticed a shift in her students attitudes from passive consumers of media to active content creators.

"My students have shown they are far more willing to express their understandings of the world through multimedia creations than they would perhaps just responding to questions in class," says Karen. "I came to know the things they were passionate about, the way they wanted the world to change and the multiple skills they brought to the learning environments, both virtual and 'real'."

A student gives a Roundtable presentation using PowerPoint.

A student uses a digital camera and movie making skills to create a Roundtable video presentation.

Karen found that access to other people and resources online helps increase the depth of information. Students felt that their presentations had a greater audience and relevance because their multimedia presentations could be shared online and used take some kind of action.

Potential improvements

Karen felt that the global perspective on the projects would become more real if students made a real contribution toward their topic. Next time Karen will require students to take some kind of action based on the information they discover, such as joining a group, making a commitment, joining a project or contributing to dialogue with people of influence.

Top tips

Karen believes teachers need to trust that their students will use their time effectively and relinquish some control, step back from surveillance and allow some evolution of ideas – even though some students will inevitably become lost in the open-endedness of the task.

One of Karen's students learnt valuable life skills by being given the chance to work things out for herself. "At the start I thought I was working at a good pace, but towards the end I realised I was behind and needed to put more time in and become more focused," said the student. "Technology allowed me to access information really quickly and by the end of the RTA I felt like I could find my way around Web sites more easily and manage my files better.

Pedagogy

Karen feels it is extremely important to let students explore their topics freely and to relax control over class structure.

Learning spaces

Access to 1-to-1 computers was crucial to enable students to gain information and present their knowledge and understandings. Students supported each other, collaborated together and were responsible for the use of their time.

Tools for learning

Karen's students were free to pick and mix technologies to create mixed media presentations. Software that was used includes:

Bing™ *(www.bing.com)* A search engine that makes it easy to locate relevant Web sites, movies, images, maps and translation tools.

Microsoft® Office PowerPoint® *(www.microsoft.com/ powerpoint)* Build professional slideshow presentations with text, graphics, animations, transition effects, embedded sound and video, and much more.

Windows Live® Movie Maker *(http://download.live.com/ moviemaker)* - A fast, easy way to turn photos and video clips into great looking movies and slideshows that you can share with students, other faculty or on the Web.

More information?

Grange Schools Web site: *www.grangesch.sa.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

SA Department of Education and Children's Services: *www.decs.sa.gov.au/westernadelaide/*

Government of South Australia
Department of Education and Children's Services

The perception of taste

Alicia Keatley at Keith Area School, helped her Home Economics students use technology to develop skills in food presentation and food photography.

To discover potential areas of learning, Alicia chaired a series of discussions on food presentation and digital photography. She used the results of these discussions to assess the level of incumbent knowledge and develop research assignments on food styling, food photography and practical food preparation skills.

Rather than presenting her own selection of images, Alicia let her students research freely in magazines and online to find food photographs they personally liked. Students then used a data projector to analyse their chosen photos in class. Alicia prompted them to talk about why they thought each photo was successful and the photographic techniques used to achieve this. Camera angle and focal points were two areas that generated the most debate.

Students then learnt how to 'plate' food for photography and how this is different to plating food generally. They investigated different techniques used to enhance the appearance of the food on the plate, including non-edible additives used to improve appearance. Alicia then equipped her students with high-quality digital SLR cameras and helped them discover how to manipulate the settings to take different kinds of photographs. Students experimented with camera angles, camera positioning, lighting, colour and focal depth, in order to capture a range of photos showing different aspects of their 'plate'.

One of the most instrumental parts of this project was the editing process. Students thought carefully about which of their photographs looked the best and were free to choose any photo editing software to improve colour, lighting and the overall appearance of their food. Some students cropped or cut out selections from their photos to help the viewer focus on particular aspects of their plates. The students also began thinking about how to improve the presentation of their food as they cooked it.

Students then used their research and experience to design a collection of recipe cards or a recipe booklet. They considered which recipes would yield the most attractive food and how the cooking process, photography and digital manipulation could best achieve this.

Student engagement

By allowing her students to take full responsibility for the research and execution of their projects, Alicia found her students began constantly thinking about how recipe choice, cooking procedures and other finishing touches could have great impact on the appearance of a plate. Her students sparked lively discussions about food colours, textures, appearance and cooking style. They also shared tips to taking successful photographs, advising each other on how they might improve their work.

"Using ICT was a real change. Presenting a meal artistically is a real challenge, but fun and interesting at the same time. I really enjoyed it."

Home Economics student,
Keith Area School, SA

Examples of food photography taken and edited by students.

Success factors

This project was a huge success for Alicia's class. She was especially blown away by how quickly her students were able to appreciate the importance of a plate's appearance – as opposed to its taste – as this is something that usually takes some time for students to understand. Alicia noticed a shift in student thinking from 'I want to cook and eat the food' to 'how is this going to look on the plate?' and 'will this recipe be suitable for photography?"

She was also proud of the results that came from empowering students to direct their own research, analysis and project completion. Her students were able to understand basic ideas about how to present and photograph food by themselves, which meant they took greater pride in achieving a good result. They put much more thought into their work and evaluated their results more carefully.

This project has also been a great way for students to tackle a huge learning curve with enthusiasm, by developing useful skills in photography and image manipulation.

Potential improvements

The core elements of this unit could be applied in many different subjects. Students could use their photography skills to develop slideshows in Microsoft® Office PowerPoint® or Microsoft® Photo Story for computer class; document the process of a project in design and technology class; write a statement of purpose for english class; or develop a gallery of artistic photography for art class.

Top tips

"Time is really important for this to work well," says Alicia, finding she needed six weeks to bring the unit to completion. "It ended up taking a lot longer due to the photos needing to be manipulated and high quality discussions around the photography aspect of the task."

Alicia also recommends providing students with quality photography equipment. It doesn't need to be professional, she says, but it does make a huge difference when students can work with a decent zoom and high megapixels. You'll also need suitable facilities for taking the photos, with plenty of light and room for tripods. Alicia found that many students wished to photograph plates on a white background, so she sourced white card to enable this.

Pedagogy

Alicia believes that by allowing her students to direct their own research using relevant technology, she empowered students to debate with each other more freely and take charge of their own learning.

Learning spaces

This project was all done in the Home Economics room where students had access to 1-to-1 laptops. Research and work was completed in the classroom area, with cooking and photography done in the kitchen area. Students downloaded photos onto their own laptops and edited their photos with the editing software. A data projector was used to share the photos that were taken each lesson.

Tools for learning

Alicia used the student laptops, a data projector, kitchen facilities, photography equipment as well as the following software:

Microsoft® Office PowerPoint® *(www.microsoft.com/ powerpoint)* Build professional slideshow presentations with text, graphics, animations, transition effects, embedded sound and video, and much more.

Microsoft® Photo Story *(www.microsoft.com/photostory)* – An easy way for students to create multimedia presentations.

More information?

