

Macquarie ICT Innovations Centre



Professional Learning 3.0

Project Report 2011

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Education &
Communities

Macquarie ICT Innovations Centre is a collaboration between the NSW
Department of Education and Communities and Macquarie University

About this report

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Executive Summary

About the Centre

The Macquarie ICT Innovations Centre (MacICT) is located at Macquarie University, Sydney, Australia. It is a collaborative agreement between Macquarie University and the NSW Department of Education and Communities (NSWDEC). The centre provides the opportunity for all K-12 schools to access innovative technologies in teaching and learning.

The Centre's focus reflects an innovative project-based approach to working with K-12 teachers and their students. The Centre's core business includes a comprehensive teacher professional learning and support program. MacICT staff, academic research partners from Macquarie University and school teachers collaboratively develop projects that utilise the most innovative, emerging technologies in education.

MacICT is also able to develop and implement small proof of concept projects to evaluate the use of new technologies quickly, providing feedback to our partners about the resource demands of scalability, for example.

MacICT is also able to connect and collaborate with other educational institutions and industry partners to inform the education community and provide significant research knowledge about the capacity of new technologies to enhance student learning.

Mission Statement

'to develop, implement and evaluate innovative ways of enhancing learning through the application of dynamic and emerging information and communication technologies'

To find out more please visit our website at www.macict.edu.au and our blog at <http://web2.macquarieict.schools.nsw.edu.au>

Industry Partners





Project Rationale

MacICT aims to support DEC teachers and their students in the designing and implementing of innovative curriculum-based projects by providing relevant and effective professional learning opportunities. The Centre evaluates innovative applications of professional learning in education, focussing on supporting teachers to map their professional learning needs and acquire accreditation for all projects, workshops and training through face-to-face, online and video conferences provided by MacICT.

The majority of professional learning courses and projects, designed and developed by MacICT teachers, are registered with the NSW Institute of Teachers and administered through the My PL@DET registration portal. Project participation and teacher professional learning are also supported by video conference support sessions and showcases as well as the development of collegial networks using blogs, forums and other social learning tools such as Edmodo.

MacICT staff is also encouraged to pursue links with academic and industry partners as part of their role in project management, research and promotion. Such links are aimed at developing:

- ICT skills and knowledge
- research skills, knowledge, data collection and evaluation
- writing and presentation skills
- project management skills
- use of innovative technologies

Macquarie ICT Innovations Centre is also used by outside agencies as a resource for the provision of professional learning. Those using the Centre and its facilities include DEC Directorates, DEC schools and Education Centres, such as Macquarie University, its faculties and departments as well as outside agencies.

Strategy: Professional Learning

Syllabus Addressed: All KLAS

State Priority Area: Literacy, Connected Learning, Student Engagement

NSR Priority Area: To foster and lead differentiated learning

To find out more about Professional Learning at MacICT please visit <http://web2.macquarieict.schools.nsw.edu.au/journal/teachingideas/>

For information about our Workshops please visit our website at <http://www.macict.edu.au/index.php/professional-learning/menuworkshopflyers.html>



Strategic Focus

Conclusions from 2010

MacICT’s professional learning program is designed to affect change in pedagogical practices so that learning outcomes are achieved in a more effective, engaging and relevant way for students.

