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About TENZ

Technology Education New Zealand (TENZ) is a professional network working to support and promote Technology education in New Zealand. TENZ:

- fosters the development of Technology in the New Zealand Curriculum;
- develops and maintains national and international links between Technology education professionals and with the wider technological community;
- supports professional, curriculum, and resource development in Technology Education;
- encourages research in Technology Education.
- organises a biennial national Technology Education conference.

To register for TENZ, visit www.tenz.org.nz.

Pre-conference workshop: Leading Technology in your school

This one-day workshop, held at Waipuna Lodge, Auckland, on Tuesday 2 October 2007, is designed to support technology curriculum leaders in schools in mediating the reviewed Technology Curriculum to their staff.

The workshop will cover:

- The Curriculum as a framework
- Technology's position in the New Zealand Curriculum Framework
- Components of Technology – strands and components of technology
- Achievement objectives – their role
- Indicators of Progression – what are they and what is their purpose
- Implications for leading school curriculum development and programme planning.

The workshop will be set in the context of developing middle management skills to lead the technology curriculum in your school, and will be of vital interest

to all Technology Curriculum leaders and coordinators in primary schools and Technology HoDs in intermediate and secondary schools.

This workshop is sponsored by the Ministry of Education's GIF – Technology Education Initiative and leads into the TENZ Conference. The Workshop registration fee will be discounted for those who attend the conference.

To register your interest, email niall.dinning@xtra.co.nz

TENZ Conference update

The TENZ Conference programme is almost finalised and the committee are working on the finer details – see www.tenz2007.auckland.ac.nz in early July. Early-bird registrations are available at a discounted rate until 21 August.

See page 2 for full update...

Friday 13 July – Awards nominations & Fellowship applications due

National Technology Education Awards 2007 Nominations

The National Technology Education Awards, instigated by the TENZ Trust Board with the support of IPENZ Engineers New Zealand, provide professional recognition for excellence in technology education.

The Awards will be presented at the 2007 TENZ conference in Auckland Awards will be made in four categories:

- Outstanding Contribution to Technology Education Award.
- Teacher Educator in Technology Education Award

- Subject Leadership in Technology Education Award
- Outstanding Teacher in Technology Education Award

For nomination forms, email TENZ@ipenz.org.nz. Nominations must be received by Friday 13 July.

NZ Science, Mathematics and Technology Teacher Fellowships

Applications for 2008 close on Friday 13 July 2007. To find out more, check out www.rsnz.org/awards/teacher_fellowships, phone (04) 470 5764 or email teachers.fellowships@rsnz.org

TENZ CONFERENCE 2007

Auckland
02 to 05 October

THE TENZ CONFERENCE PROGRAMME is almost finalised and the committee is working on the finer details – see www.tenz2007.auckland.ac.nz early July. Early-bird registrations are available at a discounted rate until 21 August.

If you're responsible for technology in your school, alert staff to this exciting and informative conference and encourage at least one person from your school to attend.

The conference is planned around the **new curriculum** which will be in schools early October. This is an opportunity to develop your understanding of aspects of the three strands, enabling you to go back to school with strategies to trial in your technology classes and departments. **The three strands will be the themes for the three days of the conference.** The programme has been carefully structured to maintain a balance between theory and practice, and to accommodate all sectors in the education field. The programme will ensure that all teachers, at all levels are able to take something from this to support their teaching in technology.

Industry visits have been confirmed, and include a visit that will enhance your teacher knowledge to support continued understanding of the new curriculum.

Abstracts have been received both from paper and workshop presenters. We strongly encourage you to consider presenting at the **Technology in Action (TIA)** sessions. This section of the conference offers teachers/technology educators the opportunity to present in a poster format or as a display examples of successful technology units; student's technological practice; the development of innovative and creative technological solutions (Products, systems or environments) and technological investigations related to technological practice, the Nature of Technology and Technological Knowledge. Presenters will be given two minutes to talk about their display, poster, and investigation. After this, positioned next to their poster/display, etc, they will have the opportunity to further discuss their presentations to the delegates.

