

quick

Spring 2007 Issue 104



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can be used to teach film making in the classroom.
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in the Early Phase
Gayleen Jackson

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Editor@QSITE



How quickly the year goes, spring nears and changes abound. Led by John Oxley, the state conference was a great success with increased participation and diversity of sessions. John details the scope of this success in his presidential report. QSITE has had a colourful branding makeover and thanks to stylists Chris Eske and Carolyn Folland you will see our new logo and colours on QSITE material from now on. The new look website will soon be upon us thanks to Amanda Rablin, and promises to enable increased online functionality for all our membership. On the policy front, the Queensland senior curriculum faces restructuring into domains and we will have our own IT domain, in no small part thanks to the lobbying efforts of QSITE. The first round of the ICT Advanced Pedagogical Licences have been awarded with QSITE's contribution ably coordinated by Sel Kerans. Throughout the

state, QSITE continues to provide ICT professional development ranging from podcasting, games in learning, claymation, and interactive whiteboards, details of which are communicated by Colleen Stieler and her team through our newsletter Insite. With all of that happening, QUICK reports on still more. In this edition we have articles on the use of digital cartooning in the classroom by Lyndall Owbridge. The need to establish effective online habits at school by Thérèse Brandt and Michelle Williams. Kristine Kopelke takes us into the world of Machimina and Dr. Gary Jacobson explores the social and ethical issues raised around proprietary and free software. Louise Alexander recounts her experience using blogs to engage indigenous students and Scott Ward describes his use of film making to inspire year 5's in their study of SOSE. Bob Fifoot challenges the role of ICT coordinator, and teacher, in *False*

Gods or Holy Grail? Delivering IT in Schools and Kevin Savage provides advice on the marking of conceptual schema designs. Something for everyone in the diverse community that is QSITE. With the final term upon us, each of you has done amazing things worth sharing, even though I know you have difficulty acknowledging them as such. Our community needs not only articles from innovators and early adopters, but also the early majority; those of you embedding ICT into your everyday practice. Please consider contributing to our community with an article for the next edition of QUICK, the deadline of which is the 31st of October. Please include digital images as separate files and not only embedded in the document. I hope all your innovations bear pedagogical fruit this spring,

Jason Zagami
QUICK Editor

President@QSITE



For those in the QSITE fold, the June/July school holidays were dominated by our 22nd QSITE State Conference: Create IT, Communicate IT — Learning with ICTs and what a conference it was. More than 250 teachers from across Queensland attended the conference held in Brisbane at the Anglican Church Grammar School (Churchie). Churchie had a real international feel with conference attendees from throughout Qld, from NSW and WA and even as far a field as PNG, Vietnam, Qatar, Nauru and China. The PNG and Vietnamese visitors were especially impressed with the venue and program.

The conference committee endeavoured to assemble a program that appealed to all sectors with strands for our specialist computing teachers, IT managers and technicians and teachers integrating ICTs into the curriculum. The early and middle year teachers were well catered for with strands devoted to both these areas. In all we had a record of 72 presentations spread over eight sessions throughout the two days of the conference and four pre-conference workshop sessions on the day before the conference.

We were honoured to have the conference opened by our Queensland Education Minister, Rod Welford who remarked on the dedication of the 260 delegates in forgoing their holidays to attend such a crucial event. His interest in ICT education was evident in his speech and by the fact that he cancelled his next appointment to listen to our first keynote speaker, Tom March.

Tom and Nan Bahr both presented

excellent keynotes. Tom talked about the new WWW and his current CEQALL (Choice — Effort — Quality — Attitude — Labour of Love) learning and teaching methodology. Nan Bahr introduced conference attendees to the world of generational theory and in particular the characteristics of the ICT savvy MilGen kids. Her talk encompassed their characteristics, how they think and how we can connect with them.

Breakout sessions were eagerly attended and our trade show in the main hall consisted of 23 vendors from all areas of ICT. The conference dinner on Thursday night was held at the picturesque Gabba Cricketers Club. The drinks flowed, we were treated to an excellent dinner and were entertained by a magician with more quips than Clive Gordon. Our president lost his credit card, Bob Rodgers did an onstage dance worthy of YouTube and most of the audience was entertained during the night by further sleight of hand tricks. Our evaluation data clearly showed that this dinner was one of the highlights of the conference — if you missed it make sure you go to the next one.

There were many highlights as you would expect from a QSITE conference. Lindy's 2nd Life talk inspired many teachers to have a look at this new 'learning' space, Gary Jacobson raised the Open Source debate to a new level, and there was standing room only as Col Thompson outlined how to develop an ITS course of study. The constant practical lab sessions were very popular and our trade presenters demonstrated

everything from graphic tablet use to Student Internal Monitoring software. Bob Fifoot excelled with the most creative presentation title; 'Full many a gem of purest ray serene ...'. We're still scratching our heads over that one.

On Thursday afternoon everyone enjoyed drinks, nibbles and the unveiling of the new QSITE 'look' by our member services team. The makeover has given QSITE an opportunity to re-examine our aims and vision, and to consider what we give back to our members. An integral part of the makeover is a complete re-development of our website and the front page was unveiled at this session.

Finally we closed with a glimpse at next year's conferences. The 2008 QSITE Conference will be held in Toowoomba in the July school holidays while the biennial ACEC Conference will be held in Canberra during the September/October school break. Plan now to be at both, you won't regret it.

In closing I would like to give my heartfelt thanks to all those committee members who made this event happen. Special thanks to Chris, Herb, Lyn, Amanda, Jason, Clive, Gayleen, and Colleen for all the meetings they attended and their excellent efforts behind the scenes. Thanks also to our indefatigable student helpers from QUT, to our sponsors and trade show participants and to all attendees. We are all looking forward with anticipation to our special members' day on October 26 — keep the day free as this will be an event not to be missed.

John Oxley
QSITE President

Cartoon competition swamped

Lyndall Owbridge

A group of Kurwongbah State School students have been the lucky recipients of a lesson in cartooning with creator of Swamp cartoons, Gary Clarke.

The lesson came about thanks to their talented classmate Sophie, the winner of the Learning Place's 2007 Online Cartooning Competition.

Mr Clarke delivered the prize of a cartooning lesson to the enthusiastic students live online, via video conferencing, using an interactive whiteboard.

Year 5 Kurwongbah State School teacher Neil Pollock said the students enjoyed the experience.

'They had a ball learning some great skills,' Mr Pollock said.

'There were lots of oohs and aahs as Gary showed them the steps to creating

their own cartoon characters.'

For the competition, the Learning Place invited students throughout Queensland to create a collection of avatars for an Easter bilby.

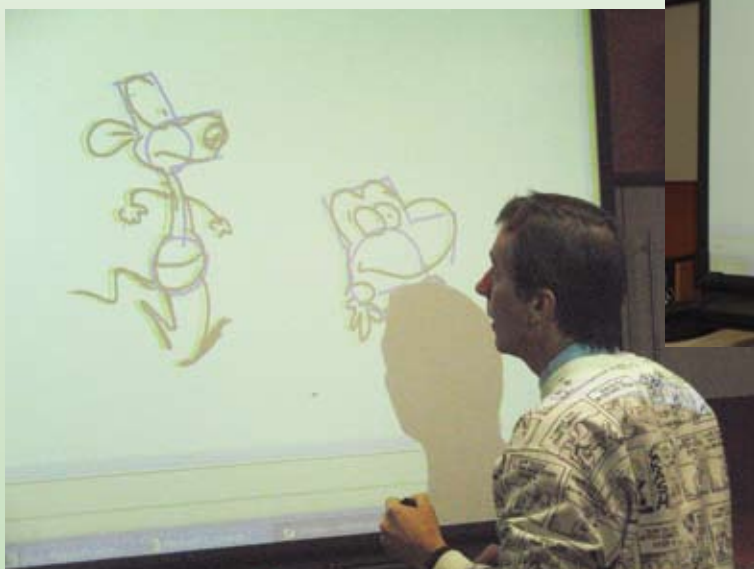
The competition was a great success with entries submitted by 48 talented students in 13 schools.

Students created their cartoon characters on the Learning Place's cartoon character bank, using their computer mice as pencils.

Competition coordinator and Learning Place Mentor Hazel Orr said many of the participants and their peers took the opportunity to offer comments on each others drawings via blogs.

'The competition was a great example of how ICT can connect and encourage communication between students across the state,' Ms Orr said.

View the cartooning workshop video: <http://www.education.qld.gov.au/learning-place/stories/articles/cartoon-comp-aug07.html>



School based habits for online safety

Thérèse Brandt and Michelle Williams

The key arguments

This article suggests that teachers should directly address online safety by teaching it explicitly as a unit or series of lessons. It also suggests that the definition of online safety needs to be broadened to account for consumer awareness, online behavior and personal responsibility. To move from the usual technically-driven reaction to Internet safety to a proactive school community approach, this article offers a framework for decision making about Internet safety that involves systemic decisions, school-based decisions and teachers' actions.

Why connectivity is a changing issue?

It seems the world we are living in is changing constantly! It is difficult to comprehend the impact of such changes

on our family, social and cultural structures. Fast instant communication seems to accelerate the pace of living and both add opportunities and pressures. Communication technologies in business, education and entertainment are being redefined and new strategies are shaping how we are informed and inform. Even so, parents and the community express fears that Internet communications might impact negatively on the social and moral well being of young people and society generally. While schools know that the digital medium for information and communications is vital; in order to protect, they impose restrictions that limit and sometimes stifle use.

Welcome to the 21st century school

It is an assumption of the forward-look-

ing school that contemporary learning requires that children access multiple viewpoints on a subject and connect with experts and other learners. Further, the forward-looking student and their families are demanding online access to school services. The traditional paper-based schooling is moving towards digital resources and services, while instructional design is moving online. Students expect access to school facilities from home, where learning moves to be web-based and suddenly, web protection feels like a 24/7 responsibility for schools. School administration rely more on the web to communicate with the community and classroom teachers are implementing new collaboration strategies in interactive environments broadening student access to learning experiences. ICT's as both strategy and pedagogy is almost entirely driven by Internet connectivity.

Parents' fears

For parents, there is a sense of a losing control when their children begin to communicate online. The language, genre, and tools of the online culture are often beyond the experience of parents and grandparents. They believe they can not closely supervise who children are communicating with and what is being communicated. They learn what they know from broadcast media, rather than online experience. Parents hear about the sexual predators, access to pornography and extremist groups influencing the world through the broadcast channels of the Internet. As broadband



enables a wider range of services, connections and information, these 'dangers' frighten parents, who are struggling to keep their children safe in a changing world they do not fully understand.

There is no doubt that these dangers are real, increasingly complex and attached to enormous economic and business empires. We have learned that the development of Internet video exchange services is funded for and by the online sex industry. The significant and growing capacity to connect people is driven by dating and connections agencies. Online marketing is on the increase. This is a real world for young people and it changes faster than the community can comprehend. Parents simply want to be sure their children are not influenced by undesirable groups and individuals, not exposed to sexual material and are not tricked into dangerous consumer behaviors.

