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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.

Beacon practice underway in Wellington

An exciting new initiative to support technology teaching has started in Wellington, with four secondary schools working on the Technology Beacon Practice Project.

Representatives from Massey and Victoria Universities met with technology teachers from Wellington High, Wellington College and St Patricks (Kilbirnie) on 3 February to hear the different programmes planned, and discuss how cooperation can be developed between themselves and the schools.

The meeting was hosted and facilitated by Futureintech staff - as luck would have it, on the hottest day of the year!

Plan of action

The meeting heard from each school on their plans to improve technology teaching, with a variety of exciting and innovative projects planned.

Wellington High's Head of Technology Geoff Keith wants to use the project as a means to improve technology teaching, and in particular, to add elements of science and technology to computing and bring in achievement standards.

The school also has a beacon practice class working at level 2, designing lighting for an inner-city café/restaurant/bar.

For Brian Allen, Head of Technology at St Patricks College, it's a chance to raise standards and achievement by students through the professional development of his teaching staff. He wants his technology teachers spending time with mentors in private industry to help improve their knowledge and inspire possibilities for classroom practice.

Wellington College's proposal is a very different project again. A class of year 12 students will be working with St Marks primary school, with the younger children as their design clients.

HOD Matthew Lane says the aim is to get his students thinking beyond themselves - something which can be a challenge for this age group. They will have to interview and mingle with the students, and plan activities to get a good understanding of their clients and what they want.

Barbara Knight at Queen Margaret College (who couldn't attend the meeting) plans to build links with businesses and organisations outside the school, giving the students the experience of working for real clients outside their usual circle of acquaintances. Potential clients could include Te Papa.

And for Year 13 students, Barbara hopes to involve business and industry experts not just as clients but also to help develop portfolios for entry into tertiary courses.

The results of these different projects will eventually be case studied and made available to other schools as examples of good teaching practice.

The aim of beacon practice

As described in the first edition of T-News, the aim of the scheme is to build teacher capability in technology education through a focus on quality teaching, innovative environments and supportive relationships. Beacon practice is part of the government's Growth and Innovation Framework (GIF) - Technology.

This first meeting was a good opportunity for the participants from the different sectors to meet, hear each others backgrounds and goals, and start building relationships. An email group has been set up and another meeting will be held soon to report on progress.

Futureintech also has a key role to play, responsible for creating and managing sustainable links for schools with tertiary and industry groups.



Level 2 Technology Achievement Standards for 2005

The Ministry of Education and NZQA have jointly co-ordinated the review process for the L2 technology achievement standards. The final standards are now registered and can be accessed together with the Assessment specifications for 2005 at: www.nzqa.govt.nz/ncea/assessment/sea2rch.do

The main changes to be noted are -

- Deletion of the generic 2.1 (Technology) and 2.2 (Technology) standards
- Deletion of the technology area specific 2.3 standards leaving only one 2.3 standard - reflecting an emphasis on the production and process technological area
- Significant alterations in the 2.4 standard to reflect a more consistent approach across the levels. The standard now has a new registration number
- Substantial changes have been made to the criteria for 2.5 to better reflect the intent of the standard and its alignment with the criteria found in the corresponding L3 standard
- The prescribed knowledge listed in the explanatory notes of the 2.6 standards has been removed to allow more flexibility. Teachers and students will now be able to include knowledge that is relevant to the technological practice being undertaken
- The prescribed skills listed in the explanatory notes of the 2.7 standards have been replaced by suggestions to allow more flexibility. Teachers and students will now be able to include skills that are relevant to the technological practice being undertaken
- All of the 2.4 – 2.7 standards have had their credit values increased from 3 to 4.
- Deletion of the ICT specific standards 2.8 and 2.9.

A more detailed description can be obtained by following this link through to the MoE NCEA pages.

The amended generic templates, to assist teachers in writing assessment tasks and schedules for the new versions of 2.1, 2.2 and 2.3, are now available on TKI at:

www.tki.org.nz/e/search/results

Note:

In the past SecQual Circulars have provided schools with all the 'must know' stuff about external assessment in technology. This information has been up on the web site for a while now, at:

www.nzqa.govt.nz/ncea/assessment/resources

TENZ 2005 Conference

TECHNOLOGY EDUCATION – A FUTURE IN TECHNOLOGY

DAY ONE will focus on upskilling teachers and offers papers and workshops with practical ideas for the classroom.

DAY TWO will focus on other aspects of classroom practice including planning, assessment, exemplars of student work, and programmes of work. Delegates will be able to choose from a range of venues to visit to see technology in action.

DAY THREE will focus on pathways students can take in technology. This is an opportunity to consider why you are teaching technology and where your students can take it.

"The conference will have a very clear focus on a future in technology," says conference convenor Wendy Fox-Turnbull. "Many of the children we educate today will have careers in a vast array of technological fields. We are targeting primary, secondary and tertiary educators. Teaching technology should be about igniting a passion - this is relevant at all levels. Quality programmes in the primary school will develop a foundation to be advanced in secondary and tertiary education. Such programmes will make a significant impact on our students."

