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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.

New face at the Ministry

The path from working as a contractor in the construction industry on architecturally designed renovation work to his current position at the Ministry of Education, has been interesting and varied for Geoff Keith.



Geoff (right) talking with Grant Miles, adviser in technology at Christchurch College of Education

Geoff moved into the role of 'Senior Adviser Technology' at the Ministry in February of this Year. Primary trained and with teaching experience in the primary sector and in a Y7/8 technology centre, he has spent the last four years as Head of the Technology Faculty at Wellington High School.

In his new role, Geoff sees working to establish effective communication channels as having a very high priority. "I'd like to bring a listening ear to technology education – getting out there and meeting and hearing what's going on.... with those already passionate about tech ed and doing something about it. That also gives the opportunity to inform and update those people on directions and resources."

Managing the direction of the Curriculum Project in technology is also of immediate importance, "making sure the end result is something the community owns and can work from."

With a stable foundation from broad agreement around the framework established by the Curriculum Project, Geoff sees the challenge being "to fill in the detail... fleshing it out and putting the best of what is technology education in New Zealand around that framework and bringing things together to form a vibrant and sustaining community."

In his life outside of technology education, Geoff enjoys spending time with the family and playing the double-bass in the ("5-7 piece") band 'Wellington Heads'. Like many in the education business he also admits to "always having a building project on the go."

Those 'passionate about tech ed and doing something about it', will look forward to working with Geoff and wish him every success in his new position.

New case studies posted on Techlink

The six new technological practice case studies recently posted on the Techlink web site offer something of interest for most technology teachers.

Pou Kapua

The POU KAPUA is the result of three years of intricate carving by a 30-strong team from New Zealand, Australia, Alaska, Canada and across the Pacific. The carvings depict Maori and Polynesian beliefs, nautical myths and legends, and the histories of migration to New Zealand. Although visitors are likely to remember the 20-metre-high pou as the largest totem of its type in the world, it is also the largest known application of state-of-the-art technology in glued-in-rod connections in timber.

The Age of Aquariums

Specialising in aquariums, Mike Murphy MIPENZ has worked from a modest office in his Manurewa home for clients around the world – Kelly Tarlton's in Auckland, Manly Underwater World in Sydney, others in China, Hawaii, Spain and Vanuatu. He has designed underwater

windows for the filming of the Xena-Hercules TV series, a new sea lion pool at Auckland Zoo, and also came up with bubble wall-tanks for the SkyCity Casino in Auckland.

IP on TV

Computing, telecommunications and entertainment converge on the TV set. While the government dithers over free-to-air digital broadcasting, people are buying the software and set top boxes, and programming their own multimedia experience.

Bypassing Central Wellington

This Inner City Bypass project is less about transport than about urban renewal and when it is completed in mid-2007, most Wellingtonians will wonder what all the fuss was about.

"If there are any lessons engineers can draw from the saga of the Inner City

Bypass, they are that projections into the distant future are almost always unreliable, and that designing a project a community wants, the way it wants it, is ultimately the only way in the current era to get them built at all."

Intensive Care

A spell in the ICU is no-one's idea of a holiday, but the results of a collaboration between biomedical engineers and an ICU doctor at Christchurch Hospital may go some way towards changing this.

Plateau Hut

A safe, and ideally snug hut, needs to be built in the Southern Alps one of New Zealand's most hostile environments. Site access is difficult, and construction must be completed before winter. The hut must withstand all imaginable weathers and stay standing for at least 70 years. Who better to take up the challenge than Derek Chinn, advanced alpine climber and structural engineer.

To view the case studies go to www.techlink.org.nz/techpractice



NASA Engineer returns for encore performance

After the phenomenal popularity and success of his previous visit in August last year, NASA engineer Dr Jack Bacon is returning to New Zealand for a more comprehensive tour of the country.

Dr Bacon's previous public lecture, entitled 'History in the making', was an in-depth seminar on NASA's vision for future Moon and Mars missions, space shuttle missions, and an outline on his work on the International Space Station; which he calls "the most complicated technical project in history".

Dr Bacon's new presentation promises to be as entertaining and noisy as his previous performances.

Dr Bacon's latest upcoming tour will take him across the length of New Zealand where he will present lectures to schools in all of New Zealand's major cities as well as performing a free public lecture in every city that he visits.