Parents trust that schools are safe places for students and so expect that schools protect children from Internet dangers and that school assist parents to educate young people about online dangers and how to handle complex situations. The challenge for the ICT leaders in QSITE is to meet both aspects of this expectation without overreaction, while responding to the demands to use Internet technologies for curriculum and pedagogical purposes.

Teachers' fears

For teachers, the Internet presents learners with a powerful tool likened to a two-edged sword, delivering both opportunity and distraction. For Internet-using teachers, new tools and an emerging online culture changes both how teachers interpret curriculum and how they teach. For others fears about plagiarism, classroom management in computer laboratories and distraction from the task at hand are lamented and given as reasons for avoiding online activity. Outside of the classroom students ignore their reluctant teachers and use online services anyway.

Although, what to do online beyond looking up information is an ongoing learning path for teachers, they are also cognizant of the community reaction to online dangers. Both experienced and

inexperienced teachers know they need to actively address online safety. In contrast there has been little discussion in QSITE about whether to address this issue specifically and how. This article continues a discussion begun at the 2007 state conference. What was apparent at that conference was that schools must broaden understanding of Internet safety to include computer and internet addiction, as well as consumer awareness.

Habits for Internet safety

A proactive approach to online culture needs to include awareness of the dangers and strategies for safe productive online experiences. The following list of ideas includes traditional topics or online safety issues and some less well-known ideas. The age of the children will determine the depth of knowledge children should exhibit.

Students will know

- Pornography is socially unacceptable and must not be viewed online at school, home or in the community.
- Harmful people may be online and may try to contact young people without the permission of their parents.
- They are responsible for their Internet use and that their password protects their computer account and access.
- It is responsible and ethical to treat people kindly and respectfully online and to expect similar treatment from others.
- It is illegal to harass or bully people online or by phone and there are criminal charges and other consequences for breaking these laws.
- Computer addiction and Internet addiction can be avoided by balancing the activities in your life.
- Internet use is not free and someone is paying for online time and sometimes usage, so Internet use should be purposeful, even in leisure activities.
- General principles of Internet Service Agreements including costs, rights, responsibilities including those with service providers to homes, the use of Internet at school and agreements with employees in

workplaces.

- That Internet use is traceable and monitored and that students are accountable for their online activity.
- Consumer issues, how credit and payment systems work and the legal implications of online purchasing.
- The dangers of harmful consumer and other schemes used online.
- The hidden conditions and purposes of competitions in digital formats including mobile phone SMS, email and web competitions.

Students will

- React proactively when encountering unexpected sites which appear to contain pornography, obeying school rules or adhering to parental controls, as well as discussing the discovery immediately with adults.
- Only communicate with people they know personally and who would be approved by their parents and teachers.
- Protect personal assets including personal information online by not sharing it with anybody including people they know.
- Respect the responsibility of their password and not share it with others.
- Demonstrate respect, manners and kindness when communicating online and by phone using any of the technologies' tools.
- Respect their parents and teachers demands that they engage in a range of activities off computers that includes physical exercise, meeting and playing with friends and talking to family members without the computer, TV and other technologies distracting the quality of conversation.
- Take responsibility for Internet usage through a service agreement or school use agreement.
- Recognise the characteristics of common scams and how to ascertain if an email or other message is part of a scam.
- Respect that parents must purchase goods and services online for children.
- Read the 'fine print' of competitions and avoid being the target of marketing campaigns when email

addresses are provided to companies, groups and individuals.

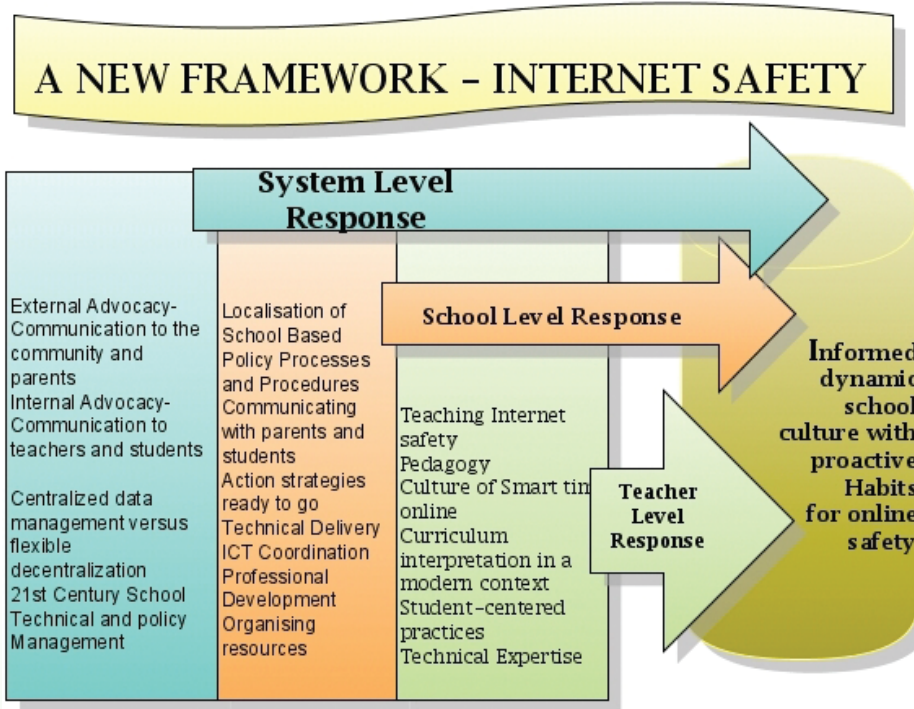
For schools, teaching about Internet safety is a proactive strategy to balance the usual approach of 'banning and blocking'. The processes and policies in many schools are implemented to assure parents schools are proactive in 'protecting' the students from Internet dangers. The processes can also be part of the curriculum.

Introducing a Framework to promote Internet Safety

Initial responses to Internet safety developed by schools are often technically-driven reactions accompanied by harsh restrictive policy frameworks. Blocking web sites and services, filtering content and restrictions on activities are significant reactions for extremely dangerous sites and services, but over zealous protections often hamper educational creativity and restrict learning opportunities. Systemic responses scared by the possibility of a negative media report, adopt a 'one size fits all' approach and frustrate the early adopters and pioneers who lament the lost opportunities and constant frustrations. Certainly the responsibility of Internet safety and the balance between proactive and reactive processes and policies is a shared one. Systems, schools and individual teachers all should contribute to a system of support for student use of the Internet.

The Internet safety issue is now harder and solutions need to span technical, policy, process and educational awareness approaches in a more complex manner. This article suggests that a tiered approach that recognises three levels of responsibilities will assist schools to assure their communities they are taking responsibility for online safety proactively while not restricting educational opportunity. This article urges common sense and avoidance of technical lockouts.

This article suggests that QSITE members in each stakeholder group promote a proactive approach to Internet safety, that they share the common goal of developing productive and engaging use of the internet and that focus is specifically on the learning needs of students. The framework offers a schema for the decisions that need to



be made and offers a set of proactive ideas for building a confident school community.

Teacher-level response

Teachers are the front line to student's time online and certainly more so than policy and technical solutions. Teachers who take responsibility for thinking about Internet safety and who have sound proactive pedagogy can assure parents students are safe by describing what they do in classrooms. Much of a school's response is grounded by what teachers do.

Teaching Internet safety

Adopt a deliberate focus on online safety, using the comprehensive definition suggested here, using resources suggested in the article and using a variety of engaging pedagogical approaches when assisting students to interact with Internet safety content. An effective approach is the presentation of a series of work units designed for middle school students that employs project-based learning. Middle school students must understand personal responsibilities along with internet savvy behaviours when they begin to fully manage their emails and are literate in digital communications. Young children too can engage in Internet safety lessons and activities.

Pedagogy

Using a range of pedagogies to engage children in the task at hand and ensure activities online are worthwhile and deliberately planned. The productive pedagogies assist teachers to plan worthwhile activity, interpret curriculum meaningfully and execute a child-centred learning approach. Looking up topics ensures teachers struggle with keeping students engaged on task, compared to student interest with intriguing questions and interesting connections with people and online services.

Further, teachers can use their pedagogical approaches, teaching strategies and student collaboration and discipline techniques to ensure students do not stray from the task, have time available to wander into dangerous territory and have unsupervised time. Simple ideas like ensuring younger students work with a buddy online, and having a routine in place for when the expected unwelcome site or approach occurs are all within the teacher's power to prevent and manage. Technical limitations are not the only answer.

Culture of smart time online

Ensure that online time is purposeful time, within a sequence of structured activities. Free time online does not promote purposeful activity.

Web quests and similar teacher tools provide focus and more certainty of student activity.

Library time and other less-supervised environments are important to address. Purposeful lunch clubs, use of student monitors and student tutors/help desks, and encouraging joint research activities will support library supervision routines.

Curriculum interpretation in a modern context

Connected teachers will understand online culture and be able to develop authentic and valuable online activities which portray the contemporary connectedness of business, society, and youth/family culture. Much teacher-de-

The Internet safety issue is now harder and solutions need to span technical, policy, process and educational awareness approaches in a more complex manner.

veloped online activity is considerably different to what students do online outside of schools. To be relevant, teachers need to understand online culture by being part of it and be online knowledge workers themselves. Only then will they interpret curriculum directions in contemporary ways.

Student-centred practice

Student ownership of their work, meaningful real audience, authentic learning rather than teacher-contrived learning and other principles of project-based learning and constructivism mean that students are less likely to be distracted by aimless Internet browsing and deliberate misdemeanors. Further, what students choose to do as online knowledge workers will be more sophisticated, use a wide range of online tools than simple search engines and ensure students process their online discoveries at a higher cognitive level.

Technical expertise

There is no substitute for technical knowledge and teachers simply need to gain it to be Internet savvy. Teachers with technical expertise and specific online culture knowledge will be able to read URLs and recognise inappropriate

sites more quickly, know how to avoid dangerous situations, be alert to mischievous students (when they are online) and know how students hide screens behind tabs etc. Teachers need to assure parents they have sufficient online experience and skill to keep children they are supervising safe and to design classroom situations including classroom and activity management techniques, which avoid awkward online situations.

School –level response

Localisation of school-based policy

Schools need a local policy and defined set of procedures about prevention of unsafe online practices based on sensible

curriculum interpretation and encouragement of strong pedagogy, rather than a set of negatively framed rules or a restricting set of technical processes. This can be complemented by student and staff agreements, negotiated with staff and parents. Policy needs to clearly describe the consequences of deliberate breaches of policy, and recognition for teachers whose pedagogical approach prevents issues and whose curriculum interpretation teach students about online safety. Schools need a process to allow access to sites at a school-based level or request sites to be unblocked which seem to be safe and educationally valid. Blocking of processes and sites at school level needs to balance educational validity of the service over server load and other usual technical restraints.

Communicating with parents

Informed parents will have confidence of the schools intent to safeguard their children. Publishing of the Internet safety policy and processes on the school's web site plus listing ways parents can safeguard their children will assist parents to recognise the care implemented at school level. A 'Simple English' page communicating 'How we keep children safe online' will build

community confidence. Providing parents with sites listings and educational indexes, relevant to current units, will assist parents to help their children and avoid long searching episodes at home.