Do take the opportunity to take part and to network with colleagues from around the country and further afield. Along with opportunities to share and learn there is an exciting social programme for all.

Further details will be online however we do encourage you to book for the conference dinner when you register.

Website: www.tenz2007.auckland.ac.nz

Where's Wendy?

...at the International PATT (Pupils Attitudes to Technology) conference hosted by the Faculty of Education at the University of Glasgow, that's where!

From 21-25 June TENZ National Council Chairperson, Wendy Fox-Turnbull and at least 10 other teachers and teacher educators from New Zealand will be in Scotland rubbing shoulders with "some of the greatest names in the philosophy and sociology of technology" – people who have recently been published in a book called "Defining Technological Literacy". The conference is in two parts. The first two days will be devoted to Keynote speakers who will talk on their chapters in the book. A critique will follow, by a second speaker who will place the concepts in a technology education classroom setting.

The second part, taking up the last three days, will concentrate on the delivery of conference papers. These will address aspects of teaching and learning in technology education concerned with methods of teaching and learning technological literacy in the classroom.

All papers accepted for presentation will be published electronically. Authors of selected papers will be invited to work their papers up into chapters for submission in a book, to be published in 2007, based upon the conference theme. The PATT conference is followed a few days later by The 6th CRIPT International Primary Design and Technology Conference in Birmingham, UK.

Wendy has her pencil sharpened and will be reporting on her conference experiences in the next issue of t-news.

New Curriculum support website

“The feedback process through 2006 clearly identified the major concerns from the wider sector regarding technology and these concerns sit alongside the general high levels of support nationwide for the direction of both The New Zealand Curriculum Draft for consultation and the technology draft curriculum. The Technology Writing Group has done an excellent job listening to and checking the feedback, identifying the main recommendations and then seeking to refine and incorporate these into the document in a way that both clarifies the technology curriculum yet maintains its developing direction.” – Geoff Keith, Ministry of Education

Upon release of the finalised New Zealand curriculum, support for technology will include a package of support materials online at Techlink (www.techlink.org.nz) and hopefully on TKI. This will be in the form of an interactive website with hyperlinks between achievement objectives, indicators of progression, explanatory papers and case studies of current practice.

The first phase of this will coincide with the release of the curriculum, most likely in September or October 2007.

The website will include the following:

1. Explanatory papers – one for each of the eight components across the three strands

These are clear descriptions of each component, suggested examples from technology, and suggested learning experiences with a discussion of what student achievement might look like at different levels within different contexts.

2. Draft Indicators of Progression papers: One for Technological Knowledge and one for the Nature of Technology

This work was developed from the Ministry of Education contract for research into the two new strands, 2005-2007.

Each paper looks at the components within the strand, and provides indicators of how these may progress from level 1-8. This progression is based on the achievement objectives of the curriculum.

Each paper includes a component description (and a cross reference/hyperlink to the explanatory paper), and a description of possible supporting learning environments that might assist student achievement at each level.

The indicators and supporting environment descriptions for Technological Knowledge and the Nature of Technology are in draft. These will be trialled and revised as part of a three-year research project funded by the Ministry of Education.

3. Indicators of Progression paper: Technological Practice

This work was developed by Compton and Harwood, from research undertaken during 1999 – 2003, and has resulted in a set of indicators for each of the components of technological practice. This work has been made available to support the reviewed technology curriculum.

4. Discussion Document – Background Information on the New Strands

This paper has been written to explain the thinking behind the two ‘new’ strands (Nature of Technology and Technological Knowledge) that have been developed as a part of the reviewed technology curriculum.

5. Discussion Document - Design Ideas for Future Technology Programmes.

This paper suggests a set of principles that could underpin programme design within schooling in keeping with the direction of technology education. This paper supports programme design within schooling that is in keeping with the aim of technology, that of developing a New Zealand student technological literacy that is broader, deeper and more critical in nature.

6. Best practice case studies

The best practice case studies on the Techlink website will be continually added to over 2007. These case studies are of student work, teacher practice and programmes and industry practices in technology.

7. Papers giving guidance to schools for delivery of technology programmes based on the new curriculum

This guidance will include implications for primary, intermediate and secondary schools regarding the form and function of quality technology programmes.