Keith Area School: *www.keithas.sa.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

SA Department of Education and Children's Services: *www.decs.sa.gov.au/limestonecoast/*

Government of South Australia
Department of Education and Children's Services

Keith Area School

Race around the world

Debbie Taylor at Littlehampton Primary motivated her maths students to get excited about timetables with a virtual race around the world.

For Debbie, teaching her students about timetables was traditionally a dull 'question and answer' situation, which she felt did not encourage deep understanding or applied learning. So she got creative and developed a new study unit that gave students a real-world, hands-on experience of the subject.

She challenged her students to plan a 7-stop trip around the world using actual bus, rail and air travel timetables. Students formed themselves into groups of three or four and set to work, using Bing™, atlases, paper maps and notes. There were a few important rules: each group had to start and end at the Adelaide airport; each group had to accommodate set "between flight times" such as three hours to clear international customs; and each group had to include at least one bus or train journey. The team who could plan the fastest trip around the world was declared the winner.

The race around the world required the students to draw on a range of skills and to keep organised with the data they collected. And because it allowed for many ways of achieving the one goal, students respected the variety of skills within their own group and started to take on a role which suited them and benefited their group as a whole.

"Suddenly the students were the ones reminding us that it was Maths time!"

*Debbie Taylor, maths teacher
Littlehampton Primary, SA*

The teams presented their journeys to the class using Microsoft® Office PowerPoint®. These included images of the places they visited and student-created animations of a plane flying over a map between each destination.

Student engagement

Debbie found that her students were extremely well-motivated by the task, settling down to work very quickly each lesson and sparking many learning discussions within their group.

Teams were very keen to successfully complete the challenge and rarely opted for the first option they found. They worked collaboratively, sharing ideas amongst themselves and trying out many different timetables before deciding which would work the best. Students also co-operated as a class by writing the Web sites they found useful on an interactive whiteboard.

The teams were excited to share their selections at the end. Debbie noticed how eager they were to win the challenge, with some madly checking the validity of the flights selected by the team who thought they had landed in Adelaide first, just in case!

Success factors

Debbie saw the following factors as instrumental to the success of her approach:

Collaboration and Problem Solving – Laptops could be easily moved into group work environments. Groups created a space of their own, so everyone was involved in both the computing and recording aspects of the task. Group agreement was a necessity. When students were selecting their countries

Debbie's students getting stuck in to the work.

discussions evolved – which ones were close, where flights went, how commonly companies flew there, appropriate order for the journey, which way round the world it was quicker to fly – and these questions formed the beginning of the learning log to get students thinking and recording.

Personalisation – Research was very student led, as they searched out solutions on their own. Continual 1-to-1 access to computers allowed students to consistently refine their virtual journey. Plus the learning log meant that students had to justify their ideas, making each journey even more unique.

Authentic Learning – Data was current and realistic, enabling students to learn about their world along the way. Students interacted with a variety of Web sites, but also used an atlas heavily. They were also able to include links to virtual tours in their final presentations. The timetables provide an engaging reason for the students to use 24-hour times.

Potential improvements

To broaden the learning potential, Debbie suggests picking a criteria for the journey rather than a list of countries to visit. These could be:

• Visit the 10 tallest buildings / longest bridges in the world

• Visit the 7 wonders of the world (ancient or modern)

• Tour world-famous landmarks – you could set a few categories (like sport, art, science and history) and have students pick one landmark per category, as well as justify each selection

There is also potential for contextual learning. Try asking students "if you land in this location at that time, what would be the time in Adelaide?", "What is the currency exchange rate there?" or "What is the total cost of your journey in AUD?"

Top tips

Flight information tends to change rapidly, so it's important to have students not only reference the Web site, but the date they last accessed it. Debbie suggests that students copy information about flight times into their learning log in case the Web link is suddenly no longer valid.

Pedagogy

Each maths class was sorted by ability and teachers swapped around their classes within the unit to cater for a range of learning needs. Debbie encouraged students to research freely and direct their own learning. By requiring students to find timetables on the Internet, this unit enabled them to make independent choices and decisions.

Learning spaces

This project was all done in a regular classroom where students had 1-to-1 access to laptops and a desk space on which to collate their ideas in groups.

Tools for learning

Debbie used student laptops or PCs, atlases, paper maps and a projector as well as the following software:

Bing™ *(www.bing.com)* A search engine that makes it easy to locate relevant Web sites, movies, images, maps and translation tools.

Microsoft® Office PowerPoint® *(www.microsoft.com/ powerpoint)* Build professional slideshow presentations with text, graphics, animations, transition effects, embedded sound and video and much more.

More information?

Littlehampton Primary: *www.littlehaps.sa.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

SA Department of Education and Children's Services: *www.decs.sa.gov.au/adelaidehills/*

Government of South Australia
Department of Education and Children's Services

From ABC to ICT

Zana Thiele at Munno Para Primary School helped her students create interactive phonics games for younger students.

If you've never imagined that year 6 and year 7 students could be bona fide software developers, you've never been to Munno Para. Tasked to design and create computer games to help their junior classmates learn phonics, Zana's students rose to the challenge.

Zana began the unit by presenting a collection of different phonics-based interactive games. The class then discussed the similarities and differences in the games and created an interactive game framework. They also researched inspirational phonics games online.

Students were then briefed to design a game with at least five multiple-choice questions that led to a consequence – for example, either 'correct!' or 'try again'. They used computers to storyboard their games and identify the links required.

Over several sessions, they used Microsoft® Office PowerPoint® to create a series of slides with hyperlinks to form a game. Each slide needed age-appropriate graphics and provide sounds that played on mouse clicks or roll-overs. An audio program called Audacity® was used with digital microphones to record the sounds and voice clips.

When the game prototype was developed, each student was able to observe a junior primary student try out the game. This provided usability testing and general feedback on the game from the target demographic, enabling students to implement relevant improvements.

Student engagement

The students were thoroughly engaged in the task. There was lots of "on task" talk and problem solving. Zana found that having a target audience gave students a real sense of purpose and kept them highly motivated.

Regular discussions were held in which students critiqued their work, shared discoveries, identified issues and solved problems collaboratively. The idea of sharing their work with each other and with younger students really encouraged them to do their best.

Because a wide range of skills are needed to create an interactive game, each student was able to enjoy different aspects of the process. Tyson thought "it was interesting doing the sounds and animations," Jake liked that "there was a reason for it when we shared it with Junior Primary students," and Shania enjoyed that "it was more interactive and we learnt new skills."

Other teachers also found the project a great way to engage students: "Multimedia enabled me to keep year 7s engaged up to week 9 in term 4. Behaviour management was easy as they enjoyed the task."

"It was great to get the Junior Primary students to critique the work. The older students got real feed back from their target audience."

Zana Thiele, Year 6/7 teacher
Munno Para Primary School, SA

Zana's students beta-tested their games with younger students.

Success factors

Technology was a crucial element to the success of this project. It helped students develop thinking strategies and logic to check and organise the hyperlinks between slides. It also helped them remain motivated and willing to try different options to solve their problems.

Less confident students had the opportunity to record their voices in a nonthreatening environment using digital technologies.