Action strategies

The quality of a school's web site can greatly assist schools to undertake modern web-based activities including interactive web 2.0 activities safely and securely. The tools available on the school's web site can enable teachers to establish safe chat events for students, provide access for students to talk to each other after school, post blogs to audiences which only have a school login and so on. Further, use of specialist education portal services like the Learning Place and EdNA provide safe and filtered services specially for education, and ensure a school can work with leading edge technology applications. The quality of tools and services on the school's Intranet can encourage teachers and students to establish class intranet sites, set up hotlists, web quests, blogs and other content management environments, so they have a defined learning space, rather than a search engine interface to the web. Proactive use of clever services provided by the school in conjunction with the school systems will enable strong pedagogy online and a safe learning environment for students. The culture the school supports as an online presence affects the attitude students, staff and parents have of the Internet as a medium for learning and communication. The investment schools make in a vibrant online culture is valuable and productive as it sets the tone for the users.

Technical delivery

The role of the ICT coordinator is crucial to balancing technical and alternative solutions. The informed ICT leader will seek network services and software which watches for large downloads, checks file types (eg excessive numbers of videos), monitors bad language and checks the domains of email sent to students. The vigilant ICT coordinator will check student activity of year levels to pick up unusual trends in Internet usage. Systemic groups with

centralised services will often offer some monitoring programs for schools to use.

Professional development

Schools can develop a culture of internet expertise amongst teachers by using online learning as a staff development strategy. Collaborative learning online with teachers from within and other schools will assist teachers to use online tools well, and understand the dangers and opportunities of online culture and environments. Training in content management tools and intranet tools can complement real work online, as teachers develop online content for their classes. Further, teachers can share resources about Internet safety and collaboratively author units of work on Internet safety for various year levels. Teachers need deliberate technical training to recognise students hiding screens, using tabs on a browser, preventing popups, understanding the validity of sites through analysis of URLs, amongst other tips that help to develop Internet-savvy habits for teachers.

Organizing resources

Web links to resources

<http://www.netalert.com.au/>

<http://www.cyberquoll.com.au/hub.htm>

<http://www.nettysworld.com.au/>

<http://www.childsafe.net.au/>

<http://www.news.com.au/couriermail/extras/headstart/>

http://www.cybersmartcurriculum.org/lesson_plans/

There are resources specifically designed to assist teachers to teach about Internet

safety available from the Courier Mail Head Start series, Net Alert and Cyberquoll. These are free and provide great video clips, posters, teaching ideas and activities. They are accompanied by web sites. Further searches of education sites for units of work and teachers' resources on Internet Safety will provide additional resources. This article recommends that a project or task be developed that uses these resources and engages the students in deep thinking and problem solving, rather than strings of activities to deliver content. Resources placed on a well organised intranet will make them more accessible for teachers and promote the connected culture of the school.

System-level response

External advocacy

Systems can support schools by directly marketing positive messages about school efforts to provide safe environments. Using the media who are quick to judge when things go wrong, a positive informative message can be broadcast. Further web sites of educational systems can inform parents about systemic responses to Internet safety, share best practice stories about Internet safety and provide information on how parents can keep their children safe at home. Educational systems can also advocate Internet safety messages and strategies to schools and teachers, informing them of opportunities to directly address Internet safety, share great units and tasks and collate resources.

Policy

Systems can provide policy and policy resources to assist schools to provide safe online environments and encourage safe online practices. The tone of such messages will determine the culture of online educational activity in schools. Encouraging strong online and classroom pedagogy, modern curriculum interpretation and encouraging interactive experiences and online community will promote contemporary curriculum activity. Doom and gloom rules and blockages sends a message to teachers that interacting online is too much trouble. Systems can provide model policy documents and model agreements for staff and students and provide local intranet resources that enable teachers to build safe strong educational environments.

Decentralising control

Educational systems usually provide centrally managed filtering facilities and other blocking software. Although necessary and valued by schools and their communities, the implementation of such systems often errs on the overdone side and often a one-size fits all policy blocks the same access for students from 5-17, each with different educational needs. Enabling schools to edit (including deleting) from 'filtered site' lists would enable local control and customised programs. Systems need to balance systemic responsibilities while ensuring educational valid activity can occur.

Practical ideas

Contemporary schools will increasingly use the Internet and improve the sophistication of what students do online. Providing safe online learning environments is a joint responsibility of systems, schools and teachers in collaboration with the parent community. Investment in the development of safe and proactive habits while using the online computer in an educational context, sits within a framework of decision making. Some practical ideas make the online safety framework achievable for schools.

Current positive responses	Proactive responses needed
SYSTEM — Beware technically driven decision making often makes teaching difficult.	
<ul style="list-style-type: none"> ■ Individual internet accounts ■ Templates for consent forms with completion built into enrollment requirements ■ Varying filtering systems within a firewall ■ Provision of bandwidth to schools 	<ul style="list-style-type: none"> ■ Improved ICT Policy design and implementation ■ Communication of a clear message about internet use aimed to inform parents and assist teachers. ■ Improved management system for accounts ■ Funding of technical support and ICT coordination roles
SCHOOL — Supporting a curriculum interpretation that reflects a modern context	
<ul style="list-style-type: none"> ■ Process for the removal of access privileges after transgressions ■ Strategy and instruction for dealing with inappropriate content ■ School wide filters of student access to internet sites ■ Internet Safety programs, eg Cyberquoll and Netaalert 	<ul style="list-style-type: none"> ■ Development of a specific ICT unit of work specifically about internet safety ■ Supporting the vital role of the ICT coordinator ■ Action learning model for professional development for unit planning, sharing pedagogical approaches to Internet safety.
CLASSROOM — Towards individual accountability and promotion of smart time online	
<ul style="list-style-type: none"> ■ Lessening number of early childhood groups using generic login and password for access to the computer network and internet ■ Teachers developing powerful communication processes when using Collaborative Online Projects (COPs). ■ Lessening use of undirected online free time as a reward for task completion ■ Concern about duty of care and supervision issues and student distractions on the internet. 	<ul style="list-style-type: none"> ■ Individual user name and password culture must be allowed and fostered in all year levels. No generic login is useful. ■ Shift free time on computers to smart time on computers and powerful constructive online activities. ■ Promote student-driven work ethic and personal responsibility online ■ Explicit teaching about internet safety drawing from students own out of school experiences ■ Teachers modeling expertise online and use great teaching opportunities online

Console, game, action! — an exploration of how machinima can be used to teach film making in the classroom.

Kristine Kopelke

Games in Learning Project Officer, ICT Learning Innovation Centre, eLearning Branch
Department of Education, Training and the Arts



A team of senior secondary Film, Television and New Media teachers is exploring the educational potential of digital game-based filmmaking through an action learning project.

The teachers are unearthing the educational uses for machinima within the new Film Television and New media syllabus, as part of the Department of Education, Training and the Arts' Games in Learning Project. The teachers aim to develop a professional learning community of educators to support and inspire other teachers interested in exploring machinima in the classroom.

In the project's initial phase, the team participated in a two-day machinima forum hosted at the ICT Learning Innovation Centre. The forum was led by Australian Centre for the Moving Image (ACMI) screen education team member Vincent Trundle.

Mr Trundle led the teachers through



ACMI screen education team member Vincent Trundle demonstrated how to create machinima using three networked Xbox consoles, a digital video camera and Final Cut Pro.

a stimulating exploration of the history and progression of machinima, a screening of machinima films and sessions on how to create machinima.

This article aims to provide educators with an insight into machinima and to share the team's discoveries and experiences from the forum. It will also inform educators how they can join the team's Machinima Discussion List and access a collection of online resources being developed for the Games in Learning Project.

Understanding machinima

While a growing number of educators have heard of machinima, there is still some confusion about what machinima is and how it can be created. A group discussion with Mr Trundle resulted in defining machinima in the following ways*.

- Machinima is digital game-based filmmaking. It is a convergence of animation, computer game technology and film making. It is filmmaking within a real-time, virtual 3D environment.
- The term machinima defines the collection of production techniques involved in creating films using games-based technologies and the genre of films that are created or defined by those techniques.
- The word machinima was developed by blending the words machine cinema and machine animation.
- Machinima can be created using the existing tools and resources within a game or by using additional hard-



Image from Anna by Fountainhead Studios

Source: <http://www.machinima.com>

ware and software to capture the gameplay.

- Machinima is one example of emergent gameplay. Emergent gameplay involves using a game or game engine creatively in a way that was not intended by the game designer.

Machinima: an evolving form of film making

While the earliest roots of machinima can be traced to the 1980s, the beginnings of machinima as we know it today, using 3D game worlds and engines, began in the mid 1990s. At this time, Quake was released. Quake included tools and resources that modified the game world. It provided machinima makers with the opportunity to create their own sets, graphics, sounds, music and special effects. This freedom sparked a more sophisticated form of machinima, which has led to the production process and genre becoming

more widely accepted and increasing in popularity.

The formation of the Academy of Machinima Arts and Sciences and the development of websites such as www.machinima.com have also provided credibility to this art form. The increased capacity of the web to deliver video content and websites such as <http://youtube.com> can also be credited for an increased interest in machinima.

Today, many games come with inbuilt tools and resources that provide players with the opportunity to capture gameplay and create machinima. Popular commercial games that contain such tools include Unreal Tournament 2004, Half Life 2, The Movies and Sims 2 (ACMI <http://www.acmi.net.au/F7B5031B545445F58DDE39AB-D9B2D050.htm>).



Image from *An Unfair War* by Devin-Quest

Source: <http://www.machinima.com>

Notable works of machinima

As part of the machinima forum, Mr Trundle led participants through a guided screening of machinima works. This screening included early works, works that have gained mainstream attention and recently released works. The following list contains an overview of some of the notable works that were viewed. It is important for teachers to view pieces of machinima in their entirety before screening them to students, as some works contain content that may be inappropriate for student viewing, depending on the year level.

An Unfair War: Created using The Sims 2, *An Unfair War* is a drama that depicts an innocent man using the internet in a war zone to tell his story. This is an Australian example of machinima.

The 1K Project: Created using the

game TrackMania Sunrise, The 1K Project is notable for its original concept. In the work, 1000 cars are combined to produce what is a very interesting visual piece.

The Awakening: Created using The Sims 2, *The Awakening* tells the story of Alan, an avatar in The Sims 2, who has just realised that something isn't quite right in his world. The theme is similar to the film, *The Truman Show*.

Anna: Anna is a short film that chronicles the life of a flower in a gothic fairytale. It was developed in Quake and has won a number of awards.

The Machinima Jukebox on the ACMI website contains an overview of notable works of machinima. Most of the works featured can be downloaded from www.machinima.com.

Creating machinima

The machinima forum also enabled participants to learn how to create machinima. Mr Trundle advised there are many different ways to create machinima. During the forum, the team looked at four different methods to capture gameplay and create machinima films.