As this advice needs to be in line with general guidelines from the Ministry of Education it is likely that these will be developed later in 2007 or in 2008.

Call for feedback

Geoff Keith invites further feedback as to what other support for the technology curriculum might be useful for schooling further down the track. Email Geoff at geoff.keith@minedu.govt.nz

Techlink update

A page to keep you informed of new developments on the Techlink site – the website dedicated to providing resources for Technology teachers and celebrating achievement in the classroom and beyond!

Student Showcase...

A call for submissions

Do you have an enthusiastic student who has produced an excellent project? Would you like their work recognised and celebrated? Are you interested in helping to lift your school's profile?

Techlink is looking for teacher submissions to add to the Student Showcase. Submissions are open to all schools and students of any year.

All that is required is a brief summary of the project highlighting why it was excellent and how the student showed great technological practice, two or three good quality photos, and signed Techlink permission forms allowing publication.

Our Techlink writers are responsible for shaping the final editorial so you need not be concerned over writing, just supplying the project particulars and being available for possible further comment. An outline on how draft Student Showcase submissions can be made is available at www.techlink.org.nz/student-showcase/resources/Student-Showcase-submission-brief.pdf

The Student Showcase site has received over 7,500 visits in the last three months and has been popular not only with teachers, but also tertiary providers, students, and parents. The site has been noted as helping to lift the profile of schools and technology education. Some Student Showcase entries have gained media attention resulting in published articles in local and national newspapers or magazines.

For more information contact Nick Maitland at nmaitland@techlink.org.nz

New case studies include...

Product Technology Course

*Year 12/13 Composite class
Taraunga Boys College*



Students selected their own client and product to develop, helped by case studies outlining processes of already successful products. Time was spent in the ICT suite to enable students to effectively manage their process and provide evidence for NCEA assessment.

Read more at www.techlink.org.nz/GIF-tech-education/beacon-practice/Materials/BP638-product-technology-course/background.htm

Product Development

Year 11, Tauranga Boys College

The focus of this unit was considering the reality of product development and the stages from concept through to commercialisation of a product. Teacher Colin Lawrence used experiences from his own product development, a toilet using much less water than that of a conventional toilet, as an example of the various stages in the process.

Read more at www.techlink.org.nz/GIF-tech-education/beacon-practice/Materials/BP639-product-development-technology/background.htm

New Student Showcases include...

Mosaic Seat

*Kelly & Selena,
Year 11 Materials
Gisborne Girls High School*



Kelly and Selena chose to develop matching projects to celebrate the school's 50th anniversary, a mosaic patterned bench seat and table for the school grounds. Read more at www.techlink.org.nz/student-showcase/materials/kelly-selena.htm

Soy Yoghurt

*Samantha Eagle, Year 12 Food
Technology, Tararua College*

Samantha investigated if a yoghurt product made with the soy powder could be developed for her client, Hansells NZ Ltd.

Read more at www.techlink.org.nz/student-showcase/food-and-biological/samantha.htm

Online Exam for Year 10

*Sam Archer, Year 13 ICT
Wellington High School*

Sam's created an online test within a secure environment that enabled instantaneous notification of results to teachers and students, eliminated possible cheating, and avoided large amounts of photocopying.

Read more at www.techlink.org.nz/student-showcase/ict/sam.htm

Non-ice Curling Stone

Kyle Van de Pas, Year 11, St John's College

Kyle chose to develop a new kind of curling stone - one that would behave on the gym floor like a flat stone does on ice.

Read more at www.techlink.org.nz/student-showcase/materials/kyle.htm



6th Annual Kids Conference 2007

The 6th Annual Kids Conference is to be held at Victoria University's Karori Campus on Donald Street, Karori over two-and-a-half days – from Wednesday 22 August through to Friday 24 August.

The Kids Conference provides an opportunity for Years 5-8 children with special abilities (or children with high motivation and enthusiasm) to attend a wide range of 50-minute practical workshops and presentations.