Potential improvements

After completing their first digital game, Zana feels that students would enjoy producing something more complex, like an interactive game or story with choices, aimed at their peers. Zana suggests creating something like a 'choose your own adventure' story with choices (hyperlinks) that trigger sounds and animations.

Top tips

Zana found it important to keep students working collaboratively, because they often needed to find ways to get Microsoft® Office PowerPoint® to do what they wanted it to do. It was also useful to get peer feedback in order to fix broken or incorrect hyperlinks.

Pedagogy

Zana let her students work independently at their own pace to bring their digital interactive game to life. When trialling the games, it is far more relevant and motivating to enable peer feedback rather than teacher feedback.

Learning spaces

This project was all done in a regular classroom where students had 1-to-1 access to computers and digital microphones.

Tools for learning

Zana's students used Internet-connected student laptops or PCs with the following software to create the games:

Audacity® (http://audacity.sourceforge.net/) a superb resource for recording and editing sound. You can record live audio and edit Ogg Vorbis, MP3, WAV and AIFF sound files.

Microsoft® Office PowerPoint® (www.microsoft.com/ powerpoint) Build professional slideshow presentations with text, graphics, animations, transition effects, embedded sound and video, and much more.

More information?

Munno Para Primary: *www.munnoparaps.sa.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

SA Department of Education and Children's Services: *www.decs.sa.gov.au/northernadelaide/*

Government of South Australia
Department of Education and Children's Services

Munno Para
PRIMARY SCHOOL

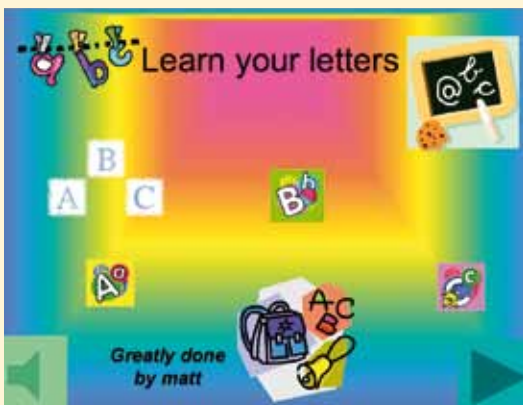Learn your letters
Greatly done by matt

Photo opportunity

Marg Clark at Prospect Primary used digital photography as a tool to get students thinking creatively in maths.

Which tree is the tallest in the yard? How many A4 sheets of paper would it take to cover the gym? Or how many books would it take to fill the library? These are just some of the questions that Marg's math class created when challenged to solve their own maths problem using digital photography.

Marg began by letting students form pairs and gathering the teams around the interactive whiteboard to discuss strategies, help solve problems and inspire those stuck for ideas. Each group eventually created a question and decided on the tools they would need to solve it.

The teams then set to work investigating the challenge. Over the four lessons, they took photographs around the school and used 1-to-1 access to laptops to store, edit and analyse them. Each group then created a Microsoft® Photo Story that explained the process they followed to solve their problem, as well as the maths needed to do this. Students considered how to take 'fair test' photographs, such as standing up straight when photographing and capturing the entirety of the tree in each photo. They also included a final reflection on the process, explaining what they would do differently the next time.

"Students were highly engaged and developed deep understanding of the maths concepts."

*Marg Clark, maths teacher
Prospect Primary, SA*

Along the way, students collaborated and shared photos on the interactive whiteboard. Assistance was given if required. Students could also use other interactive whiteboards to manipulate their photos. If an interactive whiteboard was not available, they used their laptops or printed out the photos for manual editing.

Student engagement

Marg felt this project worked well because the students were given control and were determined to solve the problem they had posed." They learnt more as they were engaged in the task, finding the answers for themselves, rather than using text books and having the answers explained over and over again for them," said Marg.

It was easy for the students to use the technology – no explicit teaching was needed. Photo Story is very easy to use and great tool for this type of explanation and reflection on learning. The students were engaged within the problem solving task. They developed a deep understanding of the maths concepts they explained in their Photo Story presentations.

Success factors

Marg found that the following factors were instrumental in the success of the project:

It was important to present a real life learning challenge that the students could engage with.

The challenge sparked sharing of maths knowledge between the kids and discussions around the best way to solve the problem. There were also opportunities for just in time learning – if students needed help or scaffolding it came on a needs basis.

Students kept records of the maths learning that took place along the way.

Instant access to computers meant that the Photo Story presentation did not take endless weeks and trips to IT suite to complete. The portability of laptops enabled them to work anywhere. They could even use the built-in Web cams for taking photographs if digital cameras were not available.

The students worked mostly outside.

Potential improvements

Marg suggests also having students publish their Photo Story presentations online through Moodle (online learner management system) so that the they can comment on each other's work.

Top tips

Some students are not used to 'driving' their own learning so they will need scaffolding to begin with. Marg suggests setting them the first task then encouraging them to design one of their own later.

Pedagogy

Marg believes in letting her students take control of their projects, so they become engaged in and proud of their work. She provides additional assistance only as it is needed, so that weaker students feel prepared to tackle the task and stronger students are not bored by repetitive instructions.

Learning spaces

This project was mostly undertaken outside with 1-to-1 access to netbooks. Students returned to the classroom to make use of the interactive whiteboards.

Tools for learning

Marg's students used netbooks, digital cameras, built-in Webcams, Interactive Whiteboards and standard maths measurement equipment to complete the project as well as the following software:

Microsoft® Photo Story *(www.microsoft.com/photostory)* – An easy way for students to create multimedia presentations.

More information?

Prospect Primary: *www.prospectps.sa.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

SA Department of Education and Children's Services: *www.decs.sa.gov.au/easternadelaide/*

Government of South Australia
Department of Education and Children's Services

Cereal numbers

Cheryl Ross at Richmond Primary School used a wide range of technologies to engage ESL students in science and health.

It can be a real challenge to support students with minimal English ability – especially when they've relocated from places as far away as Sierra Leone, Sudan, China, India, Vietnam, Iran and Egypt. Because ESL learners must constantly rely on their auditory skills, Cheryl has found it imperative to provide visual and kinaesthetic alternatives to learning.

That's why she designed a health and science unit that let students engage with interactive technologies to learn 'what makes us healthy'. She began with a class brainstorming session powered by WallWisher *(www.wallwisher. com)*, an online application that lets everyone contribute words, images, sound, video and more on a noticeboard-like Web page. Students also created their own journals in Microsoft® Office PowerPoint®, which became the basis of their work throughout the unit.

Students then used the Internet to investigate how foods are classified according to different guidelines. They shared their findings and added this to their journals. Next they collected different breakfast cereal boxes from home and compared the nutritional value of at least four different varieties, using the graphing tools in

Microsoft® Office Excel®. They used the results to write an exposition on the best cereal using Microsoft® Publisher on an interactive whiteboard.

Using Microsoft® Paint, students designed their own breakfast cereal packaging. Their findings, graphs and images of their cereals were added to their journal.

Next students investigated the importance of exercise and what it means to be fit. They used their journals to collect data on how much exercise they did in one week, then graphed this using Microsoft Excel. By combining this with photos taken during recess, lunch and fitness times, students were then able to create a Microsoft® Photo Story, discussing 'students should do more exercise'.