Fraps: Fraps is one of a number of applications designed to capture PC gameplay. To capture gameplay, the user sets up keyboard hotkeys, which are pressed to start and stop the capture of play within the game. Gameplay is captured in AVI format to a nominated folder on a local computer. The captured files are imported into any video-editing application to produce the edited film.

The Movies: While *The Movies* is a simulation game that primarily involves the player managing a movie studio, the game also features modes that contain inbuilt tools that allow users to create their own movies.

Movie Sandbox: Movie Sandbox is a graphical scripting tool that enables users to script their own gameplay elements. The application works in conjunction with Unreal Tournament 2004 and allows the user to link different elements graphically in a hypergraph-like fashion. As Mr Trundle pointed out, this approach to machinima has huge potential as it allows the user to position cameras in multiple locations within the game engine and to set up a series of shots that will be captured and automat-

ically put in sequence.

Networked Console Capture: A highlight of the forum was the demonstration of how gameplay can be captured and edited using networked Xbox consoles. With three Xbox consoles networked through a switch, the team played Halo while the gameplay was directly captured into Final Cut Pro for editing. This showcased how machinima could be created collaboratively within a group setting.

The Games in Learning Project website contains further information and resources on each of these methods for creating machinima.

Moving into phase 2

The forum culminated in team members making plans for projects that they will implement back in their school environments. In coming months, the participants will purchase hardware and software that will form a machinima kit for use in their schools. Once the projects are implemented, their work and discoveries will be shared through the Games in Learning website. A series of professional development opportunities will also be made available in a number of locations throughout the state.

Get involved

Educators interested in joining the team's professional learning community on machinima can join the Machinima Discussion List by subscribing at: <http://www.education.qld.gov.au/listserv/subscribe.html>

This list aims to enable educators to share their work and seek support as they progress in this area. Members of the discussion list will also keep abreast of upcoming events and additional opportunities that arise through the project.

Online resources

The following resources provide online information and resources on machinima and some of the games and applications mentioned in this article.

The Games in Learning Project Website
<http://www.gamesinlearning.com>

ACMI
<http://www.acmi.net.au>

The Academy of Machinima Arts and Sciences

<http://www.machinima.org>

Machinima

<http://www.machinima.com>

Movie Sandbox

<http://www.moviesandbox.com>

The Movies

<http://www.lionhead.com/themovies/index.html>

The following sites were used to clarify and source additional information for this article.

The Academy of Machinima Arts & Sciences

<http://www.machinima.org>

ACMI

http://www.acmi.net.au/explore_games_resources.htm

Wikipedia — Machinima Entry

<http://www.en.wikipedia.org/wiki/Machinima>

*This understanding is influenced by the work of the Academy of Machinima Arts and Science



A Screenshot from Movie Sandbox
Source: *Movie Sandbox Site at http://www.zeitbrand.net/mediawiki/index.php?title=What_Is*

Open versus proprietary — another view

Dr Gary Jacobson

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Abstract

This paper offers some important points of Social and Ethical discussion arising from the current environment of competition evident between Proprietary and Free software. Specifically, it briefly summarises the tenets of each faction and attempts to place the contenders into a competitive framework for which the Nash Equilibria may provide some useful hints at eventual resolution. Contributory anecdotal evidence to points raised in this paper is derived from on-line exchanges [qsite-lan, 2004-2005]. This paper concludes with a rationalization of the current position and some reasonable conjecture regarding possible future directions the current 'conflict' may take.

State of Play

Competition characterises almost every part of the history of software development. Competition for the development of elegant theories. Competition for practical and powerful methods of implementation. Competition for the admiration of friends and colleagues. Competition for money and the power it can bring. Competition for hearts and minds? Since software development is a well defined and refined theoretical and practical discipline, we tacitly accept that this, in itself, restricts the gamut of permissible 'beliefs' about how software is written and distributed. To think otherwise would be to try and present the field of endeavour as warm, fuzzy and ill-defined, in the opinion of many observers. The various competitive aims listed above cannot, of themselves,

determine the complete range of beliefs of those in the field, however. In the past 20 years, we have seen two philosophies come to prominence. One can be labeled a 'monopolistic, sell-at-all-costs' philosophy; the other a 'free', 'idealistic' or 'crazy' depending on one's personal intuitions in the matter. Each of these

It has been assumed by a majority of consumers during this time that the Microsoft Desktop and associated software is the 'normal' desktop for the personal computer.

schools of thought has produced useful software, both generic and specific, and with the recent rise of Free Software above the competitive horizon, particularly on the desktop, battles for markets and minds are now enjoined in a sufficiently sustained way as to be observationally interesting to philosophers, market analysts, educators, politicians and anyone wanting to save a buck or two! It is a battle that interests us for the majority of this paper.

The World as We Know It?

'The pre-paradigm period, in particular, is regularly marked by frequent and deep debates over legitimate methods, problems, and standards of solution, though these serve rather to define schools than to produce agreement' Kuhn, T.S. [2]

Kuhn, in speaking of scientific revolutions may well have been referring to the past 20 years and, more intensely, the last 10 years, of the debate between

vendors of proprietary software and Free software. There has been, for some 15 years, a perception of a 'normal' market in place for PC desktop software in so far as proprietary software vendors are concerned. The largest player in this market, Microsoft, to all intents and purposes, is just a detail (!), in that the

market itself has not deviated very much, if at all, from that which is assumed to be the very model of a free enterprise system working in the normal way — sell, beat the competition, sell, develop, sell, make lots of profit. It is anything but normal in respect of the size and control which Microsoft has gained and exercised over the market during this period. It has been assumed by a majority of consumers during this time that the Microsoft Desktop and associated software is the 'normal' desktop for the personal computer. I conveniently omit Apple desktops from the conversation for the moment, thus neatly reflecting mass market consumer attitudes also. Microsoft software has become so ubiquitous that we can go further than the adjective 'normal' and ask — 'What need we know in order that we apply the term 'operating system' ?'; without provoking too much argument in a colloquial exchange with the man

on the street, even not unequivocally 'knowing' what an operating system may be. This is a very old type of question and merely a re-casting of a more general case put by Ludwig Wittgenstein [4] over 50 years ago. For Wittgenstein, and 'operating system' would be identifiable as a member of a natural family in which members would have criss-cross and overlapping relationships. The existence of these relationships would account for our identification of the corresponding entity — the 'operating system.' Wittgenstein unfortunately did not enlighten us further about the sort of world he thought was needed to support the kind of naming process that he proposes!

It would be intuitively, and operationally, more pleasant if we could satisfy some set of rules, or at least assumptions, and thus simply declare — 'Ah! That spotty, thin thing in the corner is an operating system.'

If only it was possible to apply this concept with some sensibility, we might be able to define 'operating system' just that much better in the public perception and thus proceed immediately to the arguments of competition theory. Alas, what has been available to the average consumer, until very recently, in the way of a 'natural family' of entities that we can, arbitrarily label 'operating system,' beyond the Microsoft 'normality'? We must answer — Very Little — not forgetting Apple Computers Inc. even for a moment! The situation almost fits Polanyi's [3] 'Tacit Knowledge' concept in so far as the overwhelming majority of personal computer users have acquired so much familiarity through exposure that they simply cannot be asked to articulate explicitly what they might conceive to be an 'operating system' beyond Windows®. It would be intuitively, and operationally, more pleasant if we could satisfy some set of rules, or at least assumptions, and thus simply declare — 'Ah! That spotty, thin thing in the corner is an operating system.' In the wide world of the modern operating system market there is no palpable set of rules available to the consumer. Indeed, professionals in the

field of Computer Science could sit and debate the meaning of the phrase 'operating system' for considerable time before a set of firm identification rules (or even loose criteria) would emerge from the discussion. Subject this to experiment with a given set of I.T. Professionals if you dare! Light blue touch paper and retire to a safe distance! The consumer is not generally an I.T. Professional and to suggest 'rules of identification' to a consumer would be mostly nonsensical. The consumer is simply interested in the applications that run on a given operating system. In a sense, the operating system does not exist for the consumer at all! To the consumer, the operating system is the

interface. This is the prevailing position in today's marketplace and that interface is the Windows desktop. Fortunately, others have begun to seriously play the interface game on the personal computer, including somewhat belatedly, Apple Computer Inc. which has recently eschewed its historical position and allowed its software to execute on commodity hardware.

Saved(!) At least philosophically? We can return to Wittgenstein's concept of a 'natural family' [4], since we now have more than one example to consider, in a similar environment. We can even parallel any more lofty thoughts we might have on the subject with a search for family resemblances in interfaces. This at least should satisfy the operational expectations for many consumers. More importantly, by provoking a crisis of comparisons, contrasts and ordinary name-calling, we can begin to cut away at the almost religiously held concepts in several schools (camps?) of precisely what constitutes an 'operating system' and the significant properties of a good 'operating system.' In the modern on-line discussion list environment, it is relatively easy to carry out anecdotal, ad hoc investigations of the prevailing

beliefs, assumptions and 'rules' as many of my qsite-lan colleagues and correspondents will be able to attest. Most importantly, by drawing an almost empathic flow of strongly held opinion from a number of commentators it is possible to action some of the ideas about 'natural families' of which Wittgenstein spoke so many years ago. Given the numerous instances of similarity that arise from such torrid discussions, one can comprehensively test one's own intuitions on the matter of what defines an operating system in the public mind. Certainly one becomes more careful and adept at thinking about the properties of such an entity within a small 'family' structure to such a degree that one is able to justify valid means of comparison beyond that of mere belief. This thought process then leads one to the interim conclusion that familial resemblances may be strong, but some family members are more talented in certain areas than others. Consequently, we are led back to thinking about which talents are seen as most useful by the consumer and which philosophy we choose to follow, given that this consumer-led pragmatism must be satisfied.

Crisis — What Crisis?

So now, to the crisis-provoking development of Free software as typified by GNU/Linux. We can now specify the arena for the competition to occur, in so far as the ordinary user of the software we are examining is satisfied of the family resemblances between these two (or more) collections of software well enough to be confident in assigning the label 'operating system' to each. This is not a competition based on technical arguments and attributes. To many individuals, this argument is already settled in favour of one or the other, although it is certainly not clear that observers in the field whom one would normally consider to be of high technical competence are not uninfluenced by less technically relevant accoutrements such as the graphical user interface. However strict our determination may be to examine only that which is technically and directly relevant to a given task, there are few who can totally resist a 'pretty face' so to speak, and the

marketers are well aware that this is so.

It is here that we come to the first crisis provoked by Free software and the technical competence of GNU/Linux in general. This crisis we may label 'a crisis of technical conscience', in which a person is charged with the execution of certain duties requiring application of software we now choose to call an 'operating system.' Using technical rules not within the consideration of those to whom they may answer, the 'technician' makes a decision in favour of GNU/Linux for a particular implementation. Being mindful of other matters such as support and cost the technician still comes down in favour of the GNU/Linux software. The technician presents the case to those charged with purchasing and adoption decisions and they argue in favour of the Microsoft or other proprietary alternative. We cannot say 'equivalent' since the two are quite divergent in modes of implementation, not just technically, but in terms of after-implementation support. 'Alternative' however, is a word we can usefully employ here without engendering prejudice. The technician is bound by organizational protocol and regulation to defer to the decision makers in senior positions, or, at least bound to defer to the majority decision, should such a mechanism be operative in the true sense. The technician is not a solipsist and therefore defers to the majority decision. 'Perhaps I can't see all the angles?', the technician ponders. Then conscience intrudes upon the pragmatism and the technician reflecting on all of their knowledge and research of the question in hand realises that they have betrayed a self-evident (to themselves) truth that their personal choice and perhaps that of their close colleagues was the optimal solution after all and 'management' was wrong. In time, they become convinced of this and begin to regret having relented more easily than they might have. It is one of the older dilemmas known to humanity — doing what is right versus doing what is easy.