Confirmed keynote speakers include: Dorenda Britten, Managing Director of Designindustry Ltd; Emily Drysdale, Award winning designer - Untouched World; Michael Frampton, Marketing and Business Development Manager - ETITO; Welby Ings, School of Art and Design - Auckland University of Technology (AUT); Peter Jackson, Pro-Vice-chancellor School of Engineering - Canterbury University. The success of the conference relies on the enthusiastic contribution of teachers, lecturers and technologists. Start thinking now about presenting a paper and/or running a workshop which fits in with the conference theme. Classroom teachers are particularly encouraged to share their ideas with their colleagues.

Conference brochures with more detailed information will be out soon. Up to date information including registration forms will also be on-line at www.tenz.org.nz.

All enquiries regarding the conference can be directed to tenzconference@cce.ac.nz.

TENZ Futureintech update – February 2005

Futureintech and the Young Designers Award

A new partnership between Futureintech and the Young Designers Award has begun in 2005, with the goal of inspiring the next generation of engineers, technicians and scientists.

The Young Designer Awards is New Zealand's premier national design competition for secondary schools. Since starting in 1990 the award has gone on to become highly successful, prestigious, and popular amongst schools and students.

The awards are based around encouraging young people to promote their creativity in a way which can eventually be employment related, and with the help of industry, many students have been introduced to a whole new world of career possibilities.

It's not just about fashion either – in fact, that's only one category out of seven. The other fields include electronics, built environment, communications, landscape design and visual arts. And the judging criteria emphasises the importance of the design brief, looking at problem or challenge and coming up with a solution.

It's the kind of programme ideally suited for Futureintech, given that it encourages practical learning, innovation and links with outside industry. We'll be promoting and supporting the Young Designers Award in schools along our other key programmes - CREST, Bright Sparks and the Neighbourhood Engineers Award.

Futureintech's new Facilitators

Futureintech moves into full implementation this year, and this means three new Facilitators joining the team. Facilitators are the face of Futureintech; they provide the link between schools and industry, helping to inspire students by showing how subjects like maths, science and technology are used in different careers.

Margaret Brunton Central North Island Facilitator

Cell 025 214 6082; mbrunton@futureintech.org.nz

Margaret Brunton's Masters thesis has given her the perfect background for Futureintech: she studied industry-school linkages, with a focus on biotechnology and rural schools.

Based in Whakamaru, just south of Tokoroa, Margaret covers the central North Island and is hoping to put her thesis into action. She is excited about the possibilities to enhance learning in technology

education, and to increase awareness and enthusiasm for careers in technology.

Outside work Margaret's family keeps her busy and involved in various water sports.

Gay Watson South Auckland Facilitator

Cell 021 479 802; gwatson@futureintech.org.nz

Futureintech's new South Auckland Facilitator is Gay Watson, another former technology teacher.

Last year Gay received a Royal Society Technology Teacher Fellowship which let her spend a year in different workplaces studying technological practice. As well as spending time with lingerie and possum fur clothing companies, she worked on the movie set of *The Lion, The Witch and The Wardrobe*. One of her more unusual tasks was 'aging' the costumes, which meant spending hours scratching and creating expensive new costumes to get the desired look.

Bernadette Hannagan Otago Facilitator

Cell 021 479 804; bhannagan@futureintech.org.nz

Covering the lower South Island is Bernadette Hannagan, based in Dunedin. Bernadette's previous role as liaison officer for Massey University introduced her to a wide range of schools and industry, connections that should be useful in her new role.

The chance to work on linking careers with learning was too good to pass up for Bernadette. She says she saw many young people ending up on inappropriate courses, simply through not knowing enough about different options available. Futureintech is a chance to help correct that, particularly through showing how subjects like maths and science can open doors.

Other Facilitators:

Angela Hart, North Auckland Facilitator
tel 09 302 0901; ahart@futureintech.org.nz

Phil Sadgove, Wellington Facilitator
tel 04 473 2025; psadgove@futureintech.org.nz

Neil Potter, Canterbury Facilitator
tel 03 365 4120; npotter@futureintech.org.nz

To find out how Futureintech can help your school, check out www.futureintech.org.nz, email enquiries@futureintech.org.nz, tel 04 473 2023 or fax 04 474 8933.

Neighbourhood Engineers Award

Add a 'real life' dimension to your technology education unit and win money for your school! With the Neighbourhood Engineers Award teachers, students and engineers respond to a need or opportunity in their school or local community. The engineer comes into the classroom to support the teacher by showing the pupils the process an engineer works through when tackling a new project. A report of the project is submitted as an entry for the Award, with winning schools receiving \$2,000.

St Johns Hill School pupils won the Year 1 – 4 section of the Award with the homes they devised for snails as part of their overall mini-beasts unit. The children looked at what sort of homes their snails needed, with many at the beginning thinking that bedrooms, living rooms, etc were necessary for a happy snail! The class eventually decided to use plastic soft drink bottles and each pupil made up a snail home.