Working in groups, students developed a Venn diagram discussing what is a healthy environment and an unhealthy environment. Items in the middle section were then used to discuss the similarities between them. The class discovered that 'people' came up in both types of environment and discussed that people make a choice in keeping their environment healthy.
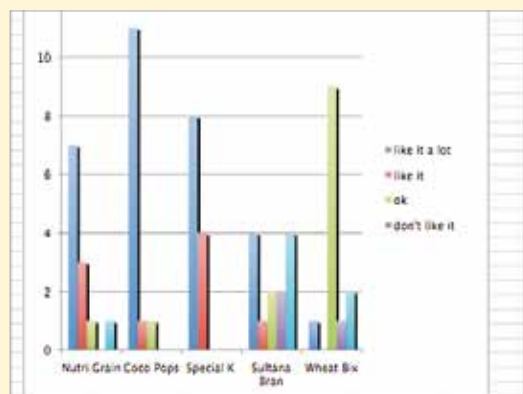
This led to an inquiry into relationships. Students role played different types of behaviours when dealing with others. Defensive, aggressive, assertive and submissive were some of the subject specific words used. Students then worked 1-to-1 on PCs using Microsoft Publisher to create network maps exploring positive friendships, emotional health and body image. Throughout the various scientific enquiries, students continually updated their journals with any new findings.

"Students really wanted to talk about, share and demonstrate their learning – particularly at the interactive whiteboard."

Cheryl Ross, ESL teacher
Richmond Primary School, SA

Students using Microsoft® Office Excel® to graph the nutritional value of breakfast cereals.

Student engagement

The engagement of students was high and this was reflected in their achievements. "When students are learning English in an intensive way, they are relying constantly on their auditory skills," said Cheryl. "Without visual support – and kinaesthetic when moving and using digital tools – they tire and lose focus through the day." In this way, 1-to-1 access to computers and a variety of different applications help retain student interest. It also gave them the opportunity to individually create their own resources.

Success factors

Cheryl felt the success of the unit stemmed from the ability to scaffold steps for students using digital tools and working through issues interactively on the interactive whiteboard. There was also a focus on explicit language instruction allowing students to communicate using subject specific language.

Potential improvements

Cheryl would like to introduce opportunities to make a sound track using Audacity® *(http://audacity.sourceforge.net)* or turn productive discussions into posters for the classroom using Microsoft® Paint or Microsoft® Publisher.

Top tips

Supporting students who enrol with minimal or no English at any time during the term is always a challenge. Students from Asian countries are generally used to working with computer programs whilst students from African or Middle Eastern countries less likely. The visual nature of this unit and opportunities for peer support ensures student engagement.

Pedagogy

Cheryl collaborated with a multimedia teacher to develop this unit, so that it could support ESL learning with intrinsic usage of technology. She found that two teachers working with the students brought different skills and perspectives, creating a richer learning environment. Cheryl believes this is because collaborative teaching "opens up the opportunity to share ideas to create a quality unit of inquiry for the students."

Learning spaces

Cheryl used a regular classroom with 1-to-1 computer access and an interactive whiteboard. When investigative work was underway, students visited other classes for interviews or to take photos.

Tools for learning

Cheryl's class used Internet-connected PCs, digital cameras, an Interactive Whiteboard with the following software:

Audacity® *(http://audacity.sourceforge.net/)* A superb resource for recording and editing sound. You can record live audio and edit Ogg Vorbis, MP3, WAV and AIFF sound files.

Bing™ *(www.bing.com)* A search engine that makes it easy to locate relevant Web sites, movies, images, maps and translation tools.

Microsoft® Office Excel® *(www.microsoft.com/excel)* Students can use analysis and visualisation tools to help track and highlight important data trends.

Microsoft® Office PowerPoint® *(www.microsoft.com/powerpoint)* Build professional slideshow presentations with text, graphics, animations, transition effects, embedded sound and video, and much more.

Microsoft® Paint *(http://windows.microsoft.com/en-AU/windows7/products/features/paint)* Students can create drawings on a blank drawing area or edit existing pictures.

Microsoft® Photo Story *(www.microsoft.com/photostory)* – An easy way for students to create multimedia presentations.

Microsoft® Publisher *(www.microsoft.com/publisher)* Students can create, personalise, and share a wide range of professional-quality publications and marketing materials with ease.

Wallwisher *(www.wallwisher.com)* a complimentary online noticeboard tool.

More information?

Richmond Primary: *www.richmondps.sa.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

SA Department of Education and Children's Services: *www.decs.sa.gov.au/westernadelaide/*

Government of South Australia
Department of Education and Children's Services

Digital historians

Andrew Lord at Thiele Primary School led his students on an in-depth investigation of their local community's history and helped them create engaging digital presentations.

To begin, the class brainstormed places they thought were "old" and "significant" in the local area. These included the local cemetery, an old homestead, the Happy Valley reservoir and an old mine.

One group, for example, determined that they would research the local cemetery. These students independently used the local library, interviewed parents, searched the Internet and used local historical resources to document the history of the cemetery.

A visit to the cemetery was arranged and students documented gravestones using digital cameras. Students identified relationships between the gravestones and local landmarks – the Chandler family and "Chandler's Hill", the Manning family and "Manning Road", the Sauerbier family and "Sauerbier Creek" – and researched the lives of these people and how these differed to their own lives.

The group then hypothesised about the reasons for these connections. They worked together to document any connections, taking digital photos of street signs and local landmarks.

The group used the photographs they had taken to create a storyboard and turned this into a visual presentation using Microsoft® Photo Story. Narration was also added. All sources of information were listed using the Harvard referencing system.

Student engagement

This project went down well with the students because digital technology gave them access to a wide variety of otherwise unobtainable resources. "Normally, the chances of a group of primary students being allowed access to historic materials would be fairly slim," said Andrew. "People tend to get worried about children around unique historical records. By using digital pedagogy these resources were an Internet search away and could be brought into the classroom to be used and manipulated."
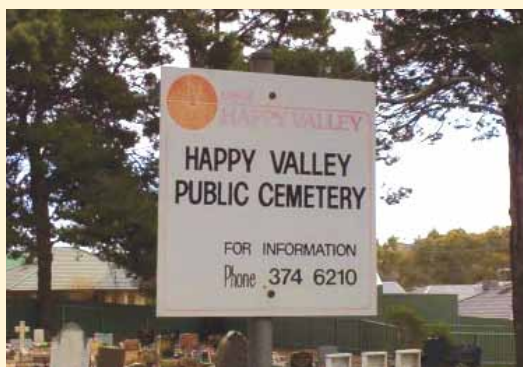
The collaborative process was also a hit. For instance, one student came along to school saying that the street across the road from her house had the same name as one of our cemetery grave stones. Andrew sent her home with a digital camera and the next morning she returned with a set of photos taken after school of street signs, gravestones, landmarks and other material. She presented this to the group and it was incorporated into the presentation.

Digital technology not only made gathering the resources much easier, it improved student involvement and engagement in the presentations.