These are delivered by experts in their fields including scientists and technologists, lawyers, veterinarians, musicians, professors, doctors, authors, CEOs, business people, chefs, accountants, army personnel, graphic

designers, web authors and many other professional and highly skilled people.

Last year was a huge success with over 200 experts delivering 200+ workshops to 360 children. This year is expected to be even better with more experts and the addition of more technological wizardry.

For further information, or if you are able to register as an expert and offer to present please contact Nik Edwards, Deputy Principal, Raumatī South School, email office@raumatisouth.school.nz



Those were the days...

What exactly is this thing being unloaded from a PanAm plane?
(Answer at the bottom of page 7)

'Hot Science' videos

www.hotscience.co.nz contains a number of short videos of interest to technology teachers at all levels. Here are a few that are well worth a look.



Bridging the Gap – An five-minute video on the seven major bridges planned for the Orewa to Puhoi motorway extension produced by Orewa College students Melina Fiolotakis, Natali Henderson, Jina Rhou and teacher Andrew Nyhoff – see www.hotscience.co.nz/video_detail.php?Videoid=60

Alternating Currents - From the lake to the light bulb, Alternating Currents documents New Zealand's use of power.

Navigation using Dead Reckoning

– How Cook used dead reckoning with a compass, how he knew the ship's speed, how he was 'the navigator of navigators'.

A Debate, Makara Wind Farm – The small town of Makara is in the midst of a controversy over the placement of 70 wind turbines in the nearby hills. Will the noise pollution outweigh the benefits of clean green wind energy?

The Kaituna Dam Proposal – Should a dam be built on the Kaituna River in the Bay of Plenty? This video weighs up the pros and cons of its development.

Global Warming: Modern Atlantis– A New Zealand look at just how climate change is already affecting us. A report on three small towns on the East Coast of the North Island - what these communities are facing now and may face in the future as temperatures rise.

Energy Conservation: Are we doing enough? – How valid is New Zealand's claim to be a clean green country? This video focuses on the different ways the issue can be addressed – the results both support and undermine New Zealand's claim.

'Inside TIDE' goes out

A new electronic newsletter providing 'inside' information on the world of TIDE – Technology, Innovation, Design and Engineering.

Inside TIDE is freely available from the US based International Technology Education Association (ITEA) to support educators around the world who share the belief that technological literacy is a critical component of an education in today's world.

Inside TIDE recognises the natural relationship between the fields of technology, innovation, design, and engineering and aims to facilitate communication between those who support technological literacy.

One feature of interest is the 'Conference Opportunities' page.

The first issue of Inside TIDE can be viewed and printed at www.iteaconnect.org/InsideTIDE.pdf

How companies are turning climate change to their advantage

Climate change is forcing businesses and enterprises to re-evaluate operating practices according to a recent article on foodnavigator-usa.com. This is an area of vital interest to all who work in technology education.

The science behind climate change is clear: the world is heating up, and industry is a major cause of this. Governments worldwide are considering, or have already implemented, regulatory measures to reduce carbon emissions. At the recent meeting of the Group of 8, the need for a global approach to the problem was emphasised. In response to this push companies are making changes to their business practices. Some feel a moral responsibility, others feel the economic pressure. But almost all hope to benefit from the way environmentally responsible practices reflect on their image.

Corporate social responsibility (CSR) is the new buzz term. This is a focus on social and environmental practices in business and it's emerging as a major way for enterprises to differentiate themselves in an environment of increased competition. It is now becoming common for companies to annually report not simply on their economic performance, but on their social and environmental practices as well.

The Global Reporting Initiative (GRI) index provides standardised guidelines for reporting progress on corporate economic, environmental, and social performance.

The article points to a 2005 report in Harvard Business Week (Zadek), which details the five stages that businesses pass through as they move to greater social responsibility.

These five stages are:

- The defensive stage: companies are faced with unexpected criticism from sources such as media and social activists. The typical response is to deny the allegations of a relationship between the company's practices and negative outcomes.
- The compliance stage: corporate policy is formed and observed, and is usually made visible to critics. Compliance is viewed as a cost of protecting the company's reputation and avoiding litigation.
- The managerial stage: companies realise that the problem cannot be deterred by simple compliance or public relations strategies.
- The strategic stage: companies learn how establishing strategies to address responsible business practices can give them a competitive advantage.
- The civil stage: leading companies promote industry guidelines and actions to address societal concerns.

