

This newsletter and the Secondary Student Achievement Professional Learning and Development initiative is funded by the Ministry of Education. The providers are The University of Auckland and Te Tapuae o Rehua consortium.

# National Newsletter: Technology

Information and resources for middle leaders in secondary schools | Term 2 2015

Kia ora, Tālofa lava, Mālō e lelei, Kia orana, Bula vanaka, Fakaalofa lahi atu, Talofa ni, greetings to you all.

Welcome to the term two newsletter. In this issue we cover:

- Latest news
- 2015 national technology workshop reminder
- Key messages about the level 3 DVC ideation standard
- Top scholars in technology and DVC
- E-learning and pedagogy in the technology classroom
- Key messages about the technology externals

Ngā mihi nui  
Malcolm and Cheryl  
National Co-ordinators – Technology

## Latest news

### 2015 Technology national workshop

There will be one national technology workshop in 2015 repeated in a number of venues around the country. This workshop is intended for HOFs, HODs, TICs, and 2ICs. Topics covered will include junior programmes and assessment, NCEA key messages, and developing critical and creative thinking through technological literacy. For a list of dates, venues, and the process to register please see page four of this newsletter.

### Teaching and learning guides for technology

The level 7 teaching and learning guide has been published (in March this year). This guide has detailed information and ideas for teaching and learning for *all areas of technology*. The level 6 guide is due in term three this year. Look for these additions alongside the already published level 8 guide at <http://seniorsecondary.tki.org.nz/Technology>

### Change to the page limit for external reports

The page limit for reports for the externally assessed technology standards has changed from 14 pages last year to 10 pages this year. Work over 10 pages will not be marked so ensure students know this! Refer to the assessment specifications on the NZQA technology subject resources page. <http://www.nzqa.govt.nz/qualifications-standards/qualifications/ncea/subjects/technology/levels/>

### Changes affecting external assessment

The level two assessment specifications for technology were changed in March 2015 to allow 14 pages for the level two computer science standard. Note this only applies to AS91371 – the page limit of 10 pages remains for all other externally assessed standards.

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### Technology wikis

Southern Technology Wiki  
<http://southern-technology.wikispaces.com/>

Team Solutions Technology Wiki  
[technologynz.wikispaces.com/](http://technologynz.wikispaces.com/)

## Top scholars in Technology and DVC

### Top Technology scholar

Briar Patel, a Year 12 student at Aquinas College in Tauranga has been awarded Top Scholar Technology 2014. The issue she addressed was the lack of educational games for adult aged Special Needs students. Most products are ergonomically insufficient and not robust enough to sustain constant physical force. The product was an outside water play activity, designed to stimulate the senses of touch, sight and sound, in order to progress students both physically and mentally. Additionally, it had to reinforce 'cause and effect'. This was achieved in a pedestrian crossing theme where two students compete to manually pump water to fill a reservoir, that when full, sprays the opposition. The sound and lights replicate the environment of a real life crossing.

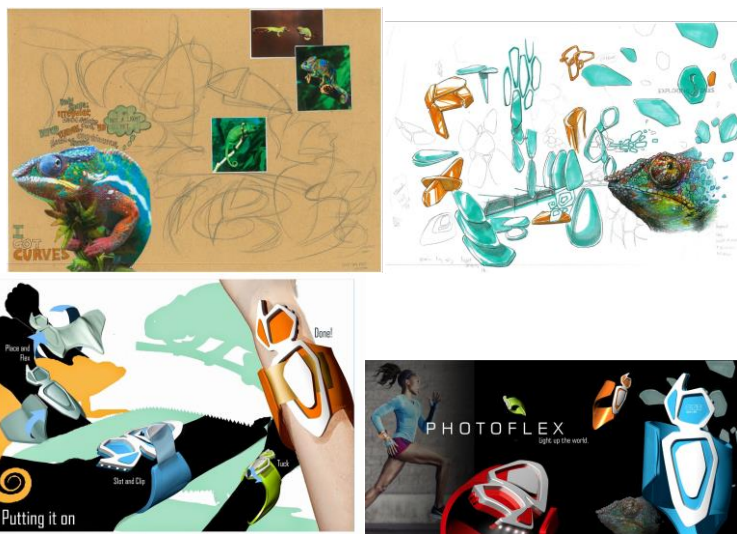


Her clients were the students and staff at Kaka Street Special School. She also had wider stakeholders in the education sector, as well as a mentor in the electronics industry. Her teacher Mr Pete Nicholson said that the challenges she faced with having to tap into experts, as well as develop several new skill-sets with such things as 3D printers and CNC machinery to develop parts, meant that her Technological experiences were vast.

### Top DVC scholar

Jane Sun Waterhouse  
Epsom Girls' Grammar School

"Jane's light product was inspired by the adaptability of chameleons. She explored the way they changed to blend into their environment as well as the way they used their tail to wrap around trees. Her Photoflex light product is aimed at having many uses in daily life. Jane aimed to create an innovative lighting product that would provide a great user experience.