The school seminars will be open to year 10, 11, 12 and 13 students and the public lectures will be open to all who wish to attend.

Teachers interested in having their students attend a school presentation, please contact Debbie Woodhall with the number of students that wish to attend as soon as possible – email debbie.woodhall@rsnz.org.



NASA ENGINEER DR JACK BACON LECTURE SCHEDULE:

9 June	1.30-2.30pm Evening	Lecture at Epsom Girls' Grammar School Public Lecture – Auckland
11 June	Evening	Public Lecture – Rotorua
12 June	9.15-10.30am 8.00pm	Lecture at Rotorua Lakes High School Public Lecture – New Plymouth
13 June	9.15-10.30am 8.00pm	Lecture at New Plymouth Boys' High School Public lecture – Palmerston North
15 June	9.00-10.30am 1.45 -2.45pm	Lecture at Wellington Girls' High School Lecture at Nelson College
16 June	1.45-3.00pm Evening	Lecture at Greymouth High School Public Lecture – Greymouth
18 June	Evening	Public Lecture – Invercargill
19 June	9.15-10.30am Evening	Lecture at James Hargest College Public lecture – Dunedin
20 June	9.15-10.30am 1.45-2.45pm Evening	Lecture for students at Otago Museum Lecture at Timaru Boys' High School Public Lecture – Timaru
21 June	Morning Evening	Answering a Christchurch school's questions via telelink Public Lecture – Wellington
22 June	1.45-2.45pm Evening	Lecture at Napier Boys' High School Public Lecture – Napier
23 June	1.45-2.45pm Evening	Lecture at Hamilton Girls Public Lecture – Hamilton

Fellowship support from NZIFST

The New Zealand Institute of Food Science and Technology (NZIFST) is a professional organisation of people working in all aspects of the food industry. The institute has nine local branches throughout New Zealand.

The Institute is concerned at the shortage of technology, engineering and science graduates available to work in the NZ food industry and is committed to promoting careers in the food industry and to supporting the teaching and promotion of food technology in schools.

NZIFST has been a keen supporter of the RSNZ Teacher Fellowship Scheme, and has offered to assist both primary and secondary teachers of technology who are interested in spending a year in the food industry, to find local food industries, universities and Crown Research Institutes to host them, so they can apply for fellowships for 2007.

Information about the Fellowship scheme, including full details of some of the food based projects can be found on the RSNZ website at www.rsnz.org/awards/teacher_fellowships/. Additional information on the NZIFST can be found on their web site at www.nzifst.org.nz.

t-news hounds...

We welcome your suggestions on news items for inclusion in future issues. If it's topical and of interest to others in technology education, then email your contribution to tenz@ipenz.org.nz.

Those keen to explore the opportunity further are invited to make contact with their local NZIFST branch:

Auckland

Leah Davey leah.davey@bjnz.co.nz

Waikato

Clive Bleaken clive.bleaken@fonterra.com

Bay of Plenty

David Munro munrodca@wave.co.nz

Helen Tervit htervit@paradise.net.nz

Lynley Drummond

ldrummond@netsmart.net.nz

Hawke's Bay/Poverty Bay

Adelle Crombie

adelle.crombie@nz.hjheinz.com

Manawatu/Wellington

Abby Thompson

A.K.Thompson@massey.ac.nz

Canterbury

Ken Morison

ken.morison@canterbury.ac.nz

Otago/Southland

Phil Bremer

phil.bremer@stonebow.otago.ac.nz

Note: Fellowship application forms can be downloaded from the RSNZ website. Applications close on 14 July.

During Carolyn Norquay's Fellowship year she participated in Heinz Watties staff training on using the Australia New Zealand Food Standards Code and gained a greater understanding of how the code effected food labelling.

At Foodtown Magazine Carolyn was involved in recipe development, food photography, layout, food styling and developing a new packaging range for a company. The wide experience gained during the year including recipe development and food styling has provided Carolyn with invaluable skills to incorporate in her classroom practice.



News from TRIZ Conference

Brian Allen, HOD Technology at St Patrick's College Kilbirnie, has recently returned from the 2006 International TRIZ Conference held in Milwaukee, USA.

TRIZ (pronounced trees) is an acronym of the words Theory of Inventive Problem Solving – developed by a Russian intellectual, Gerich Altshuller in 1946. He discovered that the evolution of technical systems, inventiveness and creativity can be taught. TRIZ is an algorithmic 'left side of the brain' problem solving methodology which has validated itself by successfully solving thousands of problems of a difficult technical nature.