The issue is a real one for the New Zealand technology community and provides a rich context for exploration in our technology education programmes.

For the full article and others in the recent climate change feature, see www.foodnavigator-usa.com/news/ng.asp?n=77315

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navigator.com | europe



Tinkerers wanted

The 'Nuts Bolts and Thingamajigs' Foundation has recently been formed in the US to introduce more young people to 'the pleasures of tinkering'. The idea is to help create "... the next generation of artisans, inventors, engineers, repairmen, and skilled workers- in short, a self-sufficient, self sustaining society. "

It has been co-founded by actor, and ex-Cheers star, John Ratzzenberger.

"Every industry starts with someone inventing something," Ratzzenberger said. "Every one of those inventors started out tinkering."

Initiatives supported by the Foundation include traditional Summer camps and a first 'National Tinkering Day' in March this year .

Watch how things develop at www.nutsandboltsfoundation.org



A 5Mb computer hard disk!

In September 1956 IBM launched the 305 RAMAC, the first computer with a hard disk drive (HDD). The HDD weighed over a ton and stored 5MB of data.

Makes you appreciate that 1 GB USB drive in your pocket, doesn't it?

Futureintech update

Keeping it real: industry in the technology classroom

Around the country Futureintech is creating active connections between industry and technology classes, both through Ambassador interaction and the Transpower Neighbourhood Engineers Awards which encourages students to find their own solutions to the needs of their school or community. Ambassadors and Neighbourhood Engineers can offer a professional perspective, encouraging students to develop valuable design and production skills.

Current examples include:

Rosmini College, North Auckland, where mechanical engineer Richard Mahoney is helping a student with a project commissioned by Burgerfuel Restaurants. The student, in Year 13, has been asked to design a table football game to be played in the restaurant by patrons waiting for their food. Teacher Alex Breig says, "It's great being able to involve a real engineer as a mentor for the project."

At **Aberdeen School in Hamilton**, 12 students in Years 5 and 6 are working on the development of an outdoor area for children to spend their free time. With the assistance of Ryan Dunn and Jason Harrison of Hamilton City Council, the students are investigating the current use of the designated area and possibilities for development. Ideas proposed by the



Football with your burger? Richard at Rosmini College

students have included a flying fox, and the project has allowed imaginative and leadership skills to clearly develop.

Two structural engineers, Kelly and Glen, spoke to Year 12 students at **Lynfield College, Auckland**, describing their careers and assisting with the technology achievement standard. Their very different roles complemented each other well – Kelly works for a far larger company than Glen and is able to delegate many aspects of the job which Glen does himself. The students therefore gained both an overview of structural engineering and an understanding of the varied possibilities resulting from the same qualification.

Futureintech Ambassadors Paula Nunweek and Mike Lazelle are supporting a group of Year 5-8 students at **Maranatha Christian School** in their project to mark the school's 40th anniversary. The two

40 Years On: Paula and Mike discuss the options for Maranatha Christian School's anniversary



Ryan helps pupil Josh to see the bigger picture at Aberdeen School

electrical engineers, both employed by Transpower, gave the group a career talk followed by planning tips, and are continuing to work with them towards the creation of a commemorative artefact.

Sunny Hills Primary School in South Auckland is using the Transpower Neighbourhood Engineers Awards to address the safety issue of traffic that the children have to negotiate twice a day. With the help of transportation engineers Anita Lin and Jerry Khoo from Beca, students in Year 6 identified the cause of the problem and developed questionnaires and plans to counteract it.

The engineers also showed computer traffic modelling to the students, and together they have written to the PTA. Jerry said of his involvement: "The experience was fulfilling, fun and challenging. It's not very often kids have the chance to solve real life problems, and I feel honoured to have the opportunity to guide this group of very bright and talented kids in their project."

Jerry demonstrates traffic modelling at Sunny Hills Primary