Her work demonstrates outstanding ability in using sketches, models and digital media to explore, evolve and communicate her design ideas."  
Megan Dunsmore (HOD Technology, Epsom Girls Grammar).

## DVC – Ideation AS91627

The following is reproduced from the NZQA assessment report for this standard.

The following is an unpacking of the stages of student work required for this standard.

- identify an experience (or a source of inspiration): from natural and/or built landscapes, film clips, music extracts, observational drawing, conceptual modelling, photography, language devices, etc.
- select visual communication techniques: from modelling (real and/or virtual), photography, sketching, collage, tracing, etc.
- select visual communication strategies: from interpretation, abstraction, re-combination, tessellation, exaggeration, rotation, inversion, translation, translocation, deconstruction, etc.
- produce ideations from the starting experience using selected techniques and strategies. The emphasis should be on a range of interpretations and observations to meet the requirement of "interrogate".
- from the ideations produced in the previous step generate new ideations. This means that the starting ideas are abstracted from the starting experience by two steps of interrogation. They of course may still reference the starting experience but are now new (the student's) ideas.
- show the initial ideas that emerge from the ideation, this provides evidence and validates the ideation process as it provides the beginnings of design ideas.

- continue to ideate throughout your initial experimentation and initial idea generation and development phases: it doesn't have to stop.

Refer to the assessment report and annotated exemplars on the DVC subject resources page.

# E-learning and pedagogy in the technology classroom

## What is e-learning?

E-learning is part of the effective pedagogy section in the New Zealand Curriculum (2007). Because it is a term used frequently across the curriculum and education world it is vital we all understand what this means.

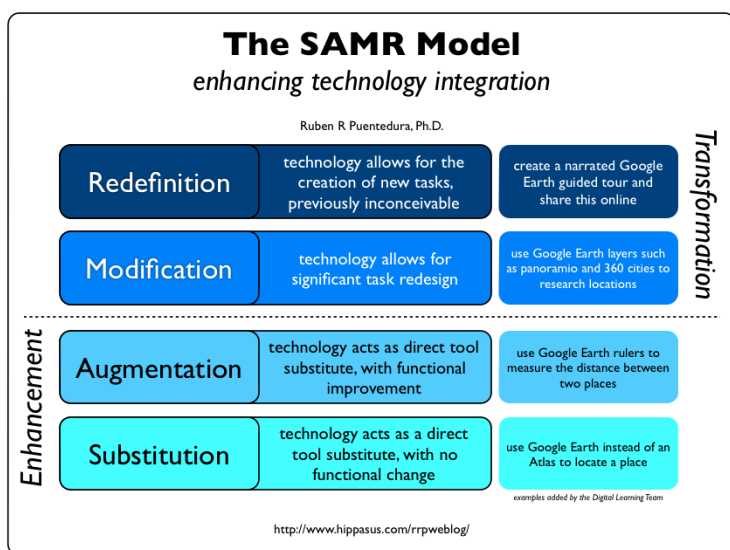
E-learning can be defined as *learning and teaching that is facilitated by or supported through the appropriate use of information and communication technologies*, (page 36 New Zealand Curriculum, 2007). In some areas now referred to as *learning with digital technologies*, not to be confused with Digital Technologies as a context within the technology learning area.

Secondly "e-Learning can cover a spectrum of activities from supporting learning to blended learning (the combination of traditional and e-learning practices), to learning that is delivered entirely online... **learning** is the vital element. E-Learning is not simply associated with modes of delivery or the functionality of a particular technology, but forms part of a **conscious choice of the best and most appropriate ways of promoting effective learning**. [http://www.elearning.tki.org.nz/About-this-site#what\\_is\\_elearning](http://www.elearning.tki.org.nz/About-this-site#what_is_elearning)

## SAMR Model (Ruben R. Puentedura)

S=Substitution, A=Augmentation, M=Modification, R=Redefinition.

But before launching into integrating tools into your classroom practices you should consider the following model of how using digital technologies (tools) might impact on the teaching and learning.



Teachers should ask themselves what the tool is being used to do and whether it is allowing for greater student engagement and creation of new and innovative ways of demonstrating understanding or simply doing the same task as before with a digital tool, that is are we enhancing or transforming tasks and practices? For example transformation of practices could look something like this:-

- Creating a podcast or YouTube clip and publishing to the web
- Creating Prezi that extends students to incorporate multimedia and publish to the web or intranet
- Use iMovie to create short dialogues about products or design and link to QR codes to websites
- Using digital portfolios and interactive design processes to consult remotely with clients

## Useful apps, tools and resources



**Trello** A collaborative planning and feedback tool using digitized notepads and task sheets. You'll know exactly what needs to get done, who's going to do it, and what's coming up next. Plus, everything you do is synced and saved instantly to the cloud, so that all your devices are always up to date.