The next crisis encountered is usually that which Kuhn [2] would immediately have dubbed a 'paradigm crisis.' The new system offers a new pattern of working, a slightly different way of achieving the same ends. However, as with all crisis-provoking changes it is not simply these

considerations of overt difference that come into play. GNU/Linux and Open Source in general offer a further crisis of ethical and even social consideration that does not exist in the world of

However strict our determination may be to examine only that which is technically and directly relevant to a given task, there are few who can totally resist a 'pretty face'

commercial, copyrighted software. At least, it offers this provocation to those who inhabit only the commercial, copyrighted software world presently dominating the world. It is this crisis, to which the ordinary consumer is seldom, if ever, exposed. It is this crisis, based on fundamental freedoms to copy, distribute and alter that current commercial giants so fear. Heaven forbid that power should really be in the hands of the consumer! If it was simply a matter of the GNU Public Licence allowing software to be given away for no monetary cost, perhaps it would be easier for the currently dominant software giants to ignore this model of software distribution as a mere nuisance. One can, after all, ask for any amount of money for a GPL program, if one desires. That is, you can sell such software on more or less commercial terms — except for the licence itself, which is anything but 'normal' in so far as the current retail model is concerned. One must confer on the receiver (purchaser or otherwise), the right to copy the software in so far as it may please them to do so. One must provide directly, or indirectly, ready access to the Source Code of the software. One must confer these above mentioned rights upon the receiver of the software no matter how many times the software is passed on. Surprisingly, this licence does not prevent a person or company from keeping alterations to source code a secret — but those alterations must clearly be a secret in the truest sense since the secret is revealed if the software is sold or given away. If your software gives you some advantage in the marketplace then you can make something of that by applying that software to out-compete your rivals. Clearly, today's dominant software

companies have a crisis of deciding how they can make money without selling a piece of software more than once! This is a self-imposed anxiety since they need only change their focus to a service-ori-

ented perspective from the current product-only perspective. Coincidentally, these same companies, in the very act of releasing source code also relieve themselves of a significant amount of development work and costs which would be placed upon them as sole proprietors of the software. Naturally, this implies giving up total control of the development of the software, and requires the company to co-exist with others in the development and maintenance of the software. They must learn to help their neighbours properly, even though they may charge their neighbour a fee for that help. There can be no real argument that the open development model works. The Free Software Foundation and Open Source communities have shown that it is quite possible to develop entire operating systems, Office Suites, Web browsers, e-mail clients, Web Servers and thousands of other powerful, useful pieces of software using co-operation, sharing, debate over directions and user-requested features as a guide rather than hierarchical modes of development answering more to commercial imperatives of the moment than to the needs of the ordinary users of software.

In spite of these latent crises, the software world has moved in a more evolutionary than revolutionary way. Not entirely surprising, since the consumer is largely excluded from the debate and there is no 'killer application' present, today, or on the horizon, that is identifiably unique to one of these development realms. It tends to be a rampant consumer-led enthusiasm that builds product success, as much as any pretense to technical excellence in today's world. We need only consider briefly the history of the Apple iPod to see such an example that is not within

the software debate. There are many competitors, but only one iPod in the public mind. What can we say about this particular success? Only that the Apple approach must appeal to a certain individual sense of ‘neatness’, ‘suitability’ or ‘rightness’. Some form of operational aesthetic that other similar devices simply do not possess, even though these competitors may possess a longer battery life and other clear material advantages. It does not appear that Free or Open software has aesthetic appeal over that of commonly available commercial software, although it may be at least equal to most of the latter. Indeed, it is often the technical competence of a piece of software that is

various strategies, some of which may lead to greater advances or benefits may be ignored completely or not attain sufficient momentum in the market to have the influence that their degree of excellence may otherwise dictate. This situation was implicitly recognised in the various anti-monopoly laws that came into force in the U.S. in the early part of the twentieth century, antedating Nash’s formal pronouncements on the matter. Perhaps then, this is not such a non-intuitive approach after all?

According to the Nash model the present situation in the commercial software market is unstable, regardless of one’s philosophical position. A continuance of this situation will be unlikely to

How is the game between ‘commercial’ and ‘free’ software likely to be played given these new insights?

admired and publicized in the Open Software world, in spite of any cosmetic insufficiency. To view the competition occurring between common commercial software and Open or Free software (also potentially commercial) and see change occurring we will have to observe in a different way.

A Matter of Balance

We should consider, perhaps, the Nash equilibrium concept formalised by the famous American mathematician John Nash some 50 years ago. In essence, this is simple —

‘a system of interacting agents is in equilibrium if each individual’s strategy maximises their own expected utility given the strategy of others’.

It is this concept that has long given the lie to the idea of a ‘team’ of people working for the good of the organization above all else. That is a strategy for non-optimal success, or even outright failure. There must be ‘something in it’ for the individual, as it were. This, admittedly informal, definition has surprising converse consequences. Even more colloquially stated, the converse says that the overwhelming success of one competitor, clearly a non-equilibrium case, is actually bad for business! Overwhelming success or dominance throws the ‘game’ out of equilibrium and

lead to economic cataclysm, but it will certainly lead to non-optimum software development and non-optimum market development — even for Microsoft! The ‘ripples’ from this state of affairs clearly affect the computer hardware industry and other related businesses. This trite description does not do the current situation full justice, of course; nevertheless, it is a reasonable summary of some of our operational intuitions in this area when seen through the lens of the Nash model.

Until very recently ‘no one has presented a satisfactory explanation of what dynamic process or processes actually yield Nash equilibrium when a system begins in out-of-equilibrium conditions’ [1]. Clearly, such an analysis is of interest in the current world software market. In the terms quoted above, this market is clearly ‘out-of-equilibrium’. Foster and Young [1] propose ‘a simple learning process that leads to Nash equilibrium and only Nash equilibrium in any finite game.’ Their proposal relies on the players testing and rejecting hypotheses about the opponents behaviour. If the tests are ‘sufficiently powerful and sufficiently rational responses (not perfectly rational) occur then the “play” is close to Nash equilibrium.’ [1] The method does not rely on ‘prior information about the opponent’s payoffs or their

intended strategies’[1]. In short their result is based on classical statistical hypothesis testing. It falls into three parts, summarised as follows: [1]

1. At each time a player has a model or hypothesis about the future behaviour of the opponent — some conjecture over the probability of various future actions.
2. From time to time the player compares their model with recent past data. If the data is unlikely to have occurred given that the model is true (according to some hypothesis test), the model is discarded and a new one selected; otherwise the model is retained.
3. At all times the player chooses a smoothed best response to their current model, optimising given the current forecast.

Foster and Young present complete mathematical arguments in their paper, and computer simulation of several common competitive scenarios. This level of detail need not concern us for this discussion, but suffice for further argument here to say that the method has been shown to be sound and correct. Their proposed learning process is characterised, for most games, by relatively short periods of ‘searching’ for models and longer ‘stable’ periods where game play is close to the unique Nash equilibrium. The approach is very robust in that it applies to learning processes that react to player’s attempts to learn it and is independent of game structure or information available to the players. The only slightly amazing circumstance is that such a straight forward approach to learning has been overlooked until so recently.

What are the consequences of all of this for our current view of software development? How is the game between ‘commercial’ and ‘free’ software likely to be played given these new insights? It is too simplistic to throw one’s hands up and say — ‘Que Sera Sera’. These questions are also too global, in every sense, to be answered by a single economic model. There is useful guidance to be gained from this model though. Firstly, it is now evident that some of the major competitors in the world software market (e.g. IBM, Oracle, Novell, Sun) are adopting significant elements of Open Source and even GPL software

into their business strategies. This has introduced a fundamental factor pertinent to all games — that there must be players using truly different strategies and subsequent tactics, or at least, components of truly different strategies and tactics, and not merely partaking of sub-strategies in sub-games of the existing model, being at one and the same time, fundamentally unwilling to alter that model significantly. These large software companies are in a period of search for a business model that is sensitive to ‘payoff’ but which is also very sensitive to the behaviour, and future behaviour, of the largest player, Microsoft. There is certainly ‘conjecture over the probability of future actions’ [1] which Microsoft may take. This satisfies Foster and Young’s first learning criterion. The second criterion is easily met, in that these companies are constantly tuning the business model to be more competitive. The only critical point is that they do this semi-quantitatively, at least, and not reduce their ‘hypothesis testing’ to mere guess work

and intuition about the competitor. It seems that a modern company is not likely to rely on ‘intuition’ and ‘gut feel’ alone. The third criterion of choosing a ‘smoothed best response’ is the most difficult to meet. Although non-optimum response to game conditions is allowable, it is clear that not many errors will be allowed before the system degenerates to a non-equilibrium state. The software world is now in a position where it can be observed that the learning process required to reach the Nash equilibrium can occur, resulting in the optimum outcomes for every player. Implied in this outcome is the optimum result for the consumer at large.

Conclusion?

Finally, however convinced we may be of the convergence of the various software development models, whether by hard statistical process or philosophical inclination, we are now at least afforded a means by which the competitors can learn equilibrium behaviour with intent, starting from existing positions that are

wildly divergent and out of equilibrium. To say that the dominant model will remain dominant and others are too divergent to substantially succeed is to rashly deny the mathematical indicators, our own senses and the hard lessons of history.

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National Computing Studies Summit



Open Learning Approaches to Computing Studies

Date: 4, 5 October 2007

Venue: Australian Science & Mathematics School, Adelaide SA or **ONLINE** from wherever you are located. (NB online participation is free, however places are limited)

Who: The Summit is targeted at teachers of Computing Studies in the senior secondary years (yrs 11-12) of schooling

What: The Summit will explore ways of delivering computing studies curriculum and resources via a range of online technologies and pedagogies. The program includes pre-summit industry visits, keynote (Alan Noble, Engineering Director, Google Australia) and a range of invited speakers from across Australia.

Details: Full details of the Summit, including online registration are at www.acce.edu.au/item.asp?pid=1214

For further information: Ian Webb, ACCE Project Officer, email: ian.webb@ozemail.com.au

Indigenous students engage in education through a blog

Louise Alexander



A challenge to pick up jellybeans with chopsticks might seem a roundabout way to get rural and remote students engaged in education—but it worked for Louise Alexander.

Louise Alexander, an Advisory Teacher, Indigenous Education, is based at the Darling Downs South West Queensland Regional Office in Toowoomba. She has four groups of Indigenous students enrolled in the Learning Place's Ollie Up program.