The Year 5 – 8 category was won by Blockhouse Bay School with their new playground project. The group looked at the inadequacies of the current playground, before designing the new one. The engineer showed the students how to work through a major project including issues of need, resources, safety and budget. Pupils showed an awareness of the needs of their community with their design to enable wheel chairs to access parts of the playground so that these children could be with their friends.

Chocolate was the focus of Diana Eagle's winning Year 11 Food Technology class at Tararua College. The students' project was based around the development of a chocolate product and involved a variety of activities ranging from brief development and refinement to visits to a local sweet factory and running their own sensory testing with an outside panel.

Merit Awards of \$500. were gained by Pahiatua School with their School Drop Off Zone project and a pupil of Tararua College with her Cafeteria Food Safety Programme. To find out more about Neighbourhood Engineers Award at all levels, go to www.ipenz.org.nz/ipenz/Education_Career

CREST at Primary Level

CREST—Creativity in Science and Technology—is a nationwide awards scheme which fosters interest in, and rewards excellence in Science and Technology amongst primary and secondary students. It has a



role to play in developing New Zealand's future entrepreneurs, innovative technologists and scientists.

More and more Year 6 students are doing First CREST or Team First projects – they might investigate something interesting, make a new product or to solve a problem that will improve the environment. They plan what they are going to do and do it, remembering to keep a log as they go and making any alterations/improvements as the need arises. CREST booklets outline the assessment criteria and steps to follow. When the project is complete the student receives a certificate and badge for their level. Then they move onto Bronze.

Nick Williams, a Year 8 student at Hiwinui School, designed a magpie trap for his Bronze CREST award. He started his project, as do all good designers, by drawing several designs. Once he had settled on the most feasible one he made a model. This allowed him to consider various construction issues. Lastly the trap was constructed out of treated pine and chicken wire.

To find out more about CREST at all levels, go to www.crest.org.nz or contact Cris Westrupp at The Royal Society of New Zealand cris.westrupp@rsnz.org



It's a tough life...



The conference venue, Crowne Plaza, Gold Coast

In early December 2004 a sizeable contingent from the New Zealand technology education community headed across to Australia's Gold Coast to attend the third Biennial International Conference on Technology Education Research

This year's conference theme was 'Learning for Innovation in Technology Education', and featured four excellent keynote speakers: Professor John Stevenson, Dr Allison Druin, Dr David Barlex and Professor Richard Kimbell.

Professor John Stevenson, Griffith University

Professor Stevenson's presentation, entitled 'Innovative thinking as meaning-making', explored both the thinking that is involved, and what constitutes, innovation itself. He argues that firstly, complex problems are not alike and therefore do not lend themselves to singular problem-solving approaches; and secondly, it is hard to see how original solutions could be generated by algorithms that learners could acquire. A way forward may be that problem solving be considered as meaning-making and that innovation be seen as new ways of making new meanings.

Dr Allison Druin, USA

Dr Druin's presentation 'Research, robots and real children' motivated and enthused the conference audience. If you have a special interest in ICT, her paper is well worth seeking out.

Dr David Barlex, Brunel University

Under the theme 'Creativity in school technology education', Dr Barlex described the influences of key participants in school technology education and identified five features that must be considered by the community of practice in a collaborative endeavour to enable creativity to develop in school technology education.

Professor Richard Kimbell, Goldsmith College

Professor Kimbell's topic was 'Assessment in design and technology education for the Department of Education and Skills, UK'. This was particularly interesting for those New Zealanders who are grappling with the challenges thrown up by NCEA and technology education. His prime concern was that innovative students in the UK are being penalized, by comparison with well organized, rule-following students, because of rigid formulas for student portfolios which teachers are imposing in order to maximize students' grades. His presentation went on to describe a government funded research project to investigate this problem and to devise a framework which will better facilitate, encourage and reward innovative design and technology performance.

The ten travelers from various parts of New Zealand who attended this conference included School of Education lecturers, advisors, researchers and one teacher, each of whom delivered a paper describing work they had carried out during 2004.

Further information on the conference, including access to any of the papers mentioned above, can be obtained by contacting Louise Milne at louisem@waikato.ac.nz.

Technological Literacy, USA!

If you are interested in keeping in regular touch with developments in technology education in USA you can **subscribe** to Bright Ideas – distributed electronically by the US based International Technology Education Association (ITEA) to promote technological literacy in the school systems in USA.

The latest edition features the Technology Discovery programme at Biloxi Junior High School in the state of Mississippi.

Technology Discovery, a one year course taught statewide to most public school students in nine grade, is designed to give students a fundamental knowledge of technology and introduce them to the problem solving skills used in a technological society.

To get a copy of Bright Ideas and more information on how to subscribe go to www.iteawww.org/BrightIdeas/Bright.

This second edition of t-news has been sent to TENZ members who have provided a current E-mail address and others who have specifically requested a copy. We would welcome the wider distribution of the newsletter to other individuals or groups who may be interested in information relating to technology education in New Zealand. To be added to (or removed from) the distribution list or to make suggestions on format or content, e-mail tenz@ipenz.org.nz