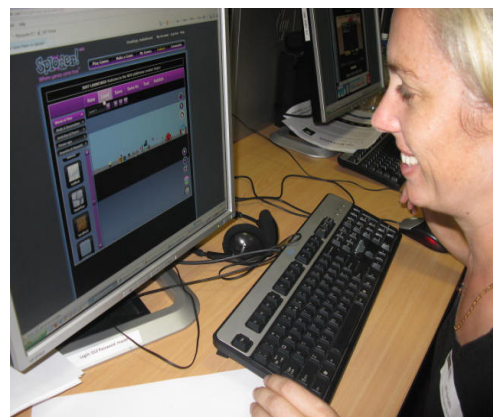
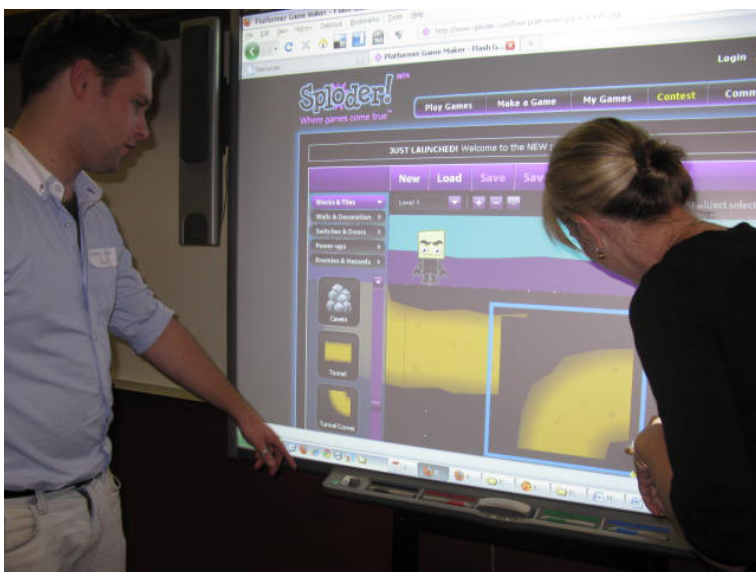
Throughout 2010 MacICT was able to provide DEC teachers with a broad base of quality professional learning opportunities facilitated through the use of a variety of technology tools including video conferencing, social media, mobile technologies and learning management systems.

The provision of one day courses to train teachers in the use of technologies was augmented by the implementation of an enquiry-based model where teachers and students participate in project-based learning over a minimum of one term. The MacICT projects focused on involving teachers in developing innovative ways of using technologies, critically reflecting on their practices and collaborating with colleagues to plan, share and improve their teaching/learning ideas and programs. Projects also have a research component supported by the employment of a research assistant and /or working with academics from Macquarie University.

The registration of courses and projects with the NSW Institute of Teachers aimed to provide a scaffolded approach to professional learning for all teachers but in particular for those wanting to

maintain their level of Professional Competence. There was a growing number of New Scheme Teachers attending courses during the year indicative of their requirement to fulfil 50 hours of accredited professional learning with the NSW Institute of Teachers.

During 2010 there was an increase in the number of regions with whom MacICT worked as a result of the state-wide promotion of courses and projects, facilitated by SchoolBiz and social networking tools, and the availability of connecting via video conference and use of Bridgit software. No longer were professional learning opportunities restricted to those teachers who could attend face-to-face courses at the Centre. Teachers from across all DEC regions including remote NSW and from all types of schools as well as pre-service teachers and academics from Macquarie University could now benefit from the professional learning opportunities afforded them through MacICT.



Implications for 2011

2011 continues the trend toward providing a more diverse professional learning program tailored to individual schools and teachers needs. It also marks the beginning of a more comprehensive approach with schools. To ensure that quality professional learning opportunities continue to be provided for teachers it is essential that we continue to implement an enquiry-based approach to learning within the centre. This affords teachers the opportunity to pursue their own professional development whilst engaging students in real and meaningful learning over time, supported by MacICT staff and availability of resources.

Using evidence gathered throughout 2009 - 2010 it is believed that there needs to be an increased focus on students as designers of their own learning and that teachers need to be supported in taking time to critically reflect on their pedagogical practices to affect positive change in schools.

There needs to remain a practical component of all courses which are designed to support project implementation and those courses and projects need to continue to address a range of standards (NSW Institute of Teachers) including appropriate use of cyber-safety policies and procedures. It is also worth considering the continuation of monitoring course and project participation by New Scheme Teachers.

MacICT should continue to support DEC teachers and their students in the designing and implementing of innovative curriculum-based projects by providing relevant and effective professional learning opportunities, appropriate support via video conference sessions, the provision of resources and the development of collegial networks and critical reflection opportunities. It is envisaged that such professional learning will continue to enhance the quality of pedagogical practice and processes throughout schools across NSW.