It also allowed them to publish their work for view by a wider audience. In fact, one presentation sent to the Department of Environment and Heritage was forwarded to the Nine Network, who decided to produce "Postcards" – a program about interesting South Australian localities. The result was that a group of the students got to work with professionals to produce a five minute segment for TV about their research.

"We sent one visual presentation to the Department of Environment and Heritage, which led to a group of the students working with the Nine Network to produce a five minute segment for TV about our research."

Andrew Lord, Year 5 teacher
Thiele Primary School, SA

A still photograph from the Cemetery presentation made using Microsoft Photo Story.

Success factors

Andrew identified the following factors as instrumental in the success of the project:

Students worked collaboratively to sort the information they found.

Students delved deeper into their topics by discussing different perspectives, including those of aboriginal people.

Students worked on 1-to-1 computers to individually research information, which they shared with their group, and individually present their findings.

Planning and problem solving skills were used throughout the unit of inquiry.

Potential improvements

During the unit of inquiry lots of interesting side tracks came up which the teams did not get the opportunity to explore. Andrew elaborates: "For instance, when we found a grave that said that someone had been born in 1820 and died in 1890, it sparked many interesting questions: What world events did that person see? Why were there so many children in the graves? Why were there no aboriginal people in the cemetery? ...To extend the depth of the project some of these side paths could be explored."

Top tips

Andrew's advice is simple: get the parents onside. Parents accompanied the students to visits, parents helped students with photography at home – and some even did their own research and contributed it to the project.

Pedagogy

Andrew believes it is important to stand back and trust the students, because they can be responsible and look after expensive equipment. They can operate these tools effectively and purposefully and come up with great ideas for how to use the resources they've created.

Learning spaces

Andrew used a regular classroom with 1-to-1 computer access. When investigative work was underway, students brought digital cameras to their location of interest, accompanied by parents.

Tools for learning

Andrew's class used Internet-connected PCs, digital cameras and the following software:

Microsoft® Photo Story *(www.microsoft.com/photostory)* – An easy way for students to create multimedia presentations.

Windows® Photo Printing Wizard *(www.microsoft. com/windowsxp/using/digitalphotography/learnmore/ printphotos.mspx)* Print photos through an easy-to-use interface which lets you specify photo print sizes and other print options.

More information?

Thiele Primary: *www.thieleps.sa.edu.au/*

Microsoft Education Australia: *www.microsoft.com/australia/education/*

SA Department of Education and Children's Services: *www.decs.sa.gov.au/southernadelaide/*

Government of South Australia
Department of Education and Children's Services

Student Directed Learning

Prioritise the top three resources from the list below that you are most likely to try in the next two weeks. How might you use them in the classroom?

Challenge your students to write their own activity and try it with their classmates!

Here are some ideas for your students:

ABC
www.abc.net.au/dustechoes/

Studying Australian History?

Read, watch and listen to Indigenous stories.

BBC
www.bbc.co.uk/cbbc/bamzooki/

Studying Internet safety. Discuss the issues and create a 'zook' as one way of keeping your identity private on the Internet. Download the free 'zook kit' and create your own character. Compare your 'zook' to those created by others!

BBC
www.bbc.co.uk/history/interactive/

Watch animations, videos, take a virtual tour and play games related to historical topics.

Digital cameras

Take lots of photos of your school (both inside and outside) and then import them into a multimedia application. You can also provide narration about your school and include special effects into your movie. What a fun way to show your family your school.

Record experiments and processes from your Science class.

Need to do a presentation? Use the digital camera to record your presentation. You can research, practise and record your presentation, and even re-record and share it with others. How creative can you be?

Digital images – See Think Wonder
http://research.microsoft.com/en-us/um/ cambridge/projects/autocollage/

Create an AutoCollage.
Microsoft® AutoCollage is available as a free full download from the Partners in Learning Network at *www.partnersinlearningnetwork.com*

Microsoft® Encarta® Premium 2008

Use this encyclopedia resource to support your understanding of current topics, search for famous people and events, or track information on a timeline across the ages.

Microsoft® Office Excel®

Use Office Excel's spreadsheet to create a timeline about key events in Australia's history, or the key events in your life. Use some of the graphic tools, and enter and format text.

Use Office Excel to create a shopping list for a recipe you will prepare. Include the ingredients and amounts of each ingredient you need, and then find out the costs of each ingredient. Learn how to enter formulas to calculate the cost of your recipe.

Create a spreadsheet that contains details about what homework you have to do.

Five-shot sequence

Use digital cameras to take five shots. Download the photos and sequence them to tell a story. Encourage students to use different camera angles to express the emotion within the story.

Imagine strange things happening in the world – what if?

Ask the question "What if …?" Use your imagination and see things in totally new ways. It's a game that anyone can play.

Choose a "What if" from the following list and then write, draw a picture, or create a photomontage showing how life would be changed by this new condition.

What if …

• it rained tennis shoes everyday?
• everyone looked the same?
• animals had people for pets?
• you had a dragon for a next-door neighbour?
• cows could fly?
• people were magnetic?
• everyone lived on their own island?
• the oceans were made of chocolate pudding?
• everyday at 2:00 pm gravity went haywire for minutes?
• nothing could be thrown away?
• works of art came to life?
• all the art in the world was stolen by aliens?

Inside a Dog
www.insideadog.com.au

Read and write book reviews at the State Library site 'Inside a Dog'.

Microsoft Student
www.microsoft.com/student/en/US/default. aspx

This resource offers tools to support homework, including Maths, Science and Languages. Explore!

National Geographic
www.nationalgeographic.com/xpeditions/ hall/index.html

Want to go on an adventure? Visit the interactive museum that takes you on geography journeys. Here you'll climb a mountain, hover over the Earth, speed across Europe, visit an archaeological dig, and even order sushi

Photo editing

Take a photo of a leaf and use the image editing features in GIMP to crop, recolour, resize etc.

Powerhouse Museum's Photo of the Day
www.powerhousemuseum.com/ imageservices/

The Powerhouse Museum's Photo of the Day blog features a new image each day, chosen from the Powerhouse Photo Library. View the image and write a caption to match the image. Share the captions with other students in the class.

Microsoft® Office PowerPoint® animation

Did you know that you can use Office PowerPoint to animate by using automatic transition between slides? Experiment. Demonstrate a rocket taking off using Office PowerPoint.

Premier's Reading Challenge
www.education.vic.gov.au/prc/students/ default.htm

Keep an up-to-date log on the books you have been reading and keep a record card of all the books you have been reading.

Using Microsoft® Office Excel® spreadsheets and graphs

Doing an experiment in one of your classes and collecting data? Put the data in a spreadsheet and communicate it visually in professional-looking graphs – it could be a bar, line or pie graph. It's up to you!

VoiceThread
www.voicethread.com

Use Excel's spreadsheet to create a timeline about Upload photos and sound bytes to VoiceThread, use a microphone to add your voice and commentary. Your presentation can be shared with others through the Internet!

Voki
www.voki.com/

Create a Voki character and record your voice. You could share your learning goals or explain a task. You can use your Voki as an 'avatar' (picture of 'yourself') and also embed a Voki in a blog or Wiki.