For Brian, the conference provided an opportunity to compare what we are doing in our New Zealand schools with what is occurring internationally and to see how we can look to further improve our delivery.

"I was excited about what I had pre-read for the conference and was convinced that aspects of the TRIZ problem solving technique would fit in with our current delivery mechanisms in technology and graphics. When I got there I was to discover that industries world wide such as Harley Davidson, Ford Motor Company, Microsoft, Intel NASA and Dow Chemicals have been using this problem solving model in the ongoing development of their product ranges."

A quick introduction shows that there are six basic steps to be followed in the TRIZ methodology:

- Ask the questions
- Identify the ideal result
- Develop the contradiction formula
- Use the TRIZ tools
- Use the principles that best fit the chart for the contradiction formulation

- Now you have multiple solutions

With the multiple solutions generated the challenge is then to try to combine them to get a 'hyper solution' with the best characteristics of all of them.

"To pick the most innovative solution, evaluate them against the Ideal Final Result. If the solution causes new problems, then the process is started again to address the new problem." Dr Ellen Domb, workshop presenter

At the workshop Brian joined an educational group including representatives from America, UK and Mexico. The group was given a specific problem which required a solution by the end of the day and participants were mentored as they followed through the TRIZ problem solving process.

During the conference Brian was made aware of many of the educational institutions in USA and across Europe that are now using the system extensively.

"The Altshuller Institute is keen to see other countries considering the use of TRIZ in their education systems. I most certainly will be using it in my classroom teaching."

Brian has started sharing ideas and information with other Wellington technology and graphics teachers with the aim of forming a development group within which to share ideas and experience.

If you are interested in finding out more, Brian can be contacted at ballen@stpats.school.nz

Last two Colleges of Education to merge?

On 3 May, Hon Dr Michael Cullen, Minister for Tertiary Education called for public submissions on the proposed merger of the remaining two Colleges of Education.

If approved, the mergers would see the Dunedin College of Education become part of the University of Otago, while the Christchurch College of Education would join the University of Canterbury.

"These are critically important mergers. They bring together the strengths of the Colleges and Universities and will support the national need for excellence in teacher education," said Dr Cullen.

"The mergers would create new university-based Colleges of Education specialising in their areas of academic strength. The Colleges would develop new degree programmes, students would also be able to enter the teaching profession through a variety of pathways within a university setting, and education faculty staff would have greater opportunities for collaborative research."

Submission are due by 9 June. A decision will be made by the Minister in July and mergers take effect from 1 January 2007.

If the mergers go ahead, approximately 980 students from the Dunedin College of Education would transfer to Otago University along with 210 staff, while approximately 4,400 Christchurch College of Education students and 531 college staff would transfer to the University of Canterbury.

The institutions concerned will make consultation documents available to the public and submissions can be sent to the Tertiary Education Commission, PO Box 27048, Wellington.

HOD support workshops

GIF Technology Education is sponsoring three regional workshops for current or aspiring Heads of Department /Teachers in Charge of Technology.

The workshops are designed to support the critical role of middle management especially in technology education. They are the first step in providing an opportunity to develop local and regional clusters that will have access to material and facilitator support. The workshops will involve local advisers and teachers as well as national facilitators and researchers.

Workshops will cover:

- Professional Learning Communities
- Developments in L2 and 3 achievement standards with a focus on external standards
- The New Zealand Curriculum Project, reviewed curriculum developments
- GIF – Technology Education projects
- Regional support

Venue and dates

Workshops run from 8.45am to 4pm at the following venues:

- **Christchurch:** 19 June 2006
- **Hamilton:** 28 June 2006
- **Wellington:** 29 June 2006

Registrations close 10 days before each workshop.

Costs

- Early registration (by 6 June) **\$50**
- Late registrations (after 6 June) **\$75**

Contacts

For more information about the GIF – Technology Education Initiative see: www.techlink.org.nz, or contact the Project Manager, Niall Dinning: niall.dinning@xtra.co.nz, cell 0274 303 014.

Subject Association survey

“Subject associations play a vital role in the quality of teaching and learning in New Zealand.”

This statement sets the context for a comprehensive survey which TENZ and other subject associations have recently been requested to complete.