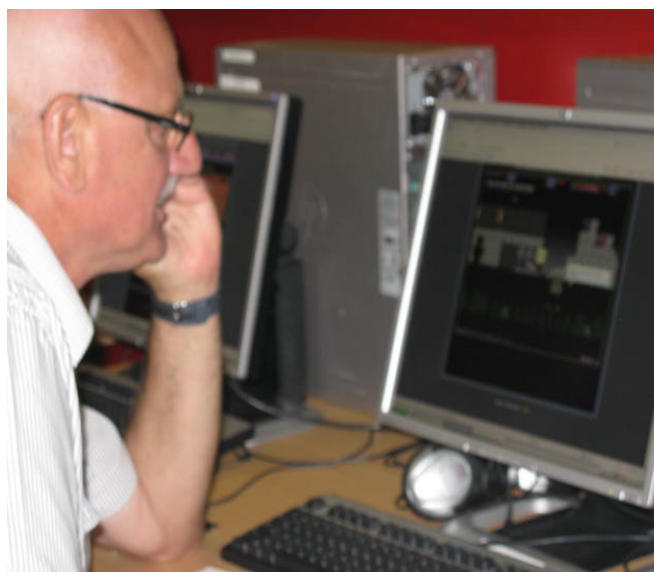


Project Objective

The Centre aims to provide teachers with innovative approaches to professional learning where flexibility and customisation are key to the delivery of introductory through to deep experiences in professional learning in education. Workshops are designed to support participation by teachers and their students in MacICT projects by developing ICT skills and knowledge as well as developing effective collegial professional learning networks.



Whilst the Centre’s professional learning courses and projects are focused on developing teacher skills, knowledge and pedagogical practices the underpinning aim is to develop students as designers of their own learning as a result of the change in teacher practice through the integration of new technologies into classroom programs.



Teacher Professional Learning

The NSW Institute of Teachers' Professional Teaching Standards provide a common reference point to articulate, celebrate and support the complex and varied nature of teachers' work. They describe what teachers need to know, understand and be able to do as well as providing direction and structure to enhance the preparation, support and development of teachers.

Teachers who have been accredited at Professional Competence need to maintain their accreditation. This involves their participation in 100 hours of professional development over a five year period if full time, or seven years if casual, temporary or part-time.

Throughout 2011, courses and projects provided by MacICT will continue to be registered with the NSW Institute of Teachers and scheduled on the DEC's registration portal, My PL@DET. The management of course and project participation, data collection and evaluation is facilitated by the use of My PL@DET.

Whilst all professional learning courses and projects focus on the achievement of a variety of teaching standards, there is an emphasis on attention to Elements 1, 3, 6 and 7.

These elements state:

- **Element 1:** Teachers know their subject content and how to teach that content to their students
- **Element 3:** Teachers plan, assess and report for effective learning
- **Element 6:** Teachers continually improve their professional knowledge and practice
- **Element 7:** Teachers are actively engaged members of their profession and the wider community

There is also an emphasis on having teachers in projects participate in collaborative online forums as part of their critical reflective practice. This strategy aims to increase the development of collegial networks, critical reflections of pedagogical practices and sharing of ideas, resources and skills. For details of all professional learning standards addressed see Appendix X.

In 2011 we developed a range of new accredited courses including Managing Online Learning, Participative Narratives, Good Game Design and Operation Innovate.



Course Promotion

MacICT courses and projects were heavily promoted throughout the DEC, including the production of a weekly newsletter distributed via SchoolBiz. Interestingly MyPL has become a hub for teachers wanting to find professional learning opportunities. This was responsible for an increasing proportion of our total teacher traffic.

MacICT courses and student workshops were also promoted through large events such as 3dedrats and ongoing consultations with schools who have worked with us previously. See the 3dedrats report for full details of the 3dedrats promotions. School consultation has provided a platform for MacICT to offer more tailored professional learning experiences.

The re-design of the MacICT blog in Term 2 facilitated the sharing of teaching ideas, the promotion of project activities.

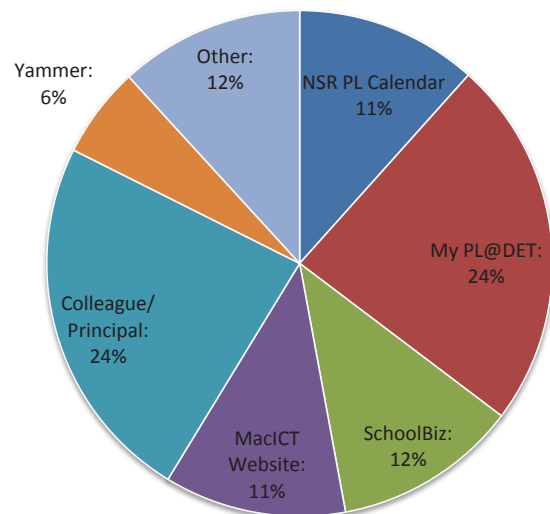


Fig 1. Where did you hear about the course? Sources of MacICT promotion.