Create two Voki characters that you use as an 'avatar'. One that you think your classmates will identify as you and another character that you do not think your classmates will identify as you. Get the class to identify who the Voki characters belong to and provide reasons for their choice.

Reflective Questions

- How do I involve students in the curriculum planning process?

- What suggestions have my students made with regard to the use of digital tools for learning?

- How can I build future home-school partnerships using the devices that will extend students' classroom learning?

The cool stuff

Software you may not have heard of, but that your students will love.

Microsoft® AutoCollage

Photo collages celebrate important events and themes in our lives. They are great for digital storytelling, presenting themes, starting discussion and much more. Schools use collages to summarise camps, sports days, performances and other events.

Microsoft AutoCollage allows you to create an exciting photo collage in moments.

Pick a folder, press a button, and in a few moments AutoCollage presents you with a unique memento to print or email to your family and friends. Microsoft AutoCollage makes face detection, saliency filters, and other Microsoft research identifies interesting parts of pictures. Advanced object selection and blending

Download* it today:
http://www.partnersinlearningnetwork.com

Only works on Windows®

Microsoft® Chemistry Add-in

This is something that every chemistry student (and teacher) is going to love. If you're not a chemistry teacher, be sure to forward this on.
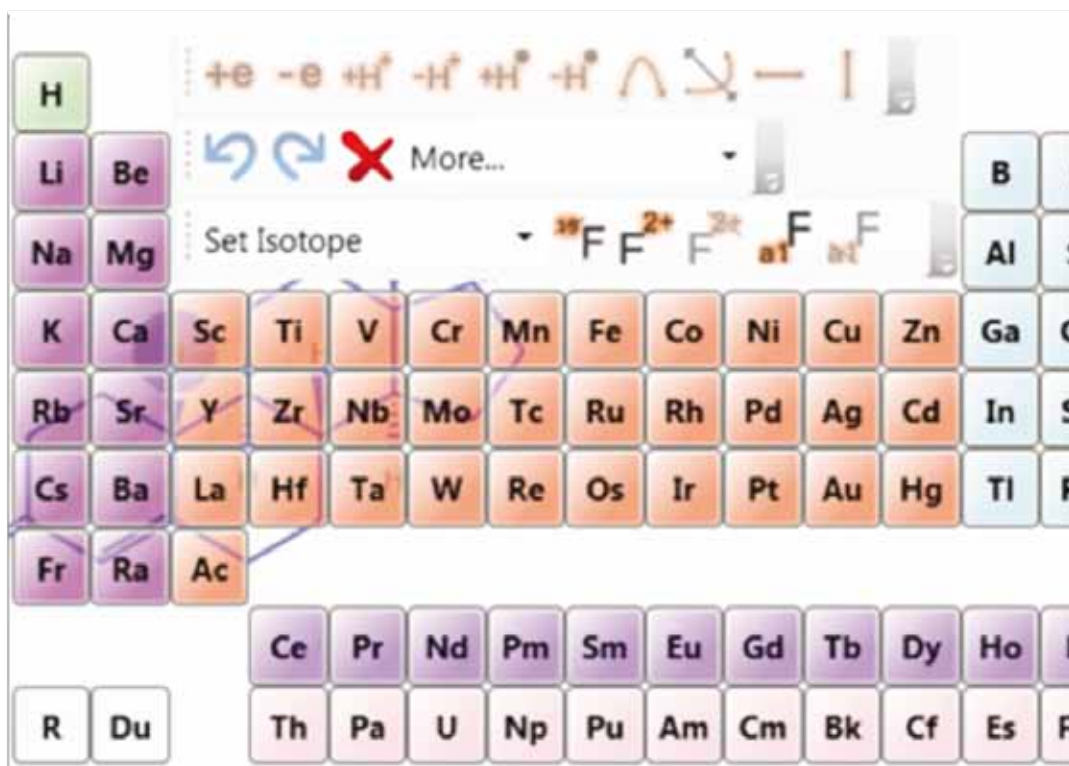
The new Microsoft Chemistry Add-in for Microsoft® Office Word– *http://research. microsoft.com/en-us/projects/chem4word/* – was developed in partnership with the Unilever Centre for Molecular Science & Informatics at Cambridge University.

Chem for Word (as it is affectionately being called) allows you to easily author and explore chemical information from within Microsoft Office Word documents. It provides the discipline-specific language essential to scientific research, which allows chemistry symbols and conventions to be used and manipulated with staggering richness.

Try it today: *www.educationlabs.com/projects/ chemistryadd-in/Pages/default.aspx*

Only works on Windows®

Kodu™

Kodu is a powerful visual programming language that allows anyone to build an exciting, 3D game in minutes. Students as young as 7 years are already building games for the PC or Microsoft® Xbox® 360 and learning valuable skills in the process.

Skills include problem solving, understanding audience, programming and algorithms, concept design, audience investigation, teamwork and collaboration and much.

The Victorian Department of Education and Early Childhood Development has deployed Kodu in an extensive pilot program across 26 of its schools. For the last few months it has been measuring students' levels of engagement in the program and you can see some of the results here at Planet Kodu *(http://www.planetkodu. com/)*.

Here's what some of the teachers had to say:

"The creativity and critical thinking the students have shown has been wonderful."

"Kodu allows students to make games and worlds but the students need to find out how to do it by themselves."

"The things that are worthwhile are usually challenging and Kodu is certainly challenging but our kids have taken on the challenge."

"Some students discovered talents that they didn't know they had."

"I've learnt that game based learning can be really powerful."

Download* your complimentary copy now at: *http://research.microsoft.com/en-us/projects/ kodu/*

Only works on Windows®

*Download fees and charges may apply as set by your Internet service provider.

Microsoft® Ribbon Hero™

Imagine if you could increase student productivity while using all the benefits of game-based learning. That's the idea behind Ribbon Hero – a complimentary download that you can use in your classroom straightaway.

Ribbon Hero is an add-in for Microsoft® Office Word, Microsoft® Office PowerPoint® and Microsoft® Office Excel® 2007 and 2010, designed to help boost Office skills and knowledge while you are playing a game. This idea makes the quest for increased productivity a competitive and compelling game (scores can be automatically published on Facebook).

The heart of Ribbon Hero is a set of challenges that users play right in the Microsoft Office applications. These challenges expose users to features that they might not be aware of and that can help them get their work done faster.

Ribbon Hero does some analysis of the person's usage patterns to prioritise the order in which it presents challenges.

Download* it today at: *www.officelabs.com/ Pages/ConceptTests.aspx*

Only works on Windows®

*Download fees and charges may apply as set by your Internet service provider.

WorldWide Telescope

WorldWide Telescope (WWT) enables your computer to function as a virtual telescope, bringing together imagery from the best ground and space-based telescopes in the world. Explore the planets, the moons, the stars and their relationships like never before.

Speed up time and watch the rotation of the planets around the sun. See first hand how rotation effects seasons, night and day and much much more. Stand on the moon, or on Mars, with vast panoramas created by actual photos and footage.