'I was planning a holiday in China,' Ms Alexander said, 'and was concerned that the students were only two weeks into their program. I wanted to keep the momentum going, and I wanted to engage with the students while I was away.' Ms Alexander decided to use a blog. 'I created a blog area in Blackboard

through the Learning Place,' she said. 'Then the students spent the first two weeks of their Ollie Up program learning to use the blog.'

Once Ms Alexander arrived in China, a Chinese friend assisted her to access the blog. 'That was necessary because when we got onto the internet, all the information was in Chinese!' Ms Alexander said.

The blog began—and the students responded enthusiastically.

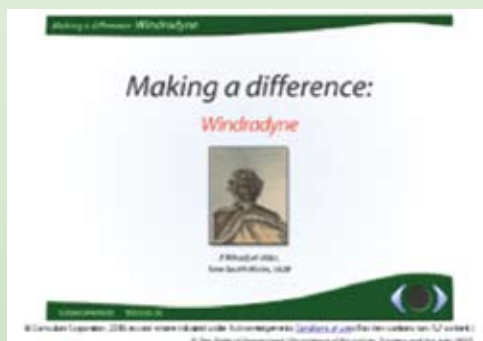
'They had all kinds of questions! A student from Roma wanted to know what the food was like. I took lots of pictures of food and put them up on the blog.' Other questions included what the cars were like, and how Chinese New Year was celebrated. Ms Alexander said the blog included a discussion forum.

'I might say I'd be visiting the Great Wall or the Forbidden City, and ask students to find out about those places. Then the information was entered and shared with other members of their group.'

Ms Alexander also put instructions on how to use chopsticks on the blog. On her return, she brought the students gifts of chopsticks, and challenged them to learn to use them to pick up (sugar-less!) jellybeans.

The project was an excellent way to give students a 'real life' reason for using a blog, Ms Alexander said. 'It also included them in the fun of my holiday. I was so excited the first time we made contact! You're in another country, surrounded by another culture—but still connected to the kids.'

TLF (The Learning Federation) Learning objects



Making a difference: Windradyne
Students explore Australia's Indigenous heritage through the story of Windradyne, a Wiradjuri warrior and leader. (People using this learning object should be aware that the material may include references to Aboriginal and Torres Strait Islander people who have passed away.)



Mystery object: Torres Strait Islands
Examine an unusual object from the Torres Strait Islands to discover its origin and purpose.



'Turtle cloth' banner, Sydney 2000 Olympic Games
Silk banner designed by Jeffrey Samuels for the opening ceremony of the Sydney 2000 Olympic Games.

Students become stars to learn about Australia

Scott Ward

A unit of work that turned Year 5 students into television writers, production crew and presenters has been a great success at Browns Plains State School.

Year 5 teacher Scott Ward said that he had been concerned by what he saw as a lack of knowledge about places and locations in Australia in his class. His idea was to use a Getaway style television program to encourage students to research and present television segments on Australian places. The reporters would be filmed, 'green screened' against a background of the various locations.

'The difficulty was the technology,' Mr Ward said. 'I had to learn it as I went along!'

The students worked on the project for a term. In five groups, they chose a location, researched it on the internet, wrote their scripts and then made an appointment with Mr Ward to do the filming.

'The groups coordinated with each other online,' Mr Ward said. 'I set up a blog and a forum through the Learning Place. The groups needed to coordinate their scripts, as each had to write a 'throw' to the following segment. Real television productions need to do that, and they might have to do it across the world, so we did it online too.'

Students also wrote weekly individual blogs on how they felt the project was progressing, as a whole and personally.

The completed program was presented at a school assembly. 'Other classes were just blown away,' Mr Ward said. 'Every one was asking how we did it. I said, 'Ask the kids in the class.' Other classes are now learning from them.'

Students have continued to write personal blogs in 2007, again working through the Learning Place.

'The best thing for me,' said Mr Ward, 'was seeing the students talking to parents, teachers and the principal about how they did it. Their self esteem absolutely soared!'

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False gods or holy grail? delivering IT in schools

Bob Fifoot

HoD (IT) Lockyer District High School



My hot keys: don't push

You need to know where I am coming from. I believe that it is my job (and yours) as a teacher to help students know, understand and learn. So information technology (IT) should be used to help students know, understand and learn; but know, understand and learn what? Well ...

It is the job of teachers to help students learn the hard bits. It was revealed to me once that gesture is a form of communication, and part of our work is to help students learn how to communicate. Even so, students do not need our help in using two-finger gestures.

Finally, edu-jargon makes me very cross — sorry. I cannot bring myself to observe, reflect, support or have

conversations. I am rather good at watching, thinking, helping and talking.

False gods: Do you have to!

Sometimes you have to ask yourself whether it is all worth it.

Just laugh — it is soooo funny when students swap keycaps around, graffiti splash screens, reverse mouse cables, pull cables half out, fill their home drive with MP3s (all pirated) and run games from their USB drives.

Don't teachers ever watch what the students are doing? Why do teachers just sit there in class doing their own keyboarding or giving all their attention to a single student while all the other little thugs do what they like?

IT is being squandered on Mickey Mouse subjects, poor management and

ineffective use. As one HoD said on a QSITE mailing list:

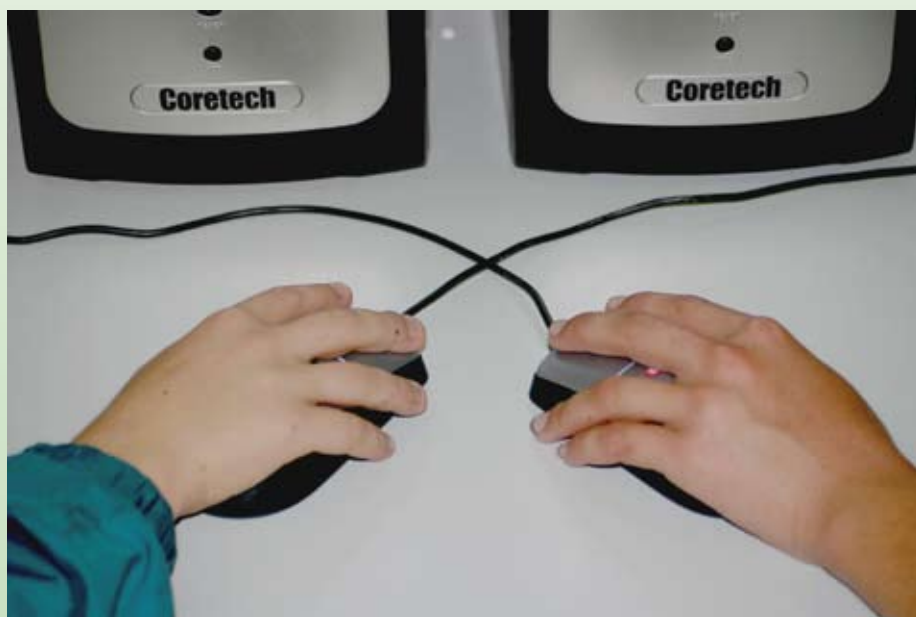
It seems to me that computing as a subject has always been redundant, but the unsupported statement that "computer skills will be essential in the future" has led to schools spending hundreds of thousands of dollars on equipment that has been under-utilised because it was dedicated to teaching "the basics" to every possible student.

As far as IT goes, teachers are commonly ignorant, inept and ineffective. Sadly they are also badly time-stressed, due to over-commitment, excessive job demands, family responsibilities or, occasionally, self-indulgence. So they have no time to learn.

Teachers evade learning to use software. Even teachers charged with teaching IT say things like, 'The previous teacher used Platypus Multimedia but I have only done a DreamWeaver course so just buy that for me.' Then they just buy tutorial booklets and make the kids work through those. Teachers and other staff, who need to know, can have miserably little system knowledge, even of skills like copying files and making folders.

School-based IT curricula, especially in the Junior school, are likely to be built on whatever IT skills their teachers possess, rather than on an awareness of student needs. The focus is often on the glitzy aspects, like PowerPoint transitions or WordArt. It keeps the kids happy.

Does any subject really need 100% keyboard access? Admittedly, on the odd occasion, the students run around randomly with video cameras, but with



no prepared storyboard, no shooting plan and no framing ideas.

The emphasis on IT in schools is often misdirected. IT is easy to use and will get easier, so why do people make such a big fuss about video editing, PowerPoint (even with Producer), photos (the world is awash with junk photos), and multimedia? It is just for their novelty.

We should assess the content not the bling. As another HoD said on the same QSITE list:

Further, in terms of assessing multimedia presentations, I believe that viewing the end product is only a verification of the process students have gone through. The process involves a purpose, a client, an audience and planning. This is what needs to be assessed and not the end product. How many times in the real world do Multimedia/Web/Whatever designers create a product without a purpose?

Allow me to suggest a good career move: learn IT skills. There is not much competition. Then flog them as innovative projects for all they are worth, but be somewhere else by the time any evaluation occurs.

In schools cash is scarce, so face reality. We do not need the latest/greatest version of Windows or Office for students to learn. You don't need Vista and you don't need Office 2007. Prospective employers actually do not require us to keep 'up to date'. Provided students have general perspectives, when currency really is needed a four-week TAFE course will make any necessary difference.

In this environment, there must be a huge temptation for us as IT leaders to simply arrogate resources and configurations to our own subject area (because we can), rather than sustain an honourable commitment to equitable sharing of scarce resources across all disciplines.

Does all this sound bitter and negative? I am trying to be realistic and recognise the barriers that stand in our way. IT really can help our students learn, but you cannot get there from here if you start from somewhere in your dreams.

HOLY GRAIL: Eureka ...

Delivering IT in schools is a thankless task. People only notice when things go

wrong. They have no idea of the huge number of hours you can put into the job. While you slog on at school, they sit at home watching the football and thinking that everyone does the same thing.

So trust yourself and be your own judge. Know within yourself when things are going well, and you have just



set up a new teaching/learning system that has the kids on task, and it is two days until the next deadline and you have finished the stocktake, and just glow quietly inside.

Administration: Physician, heal thyself

IT leaders need good administration skills. We must juggle bookings and orders and sudden emergencies and diagnosis and repairs and new software installation and new software failure and teacher induction and student accounts and lost passwords and calls for help and audits and the new MOE/SOE and EQ policy and ... teach our own classes.

If you are not a good administrator, try these:

- make people do tasks and use computers the same way every time
- have a place for everything and everything in its place (my mum told me that)
- make lists — things to do / account details / bookings / everything
- make notes of how each problem was solved — what was wrong and what fixed it

- especially design a standard workstation build. Keep notes of all the installation steps, and whenever new software is installed, add that to the build notes for next time.

Teaching: Repeat after me ...

We do not need an atmosphere of frenzied IT excitement in classes. A

teaching strategy that is built on the excitement of new technology is doomed to failure because the new quickly palls. IT should be used as part of learning, not just for motivation. We should design tasks, problems and projects that require repeated use of IT skills and then teach the skills as a way of responding to the challenge of the task.

In particular, students need to understand what the software is doing for them, what it is used for. They should be able to explain how the task could be done by hand if the computer were unavailable.