With Trello, you can create boards to organize all tasks. Use them individually, or invite peers, and teachers to work together. Write your ideas on Trello cards and arrange them in lists on boards. Add details to cards such as:

- checklists to keep track of tasks
- comments to update your team
- photos and videos



**Forge** A digital design tool (does require a Bluetooth stylus to work effectively) to capture sketching and create fully developed portfolios of sketches on iPad

The **SAMR Model** Explained by Ruben R. Puentedura

<https://www.youtube.com/watch?v=QOsz4AaZ2k> or in 120 seconds! If you are in a hurry <https://www.youtube.com/watch?v=us0w823KY0q>

## A couple of sites to follow on Facebook and twitter

### Enabling e-learning

Enabling e-Learning is the Ministry of Education's online 'hub' for ICT-related education resources and programmes in New Zealand, bringing together everything that school leaders and teachers need to improve their e-learning practice.

<http://www.elearning.tki.org.nz/> And has a section on software for learning

<http://elearning.tki.org.nz/Technologies/Software-for-learning>

### Edutopia

Follow this educational site on Facebook or twitter for up to date usage of apps and tools and other useful pedagogical information

<http://www.edutopia.org/>

## External assessment

### Key points from assessment round 2014

The following are key points from a number of assessment reports showing general trends and issues in external assessment

- Authentic work and student voice continue to be identified across a range of standards and levels. Students must be able to demonstrate their understanding, generally using their own words about situations and contexts linked to their technological experiences (exception to the rule is systems and electronics where the standard requires students to go beyond technological experiences in some cases). Downloaded material must be identified and acknowledged as the work of another and mediated in some way to demonstrate the student understands the concepts being examined
- Use of inaccurate/ incorrect terminology and misunderstanding key concepts of the standard cause students difficulty in demonstrating clear understanding
- Descriptions being too vague, or generic and not specifically tied to the competency asked for in the standard lead to students not achieving. Contextualizing here is the key for students to demonstrate they understand key concepts
- Templates can be limiting student ability to achieve particularly if they are too generic, or do not cover all aspects of the required criteria. The converse can also be true where the template is too restrictive in its questioning and limits the student. The fill in the gap types of template generally disadvantage the students
- Poorly selected contexts, systems, products for investigation limit student achievement where the candidate cannot access the suitable information to show understanding of the concepts required
- Teachers must interact with the students and their reports to ensure authenticity and accuracy as well as providing guidance and structure. Carefully embedding the assessment context into the programme of learning early in the year give students suitable time to develop understandings and structure a report and refine this before the pressure of assessment deadlines

## The principle of inclusion: Inclusive Practice

The recent ERO report "*Inclusive practices for students with special needs in schools (March 2015)*" <http://www.ero.govt.nz/National-Reports/Inclusive-practices-for-students-with-special-needs-in-schools-March-2015> examines how well students with special education needs are included in New Zealand schools. A recent addition to resources that can support teachers to feel more confident and capable in this work is TKI's Guides for Inclusive Educators. This site presents a range of resources for Years 0-13 teachers. It includes a range of video clips demonstrating inclusive practice within a variety of school settings. Click on <http://inclusive.tki.org.nz/guides/developing-an-inclusive-classroom-culture/>

For a specific technology example of inclusive education in action see *Tegan is part of the team* at [www.throughdifferenteyes.org.nz/exemplars/tegan-is-part-of-the-team](http://www.throughdifferenteyes.org.nz/exemplars/tegan-is-part-of-the-team)



The guiding document is the ministry publication "*Success for All Inclusive Practice in Secondary Schools*". See Success for All <http://www.minedu.govt.nz/~media/MinEdu/Files/EducationSectors/SpecialEducation/Publications/Resources/InclusivePracticeSecondarySchoolsForSchoolLeaders.pdf>

## National technology workshops

The venues and dates within the regions covered by Team Solutions:

**Hamilton – 5<sup>th</sup> May**  
**Tauranga – 7<sup>th</sup> May**  
**Napier – 12<sup>th</sup> May**  
**Gisborne – 13<sup>th</sup> May**  
**Auckland (N & W) – 19<sup>th</sup> May**  
**Auckland (S & E) – 20<sup>th</sup> May**  
**Whangarei – 28<sup>th</sup> May**

### To register

To attend Auckland or Whangarei workshops, email Nicole Price at [n.price@auckland.ac.nz](mailto:n.price@auckland.ac.nz)

For the Hamilton, Tauranga, Napier, or Gisborne workshops, email Malcolm Howard at [m.howard@auckland.ac.nz](mailto:m.howard@auckland.ac.nz)

The venues and dates within the regions covered by Te Tapuae o Rehua:

**New Plymouth – 6<sup>th</sup> May**  
**Wellington - 7<sup>th</sup> May**  
**Palmerston North - 13<sup>th</sup> May**  
**Christchurch – 14<sup>th</sup> May**  
**Balclutha – 20<sup>th</sup> May**

### To register

If you wish to attend workshops in New Plymouth, Palmerston North, Wellington, Christchurch or Balclutha, go to <https://secure-www.otago.ac.nz/ess-enrolment/secondaryncea.html>

### These workshops are free

There is no cost to register as the workshop is funded by the Ministry of Education as part of its support for the Secondary Student Achievement professional development.

**Note:** Morning tea is provided. Please supply your own lunch and bring a laptop, mobile device or tablet. Materials will be available to use on the day on a data stick.