Create narrated guided tours of planets, solar systems, nebulae and other interesting places in the sky.

WorldWide Telescope will will inspire young people to explore astronomy and science, and help researchers in their quest to better understand the universe.

Start exploring today:
http://www.worldwidetelescope.org/Home.aspx

Only works on Windows®

Online resources

Getting creative

www.digitalfilms.com – Create digital films online, requires email registration.

www.fluxtime.com/animate.php – Create your own animation.

www.voki.com/ – Requires registration with email, create a speaking avatar.

www.doppelme.com/ – With DoppelMe you can create a cool graphical likeness of yourself, your friends, your family or any group of people for use as an avatar in forums, instant messenger, blogs and almost anywhere else on the Web.

Professional learning links

www.aalf.org – Join The Anytime, Anywhere Learning Foundation, which is committed to making anytime, anywhere learning a reality for all students. Members are part of a professional network with access to research and resources that help create strong 1-to-1 technology environments for students.

www.go2web20.net/ – Search and discover Web 2.0 tools.

http://globalteacher.org.au/ – This site provides an opportunity for you to join global projects with students and classes from around the world. It also provides insightful columns, teacher resources and you can post your own or your class blog here.

www.microsoft.com.au/partnersinlearning – The Partners in Learning Web site showcases the range of professional development offerings from Microsoft as well as the Innovative Schools and Innovative Teachers programs.

www.teachers.tv/ – Teacher's Television: get a TV experience on your computer. Watch themed videos selected to match your interests, including great lesson ideas and inspiring documentaries.

www.ted.com/ – TED: ideas worth spreading, riveting talks by remarkable people, free to the world.

www.tigweb.org/ – Taking It Global: Inspire Inform Involve. Join the largest online community of youth interested in global issues and creating positive change.

www.treadwell.co.nz/ – Complimentary, high-quality resources to make life easier for teachers.

www.schoolkit.com/ – Products designed to equip you with a learning framework and pragmatic strategies for embedding technology into your curricula and instruction.

Government links

www.acara.edu.au/default.asp – The Australian Curriculum, Assessment and Reporting Authority (ACARA).

www.mceecdya.edu.au/mceecdya/ – Ministerial Council for Education, Early Childhood Development and Youth Affairs.

http://naplan.edu.au/ – National Assessment Program Literacy and Numeracy.

http://www.thinkuknow.org.au – Register for a presentation or further information from ThinkUKnow (TUK). TUK is an Internet safety program offering interactive presentations to teachers via primary and secondary schools across Australia, using a network of trained volunteers from the Australian Federal Police. Topics cover cyberbullying, social networking, mobile technologies and gaming.

http://www.cybersmart.gov.au – The Australian Communications and Media Authority Web site has been set up by the Australian Government's online security initiative to help kids, parents and teachers stay safe online and help fight against cyberbullying.

Reflective Questions

• What existing online resources and tools am I aware of that can support a 1-to-1 environment?

• Which technologies are my students using outside school that I could use to extend their learning? How can I find this out?

• How can I find out more about the range of digital tools available online?

Education Resources and Programs

Microsoft

Microsoft Partners in Learning Education Resources and Programs

Download or visit to access these Microsoft resources for your classroom at no charge.

Amazon Kindle® for PC	Find out everything you need to get started with Amazon Kindle, from compatibility and installation, to registration and paying for downloads.	*http://www.amazon.com/gp/help/customer/ display.html/ref=hp_pcland_stinst?nodeId=200450200&#installing*
Microsoft Australia Education Web site	Solutions and products that Microsoft Australia offers for education, connecting you with resources to help you get the most from existing ICT investments.	*http://www.microsoft.com/australia/education/ default.aspx*
Microsoft® AutoCollage	Create photo collages with your students to use as posters, covers for projects or mementos of school outings. All they have to do is pick a folder, press a button, and in a few minutes AutoCollage creates a collage.	To download the trial version*: *http://research.microsoft.com/en-us/um/ cambridge/projects/autocollage/* To download* a complimentary full version of AutoCollage for your school: *http://partnersinlearningnetwork.com*
Bing™ Maps	This is a great way to make history or geography come to life. Simply select a location and explore cities at eye level and in 3D. Download Microsoft® Silverlight® for a richer experience.	*http://bing.com/maps/explore/*
Microsoft® Chemistry add-in	Empowering students, teachers and chemists to easily author documents in the language of chemistry.	*http://www.educationlabs.com/projects/ chemistryadd-in/Pages/default.aspx*
Microsoft® Digital Literacy	Teach and assess basic, everyday computer concepts and skills. Choose from three course performance levels: Basic, Standard and Advanced.	*http://www.microsoft.com/about/ corporatecitizenship/citizenship/giving/programs/ up/digitalliteracy/default.mspx*
Microsoft DreamSpark™	DreamSpark is simple; it's about giving students Microsoft professional tools at no charge.	*http://www.dreamspark.com/*
Microsoft® Education Labs	Explore and try out prototypes and ideas that have been developed by community members and Microsoft product teams for the education sector. This is your opportunity to provide feedback and help to design the technology of the future.	*http://www.educationlabs.com/pages/default.aspx*
Microsoft Educators Web site	Teacher guides, complimentary software applications and online resources as well as news and teacher blogs.	*http://www.microsoft.com/education/teachers/ default.aspx*
Microsoft® Faculty Connection	Training resources, software and tools, news, publications and downloads.	*http://www.microsoft.com/education/ facultyconnection*
Microsoft® Flashcards	Flashcards is a Microsoft® Silverlight® Web application where you can create, share, and study online flashcards. Find a deck in the community, or create your own.	*http://www.educationlabs.com/projects/ flashcards/Pages/default.aspx*
Imagine Cup	The Imagine Cup is the world's premier student technology competition, open to H.S students. Every year, the Imagine Cup encourages students from all around the globe to come up with creative ideas using technology to help solve the world's toughest issues. Students are rewarded with prizes including an all expenses paid trip to the world finals and much more!	*http://www.imaginecup.com*
Microsoft® InkSeine	InkSeine is a prototype ink application from Microsoft Research. It is designed from the ground up to have a user interface uniquely tailored to pen input.	*http://research.microsoft.com/en-us/um/ redmond/projects/inkseine/*
Microsoft Innovative Schools	Resources, expertise and technology for schools.	*http://www.microsoft.com/australia /education/schools/partners-in- learning/innovative-schools.aspx*