The survey is a first step in a project sponsored by The Royal Society of New Zealand and the Ministry of Education to provide baseline information about all New Zealand Subject Associations to contribute to reviewing how to enhance the already-established impact that subject associations such as TENZ have on the teaching profession in New Zealand.

The questionnaire is designed to provide information that may lead to a broad ‘picture’ of the 32 national subject associations in New Zealand. This first round of information from subject associations will provide baseline data in achieving greater national co-ordination across associations in their support of teachers and effective communication with the Ministry of Education and New Zealand Qualifications Authority. The longer-term goals are to preserve subject association autonomy, as well as strengthen how associations share good practice, advocate on behalf of their members, communicate between government and their members, and become more involved in contracts such as resources development.

We’ll keep you in touch with further developments as they occur.



A break between presenters at the last HOD day held in Christchurch in October 2005.

Futureintech update

A new 'Schools' team at IPENZ

The work in schools supported by IPENZ has grown so much in recent months that a new team has been formed to help ensure its success.

The new 'Schools' team comprises staff who are working on our Futureintech and Techlink projects, funded by New Zealand Trade and Enterprise and the Ministry of Education respectively. The Schools team also includes the Transpower Neighbourhood Engineers Awards and Heritage programmes and is headed by Angela Christie.

The Futureintech team promotes careers in technology, engineering and science in schools. Our six full-time Facilitators, in Auckland, Central North Island, Wellington, Canterbury and Otago, engage industry support and work with teachers, careers advisors, students and their caregivers. They are supported by a Wellington-based writer/researcher and projects officer. A new facilitator position is planned for Auckland later this year.

Techlink promotes technology education online by providing case studies for teachers, educationalists and other interested parties. The Project, led by Coordinator Glynn McGregor, has received a boost in the past few weeks with the addition of two writers and a communications officer. Much of Techlink's recent work has been on case studies from the GIF Technology Education Beacon Practice projects which began in 2005.

Transpower Neighbourhood Engineers Awards

It's the time of year to start thinking about possible projects for the Awards. This year there is a push for more entries from rural schools. The potential in rural schools is no better exemplified by the experience of Dr Sarah Dodd, a scientist recently profiled by Futureintech. Her seventh-form year in a Ruawai School comprised two students, both of whom now possess doctorates in the biological sciences and are extremely valuable members of the New Zealand science community.

The Transpower Neighbourhood Engineers Awards are open to all primary and secondary schools in New Zealand. It aims to create a greater awareness of the engineering profession and meet the objectives of Technology in the New Zealand Curriculum. Teachers, students and engineers work together to respond to an identified need or opportunity in their school or local community. A report of the technology unit is submitted as an entry for the Awards.

The Awards are divided into three categories: Years 1-4, 5-8 and 9-13. There are substantial cash prizes, including \$2,000 for category winners. Entries close 27 October 2006. Contact Susan Weekes for more details – phone: 04 473 2021, email neawards@ipenz.org.nz

www.futureintech.org.nz

Futureintech's website contains a wealth of information for students, parents, teachers and careers advisors. It has profiles of young people working in technology, engineering and science, the companies they work for, and information on the different courses, careers and scholarships available to students.

Overcoming limitations

What have a new sports energy bar, a skateboard park and a racing motorcycle have in common? One class at Rutherford High School can tell you. The answer is Futureintech... or more specifically our generous Futureintech Ambassadors.

When Molly Nepe was looking for inspiration for her class she turned to Futureintech Facilitator Angela Hart. Molly has plenty of students who love learning about technology and engineering, and being a textiles and fabrics specialist didn't stop her offering them more.

After a discussion with teacher and students about what they wanted to get out of the classes it was decided to let each student choose their own personal project within their field of interest. Once they received teacher approval Angela Hart found students mentors from the engineering sector.

The solution has proved highly successful, embraced with enthusiasm by both the students and the mentors.

One look at the projects they are doing tells you why: Isthmus is collaborating on the design of a skateboard park; Tasti Products is assisting in the creation of a new sports energy bar; and Senior FSAE mechanical engineering students are overseeing the restoration of one Rutherford student's father's motorcycles, along with a few improvements.

The concept is an innovative approach to education which is ideal for many schools – small and large. If you need help in your technology classes, to one of our Futureintech Facilitators. Contact details can be found at: www.futureintech.co.nz/facilitators.cfm.