In High Schools, Year 8 needs an introductory orientation because the students come from so many different primary backgrounds. Even so, the aim should be to establish a basic set of skills on which students can build when the need arises. They should use the skills to solve problems and meet challenges. One HoD, posting to a QSITE list, said it like this:

Basic skills like keyboard skills (as distinct from typing skills), file management, simple document and presentation skills are necessary; however teaching skills

in isolation is questionable. ICT at junior secondary is basically a tool and nothing more. I do not believe in having courses in Year 9 for advanced handwriting.

The multimedia debate is interesting. I am concerned that 'high level software' may be taught because 'we can' and not because there is a reason. Teaching software in isolation is fraught with danger; a purpose is always needed for teaching and not just because we can.

The Year 8 orientation should seek to equip students with tools needed in other learning areas. Projects from other subjects can even form the purpose for learning. Skills could include:

- Network orientation (school policies, logon/logoff, space limitations)
- Simple file management (folders, move and copy files, delete files, file size)
- Email and student netiquette
- Internet searching and security
- Simple word processing (word wrap, paragraphs, text alignment, bold, tab tables)
- Placing images in documents and the ethics of image and music use
- Proof reading and spelling correction
- Presentations (PowerPoint)
- Basic keyboarding (typing without looking)

Access: let me in

Providing sufficient access for all classes, students and teachers is the bane and pain of every IT leader's existence, even when teachers do not waste access and use IT for wholly genuine teaching activities. But look around, there are ways.

Start with an emphatic school policy of equitable access to computer rooms and resources for all subjects. Subjects that use 100% keyboard access will continue to demand it of course, but you can hope that a school ethos will emerge. Most users will welcome your attitude.

Negotiate with the school timetabler to implement this policy. Sometimes there are no other rooms available and classes are dumped into computer rooms, but teachers who try to bypass the policy by direct negotiation with the timetabler should be gently redirected.

Run a booking system of course. We use BookIt!. The system displays current

room and resource allocations. Teachers can then book any vacancy in computer rooms. Some classes deployed to computer rooms do not always use the computers. Identify these cases (use a different colour) so that hopeful users can see which teachers are vulnerable to negotiation.

Impose a book-ahead time limit. We use two weeks. This keeps any single user from hogging a timetable slot by making repeated bookings far ahead.

Provide bookings in blocks of time. Teachers who try to book far ahead have a point. A single lesson in a computer room may not be very productive. Bursts of concentrated activity are a more effective learning environment than a long-term trickle. So have a system that allows a teacher to negotiate a block of time, such as every music lesson for 8A for a week. This is simple to manage, because the booking manager can book further ahead than the standard two-week limit. We work on blocks of one week (five lessons). This allows teachers to design a project of a suitable length. If need be, students can get extra access time in breaks.

Provide Scholar Time. A computer room is right next to my staffroom. We make it available to students for school work and projects from 0800 to 1600 each day. Supervision is by playground duty and sporadic checks. Initial vigorous enforcement of the rule about school work and projects helps. Students sign on in the room, and all their logons are recorded (they do not know that). They come and work.

Be sure it works. Access is scarce so when the class arrives, they must be able to get straight down to work. Check all the computers every morning before school, fill all the printers with paper, have a simple, direct method of reporting failures (phone maybe) and respond quickly.

Systems: wheels within wheels

Your system is the way you deploy and configure your IT resources.

Using a computer must be intuitive and simple for the user. It should be difficult for the user to make things go wrong. Saved files should automatically go to the right place. Windows should not open minimised. Software should open with a standard configuration, not with all the fancy changes made by the

last know-it-all user.

This means that software must be fully configured when students come to it, not just installed with the default settings. For example, Internet Explorer must have Flash, Shockwave, QuickTime and Acrobat Reader already installed.

Access is scarce. Deploy computers across the school so that they are in full use all the time.

Offer rooms (30 computers), pods (10), pairs (2) and laptops. Change the numbers to suit your own class sizes.

Think about furniture layout. Wrapping will get cables out of the way. Avoid window glare on screens. If computers will be used by students in groups, do not bunch the computers together. Many teachers like an arrangement with the computers around the periphery of a room and student tables as a teaching space in the middle. Some rooms are too small for this.

Have data projector / laptop kits for student presentations. Do not squander a full room of computers on one student making a presentation of his geography project. The confidence of one HoD on the list was invigorating, when he said:

A few years ago we set up a room in the library and called it the Presentation area. It had the data projector set up in the roof and connected to a computer and DVD/video player. So it was an area where classes could go to watch movies, student presentations, videos and so on. It was so successful that we then set up one of the English classrooms with a similar setup, then a SOSE classroom, a Maths classroom, a Home Ec. classroom, and even a room in the PE demountable.

With the cost of the projectors around the \$1000 mark we asked staff to think outside the square a little when putting together budgets — so rather than having every computer lab with 25 computers, maybe it was better to have 20 computers in some labs so that a computer and data projector could be set up in these presentation areas — because often times you go past a lab and five or six computers are not being used because it is a smaller class. Some subjects want the students to work in groups so an area with 8-10 computers is all they need. So by having a mix of deployment models (big labs, medium labs, pods and single computers in presentation areas) you hopefully cater

better for all needs.

Use student USB drives for storing large files. The difference between home and school computer resources is widening. At home now, the student has access to at least 50GB so students create huge projects without any thought given to file size, and they resent being constrained at school where we just cannot provide this sort of facility to hundreds of people.

Remember to tell teachers what is available, repeatedly. Teachers will not read official school documents such as “Facilities available at this school.” They may not even ask when they need something (and so use a whole room for one presentation computer) so:

- anticipate their needs:
 - *student logins are needed on the first day*
 - *presentations concentrate at term's end,*
 - *report writing occurs at semester's end*
- have resources ready (data projectors, USB drives, tutorials)
- now they need you; that is when to tell them

Write a set of HowTo files for users of the system. Even if your system is intuitive, there will still be special, local arrangements. The tutorials can be used by both teachers and students.

When you write HowTos, use short sentences with lots of numbering and dot points. Save your work as a PDF file. It will last longer. Users can view the target application and the help file on the screen together, flicking from one to the other with the task bar names.

Try these for subject matter:

- Submitting semester reports
- Basic PowerPoint
- Charts in Word
- Adding graphics to reports
- Managing photos
- Managing video editing
- Connecting a data projector
- Using email
- Searching the Internet

Helping teachers: he ain't heavy ...

Teachers must get active, on the spot, easily available help. All the other things I have said are just there so you can get a chance to help teachers. This is how students come to use IT for knowing,

understanding and learning. No, I do not know how you will find the time.

Use the same screen layouts and software settings for all users, even yourself. That way you have some chance of responding to cries for help on the phone. Most users are accustomed to having full control of their computer at home, and doing things their way. On a school network, users have little authority and must fit in with the school style. They can become quickly frustrated when things go wrong. Do not weaken and let them change things, but do give help quickly. This will minimise the feeling of powerlessness and frustration.

If you are an IT leader, I hope you paid attention to all your teachers at school. Here are some ideas:

- you need a wide range of knowledge and understanding of subject content and method
- you need an openness to changes in styles of teaching / learning
- go around watching how different subjects are delivered
- meet teachers where they are at, refreshingly competent or diffident almost to tears
- help them even if they appear to waste much of their students' time and resources
- watch for curriculum ideas outside your own area on mailing lists and at conferences

It appears that a teacher's use of IT develops naturally along a path like this: *ignorance > personal use > educational utilities use > teaching use*

Travelling this path can take a long time. Circumstances will force a teacher straight onto the last step. In that case, the teacher should practice before hand and become thoroughly familiar with the focus software. Usually this will not happen, so be prepared to keep the teacher company in class for a start.

Theory recognises *Just In Case* and *Just In Time* as the two principal business management styles. *Just In Case* businesses keep a full set of spare parts in the back storeroom. Some parts will never be used. *Just In Time* businesses arrange for parts to arrive at the time they are needed. Some parts never arrive.

Teacher help falls comfortably into these two styles. A full course in Microsoft Word is plainly *Just in Case*.

Usually the *Just In Time* style, delivering exactly the right amount of help, at exactly the right time, is preferred. Teachers then feel that we are keeping them company on the journey.

However *Just in Case* help sessions are more powerful when we want to make users aware of the range of possibilities offered by a tool or software package.

When working with users (teachers or students) who are learning to use computers, a ‘hands off’ style is the most effective teaching strategy. By this, I mean ‘keep your hands off the computer’. Stand back and tell the user, step by step, what to do. Teacher and student should develop a computer vocabulary between them. This delivers a hear, see, touch learning experience.

When you help teaching or office staff, always go back and check that the advice worked.

IT leaders will help teachers introduce IT into the classroom. Consider these points:

- The class may be using a specialized software package
- To be able to help, ICT leaders must learn the basics of these software packages
- Write tutorials, especially if there are special arrangements (difficult file management)
- Be alert to news of suitable software (use mailing lists)
- Jump on the bandwagon and help if you find a teacher trying to take an IT initiative
- Evade rote learning software — look for ‘think and understand’ software
- Watch for free software but remember it must be built into a complete curriculum experience before it is useful, even Google Earth
- Try using Andrew Dalglish's TLF Learning Objects in the one-week block bookings

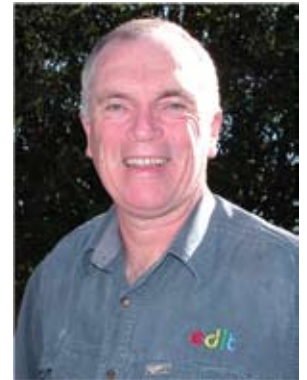
Finally, there are ways of making IT more accessible. Provide services:

- Set up crosswords and worksheets for teachers
- Set up data projectors on request
- Manage photo storage
- Help find special resources such as sound or video clips
- Watch for needs, suggest solutions

The End: not with a bang, but a whimper ...

Making your mark on CSDs

Kevin Savage



Why ORM?

Why do we teach object role modelling (ORM) or, more generally, conceptual schema diagrams (CSD) in IPT? This is a process that is totally foreign to our students, its usefulness must be taken on trust until well into the development, and its arcana can be confusing. So, we must have a good reason for including it in the subject, right? It's not there just to fill in time and frustrate students and teachers. So why teach CSD?

There are many reasons why a fact-oriented design method such as CSD are included in IPT but here are three I think important.

Firstly it is a useful skill to master. Anyone who has attempted to create and use an Access (or other) database with more than one table will appreciate the need to optimise the table structure, even if they did not use the term optimise. Whether they are to organise a DVD collection at home or are required to set up a database structure on a network, students who understand how to organise a data set into normalised tables will be at an advantage.

But not all of our students will work with databases; many will not go beyond word processing and games after leaving the subject. We come to a second reason for teaching CSDs (or other design methodologies), it is an ideal environment to challenge students to think abstractly. Bloom would have field day, analysing, synthesising, creating, evaluating, applying, it all comes together in one process. But not only do

students have to work conceptually, they have to base it on real world, or real-world-like situations.