Microsoft Innovative Teachers	A site dedicated specifically for inspired teachers. Find out how you can become involved in the Innovative Teacher program.	*http://www.microsoft.com/australia/education/schools/partners-in-learning/innovative-teachers.aspx*
Microsoft Interactive Classroom	Create in-class polls and share them over a wireless network in real time. Plus share notes and content with students during lessons using Microsoft® OneNote®.	*http://www.microsoft.com/downloads/en/details.aspx?displaylang=en&FamilyID=d93f4cb5-e2bb-4543-a3bb-cd6a8ecb42cc*
Microsoft IT Academy	Subscribe your institution to comprehensive IT training, resources and Microsoft certification opportunities.	*www.microsoft.com/education/msitacademy/default.mspx/*
Kids Corner	A great site for your students with fantastic tips and tricks, answers to all kinds of questions, kids' courses and a secure place to connect with other students.	*http://msdn.microsoft.com/en-us/beginner/bb308754.aspx*
Kodu™	Kodu is a new visual programming language made specifically for creating games. It is designed to be accessible for children and enjoyable for anyone. The programming environment runs on the Microsoft® Xbox® or PC, allowing rapid design iteration using a game controller (or keyboard) for input.	*http://fuse.microsoft.com/kodu*
Learning Content Development System (LCDS)	Create and publish high-quality, interactive, online courses including interactive activities, quizzes, games, assessments, animations, demos and other multimedia.	*http://www.microsoft.com/learning/en/us/training/lcds.aspx*
Microsoft® Live@edu	Complimentary hosted email, calendars, online work spaces, instant messaging and more for everyone in your school.	*http://www.microsoft.com/liveatedu/*
Microsoft Live Labs Pivot	Visit this site to see interesting ways of displaying information to inspire your students.	*http://getpivot.com*
Marvin	A multimedia and animation tool that lets students create animated stories using avatars.	*http://www.marvin.com.au/*
Microsoft Mathematics	Plot graphs in 2D and 3D, calculate numerical results, solve equations or inequalities, and simplify algebraic expressions in Microsoft Word® and OneNote®.	*http://www.microsoft.com/downloads/en/details.aspx?displaylang=en&FamilyID=ca620c50-1a56-49d2-90bd-b2e505b3bf09*
Microsoft® Mouse Mischief™	Allows you to create Office PowerPoint® presentations that children can interact with in class using multiple mice.	*http://www.microsoft.com/multipoint/mouse-mischief/default.aspx*
Microsoft® Office Live® Workspaces	5 GB of complimentary online storage where you can share files.	*http://workspace.officelive.com/*
Microsoft Partners in Learning Network	Join the global community of educators who value innovative uses of information and communication technology that improve learning outcomes. Collaborate with like-minded colleagues; participate in discussions and access lesson plans, tools and more.	*http://partnersinlearningnetwork.com*
Microsoft® Photo Story	An easy way for students to create multimedia presentations.	*www.microsoft.com/photostory/*
Microsoft® Photosynth®	Students can reconstruct a scene or an object in 3D from photographs and publish it over the Internet.	*http://photosynth.net*
Microsoft® Pro Photo Tools version 2	Find the tools for editing metadata in photographs including latitude, longitude and other location details.	*http://www.microsoft.com/downloads/en/details.aspx?familyid=184075d2-40b5-4172-88ae-878f81896d4d&displaylang=en&tm*
Microsoft® pptPlex	This complimentary download* works with Microsoft® Office PowerPoint® to let you zoom in and out of slide sections and move directly between slides that are not sequential in your presentation.	*http://www.officelabs.com/projects/pptPlex/Pages/default.aspx*
Microsoft® Ribbon Hero™	A game for Office Word, PowerPoint, and Excel® 2007 and 2010, designed to help you or your students boost your Microsoft Office skills and knowledge in a fun way.	*http://www.officelabs.com/projects/ribbonhero/Pages/default.aspx*
Microsoft® SeaDragon®	SeaDragon allows you to zoom in and pan around any image on the Web. Just give us the URL to an image on the Web.	*http://seadragon.com*
Microsoft® Security Essentials	Provides real-time protection for your home PC that guards against viruses, spyware, and other malicious software. Always kept up to date and it's easy to tell if your PC is secure — when you're green, you're good. It's that simple.	*http://www.microsoft.com/security_essentials/*

Microsoft®

Microsoft® Songsmith®	Songsmith generates musical accompaniment to match a singer's voice. Just choose a musical style, sing into your PC's microphone, and Songsmith will create backing music for you. Then share your songs online, or create your own music videos.	To download the trial version*: *http://research.microsoft.com/en-us/um/redmond/projects/songsmith/* To download* a complimentary full version for your school: *http://partnersinlearning network.com*
Microsoft® TeacherTools	How to's, templates, tutorials and lesson plans plus a teachers' network where you can connect with others.	*http://www.microsoft.com/australia/education/teachertools/*
Microsoft® Touch Pack for Windows® 7	This site offers a collection of Microsoft games and applications for your multi-touch PCs and laptops running Windows 7 including Surface Globe, a program that you can use to explore the earth as a flat 2D or immersive 3D experience.	*http://www.microsoft.com/downloads/en/details.aspx?FamilyID=b152fadd-82e4-4ddb-a46a-aebe49944428&displaylang=en*
Microsoft® Worksheet Generator	Create your own maths worksheets in minutes. You can generate multiple maths problems based on a sample – from basic arithmetic through to algebra.	*http://www.educationlabs.com/Projects/MathWorksheetGenerator/Pages/default.aspx*
MSDN AA	MSDN Academic Alliance is a faculty-based subscription providing teachers and students access to a comprehensive range of Microsoft tools, including, Windows 7, VS2010, Expression® 4, Windows Server® and much more.	Sign up and take advantage today! *www.msdn.microsoft.com/en-au/academic*
Windows Live® Essentials beta	Free beta versions of Microsoft programs for photos, movies, instant messaging, email, blogging and more. Get them all in one easy download.*	*http://explore.live.com/windows-live-essentials-beta*
Windows Live Mesh 2011	Sign up for this complimentary service that lets you synchronise files across your work computer, laptop, Mac® or PC and mobile phone so you always have the latest version handy.	*http://www.mesh.com*
Windows Live® Messenger	Easily connect to other teachers via video, text or voice.	*http://explore.live.com/windows-live-messenger?os=win7*
Windows Live® Movie Maker	A fast, easy way to turn photos and video clips into great looking movies and slideshows that you can share with students, other faculty or on the Web.	*http://download.live.com/moviemaker*
Windows Live® Photo Gallery	This complimentary download* lets students load photos and videos from a camera to their PCs. They can also crop, recolour and retouch their photos and create impressive panoramics.	*http://download.live.com/photogallery/*
Windows Live® SkyDrive®	25 GB of complimentary storage so your students don't need a USB. Sign up using your Windows Live® ID.	*http://skydrive.live.com*
Windows Live® Writer	A complimentary blogging tool for students. They can share comment, photos and videos on almost any blog service: Windows Live®, WordPress, Blogger, LiveJournal, TypePad, and many more.	*http://download.live.com/writer*
Windows Media® Center	Turn a classroom PC into a TV, where you can play videos and music.	*http://www.microsoft.com/windows/windows-media-center/default.aspx*
Windows® PowerToys	PowerToys are additional programs that developers work on after a product has been released to manufacturing. They'll add fun and functionality to your Tablet PC experience.	*http://www.microsoft.com/windowsxp/downloads/powertoys/tabletpc.mspx*
WorldWide Telescope	This amazing virtual telescope brings together imagery from ground and space telescopes from around the world, so students can explore the galaxy, the solar system, the planets and their moons.	*http://www.worldwide telescope.org/Home.aspx*

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