The final reason we use CSDs is because it is a teachable process. There are other ways of normalising a data set, but (despite the learning curve) CSDs is one that is can be learnt by most students, and taught by the majority of teachers.

What's wrong?

Okay, so a fact-oriented design method is part of the course of study of IPT, and many teach this using CSDs, so what's the problem? Unfortunately, this part of the course seems to be the least well assessed. Time after time at district and state panel looking at submission of student work it is seen that errors in conceptual schema are not identified. There are many times, along with fellow panellists, I have seen student work with obvious errors accepted by the marker, often with just a single tick at the bottom of the page.

Why this happens is unclear. Are teachers so overloaded with marking they do not have the time to give their full attention to a complex diagram? Has the teacher been part of the development process and accepts the student has done as well as they can? Does the teacher not really understand what is required? Is it just too hard to do?

It is very frustrating at panel level to see this potentially valuable part of IPT poorly treated. So what to do? It is no use looking to place blame; the majority of teachers are doing their best in

difficult, demanding circumstances. Deleting ORM from the course should not be an option. It is impracticable to retrain the teaching cohort.

Two years ago I was asked to do something on ORM at the QSITE conference to try to address the situation. I quickly realised there was not much that could be done in a one hour session. My solution was to look for, and then present a marking methodology for CSDs. I reasoned that if teachers, especially beginning teachers in IPT, had a structured method of approaching the assessment of a CSD they would have a better chance of giving a valid grade, and in turn this would help develop their own understanding of the whole process.

I was asked to re-present the session at this year's conference. During this presentation I asked participants to describe how they went about marking a CSD, and was interested to see that even experienced teachers had difficulty expressing the processes they went through.

So here it is, a method of approaching the marking of a CSD.

Method

Before I start, a disclaimer. I am not an expert in CSDs, or anything else to do with computing. In certain areas I have fewer gaps in my knowledge than in others, but I do not claim to be an authority on anything. What follows is the method I use to go through a CSD; all experienced IPT teachers will have their own methods; all teachers must

develop the process that works best for themselves.

The process involves ten steps, with steps 2 to 4 being iterative.

Step 0

Before you begin, get ready to concentrate. This may sound trivial, but it is not. Marking a CSD is a complex task and you have to be in the correct frame of mind to do it.

Find a quiet space to work. Give yourself time to do the job. Be in a calm frame of mind.

These three are desirable but not always possible in a school or home marking situation. Do your best to achieve them as you will not do your students or the marking task justice if you cannot concentrate on the task.

My preference is also to use a pencil for initial marking. This avoids the embarrassment of making slashing corrections to student work and then realising they were right after all!

Step 1

Find the significant entities in the diagram.

These are relatively easy to spot as they are the ones other lesser entities are linked from. In doing this include nested/tertiary relations as significant entities.

Step 2

Choose one of the significant entities and answer the following:

- a. Is this appropriate as a key entity?
- b. Are its label and reference mode correct?

Step 3

Check each of the minor entities leading off this significant entity and answer the following about each:

- a. Is the relationship to the selected key entity valid?
- b. Is the relationship to the selected key entity real?
- c. Are the label and reference mode correct?
- d. Are the uniqueness and mandatory constraints correct?

Step 4

Find a link from this significant entity to another significant entity, and repeat

steps 2 and 3 until all have been checked.

If possible work systematically, left to right, clockwise, or top to bottom.

Step 5

If necessary check any other entity not yet viewed.

Step 6

Look for any non-identified surplus entities.

Step 7

Look for possible derived relationships.

Step 8

Check other constraints e.g. frequency, entity, equality, exclusion, etc.

Step 9

Note any other obvious errors.

Step 10

Change to a red (or marking) pen; make comments and assign a mark or apply descriptors.

Review

That's it, nothing startling, just a structured process to follow to get through marking a CSD. Most experi-

enced assessors probably do something similar already. This is just a method that tackles the process in a systematic way, leaving nothing out. (Well, I have not mentioned subtypes, but I tend to avoid them anyway.)

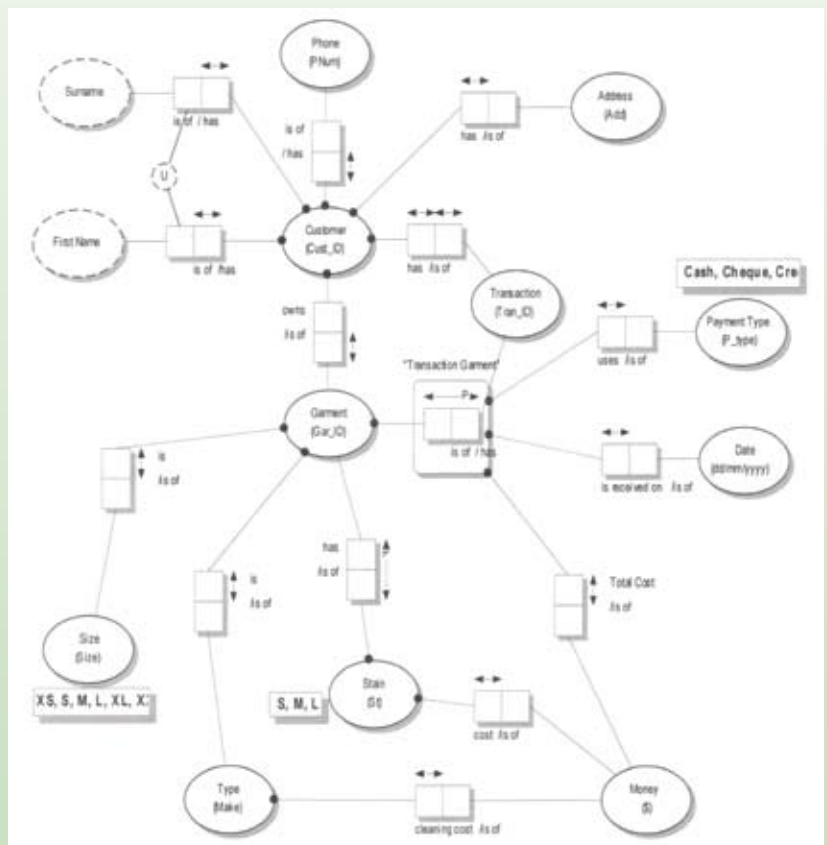
Of critical importance in the process is steps 3a and 3b. These are not the same. For unknowable reasons some students tend to link one entity to another just because they can. They seem to think that because an entity has been identified it must be linked somewhere, so they draw a join between them and write has in the relationship. Has will fit in just about any relationship, especially ones that do not exist, and I insist my students do not use has unless there is no alternative.

By checking a relationship is valid I mean the two entities do relate in the way described, and that the sub-entity is linked to the correct significant entity. A relationship is real if it reflects the real world situation that is being modelled.

Example

Okay let's look at the process in action.

We will mark the following CSD for a dry cleaning business using this method.



Step 0

Get in the correct frame of mind (ready?)

Step 1

Identify the significant entities.

Have a go at this yourself before reading on.

Step 2

Choose a significant entity and check it

The significant entities appear to be customer, garment and garment/transaction.

If we choose *customer* first answer the questions, is this appropriate as a key entity, and are the label and reference mode correct?

Customer appears suitable as a key (the cust# is a good indication), and label and reference mode look fine to me.

Step 3

Check each of the minor entities leading off customer. Is the relationship to the selected key entity valid and real? Are the label and reference mode, and the uniqueness and mandatory constraints correct?

Yes, all appear to be good except the link to transaction. I question whether this is a 1:1. I think I would check

student assumptions, but I am not happy with this; a 1:many would fit better. I am also wondering why both name and surname are in dotted ellipses. Again I would check what the student was thinking here.

Step 4

Follow the link from customer to garment, and repeat steps 2 and 3.

Garment and sub-entities seem to be okay.

Follow the link from garment to transaction/garment, and repeat steps 2 and 3.

Again everything appears correct.

Step 5

If necessary check any other entity not yet viewed.

Here we have not yet visited stain and type. Looking at them, again everything appears okay.

Step 6

Look for any non-identified surplus entities.

No problem here, all currency has been collapsed into money.

Step 7

Look for possible derived relationships.

The total cost relationship can be

calculated by the system and so should be marked as derived.

Step 8

Checking the other constraints, the entity constraints look good, but I am not sure about the uniqueness constraint between name and surname. This appears to be too limiting.

Step 9

No other obvious errors I can see.

Step 10

Make comments and assign a mark or grade.

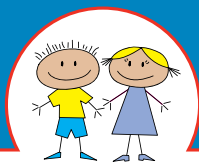
How would you rate this effort?

Conclusion

CSDs are an important part of the learning that goes on in IPT, but to fulfil their potential they must be taught and assessed well.

Using this marking method will not make the task simple. There is still the overall difficulty of appreciating which entities are related to which that is at the heart of the CSD process. However, a structured, systematic approach to grading student work in this area is a good way of maintaining standards.

Good luck with your marking.



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Something that begins with play — interactive learning in the Early Phase

Gayleen Jackson

As participants entered the ICT Learning Innovation Centre in August they were treated to an exciting and wonder-filled world that brought out the inner child in each of them. Surrounded by colourful hanging puzzles and bright displays they were led around the Centre searching for clues and answers to the many puzzles that needed solving. Excited teams of delegates collaborated to find the answers and participate in the many interactive learning activities.

All Early Phase educators know the best learning begins with play and the 2007 Interactive Learning in the Early Phase Conference, Something that begins with play gave delegates a playground where they could explore and play with ICT and how it can be woven into the Early Phase curriculum.

The two-day conference focused on the significance of using ICT for 21st Century learning in the Early Phase. Having access to actively explore and engage in these activities provided teachers with the opportunity to

understand the significance ICT plays in Early Phase learning. There were over 150 delegates who travelled from as far as Stanthorpe and Far North Queensland to play and learn.

The day started with Move Over Wiggles — Learning through Music, a keynote with a difference. The interactive workshop and presentation had delegates tapping their toes and moving to music being made on computer. The presentation helped the delegates to see the importance of students not only being exposed to music but making their own.

A swarm of Bee-Bots stole the show and attracted the attention of many delegates, who found the cute floor robots simply irresistible. Bee-Bots can be used as part of maths investigations and games for integration into the Early Phase curriculum. It is hoped that a swarm will soon travel over the state as a Travel Buddy project landing in Early Phase classrooms so that students and teachers can play and learn with these remarkable robots.

The variety of workshops covered everything from learning with interactive whiteboards to creating adventures for Travel Buddies to making I-Spy-style interactive digital collages.

Conference coordinator and Games in Learning Project Officer, Kristine Kopelke said the outcome for the conference was to show how ICT is integral to learning and how it makes learning more relevant to the digital generation. Comments from delegates when the conference finished confirmed this outcome was achieved.

There are already plans for the next Interactive Learning in the Early Phase Conference to be held in March 2008 at the ICT — LIC.

The ICT Learning Innovation Centre will continue to support Early Phase educators with making ICT integral to learning by providing useful resources, demonstrations and tutorials on the centre's new Interactive Learning in the Early Phase website.

To find out more, visit: <http://www.earlyphaseicts.com>

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