Activities 2011

Description

The number of scheduled courses was reduced to meet the needs of a decline in enrolments in traditional face-to-face courses as well as a focus on large scale professional development opportunities such as 3dedrats. We also provided more tailored workshops to address the needs of communities of schools.

During 2011 MacICT ran 160 activities and 7 projects, with 689 teachers, 4,880 students and 1,820 general participants.

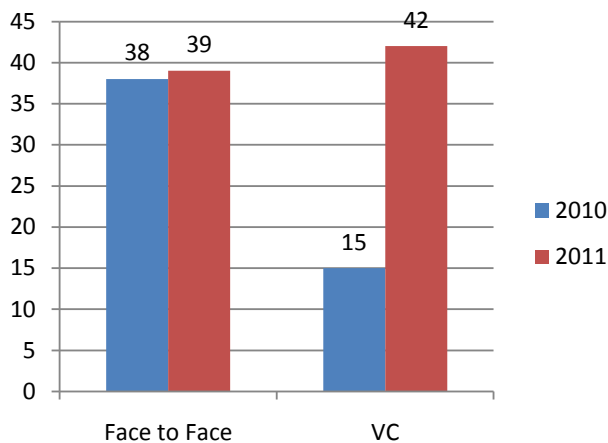
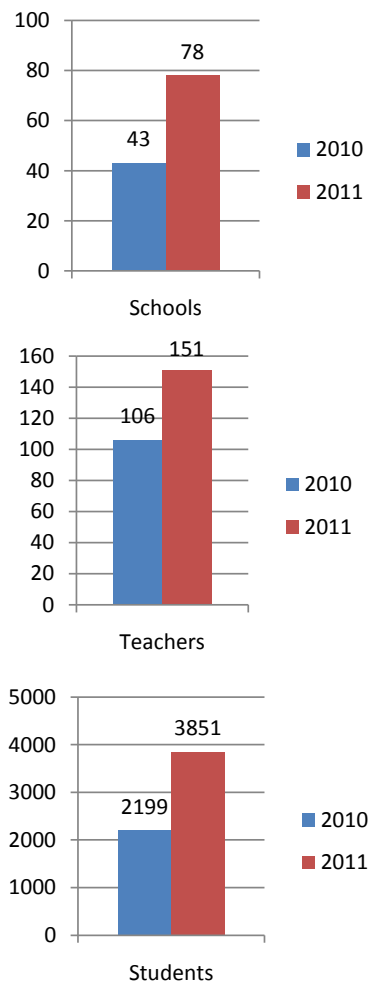
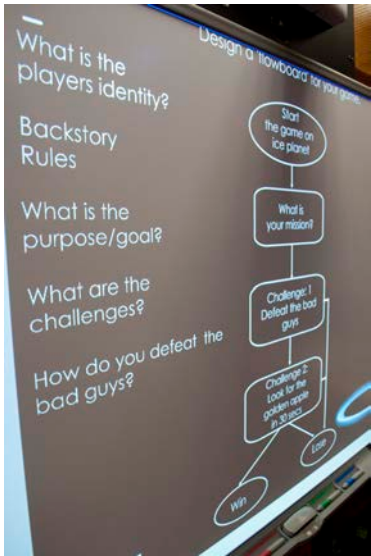


Fig 2. Comparison - number of professional learning courses

Fig 3. Project participation in 2011





Academic Expertise

The highlight of Term 1’s professional learning opportunities was the visit by Professor Stephen Heppell in March. Over 70 educators including teachers from across the state, DEC directorates and MacICT, industry and education partners attended the day which included an inspirational keynote, “Playing with Learning Spaces” by Professor Heppell. This was followed by Gordon East PS Year 5 students creating short animations inspired by Tropfest’s 2011 winner, Damon Gameau’s Animal Beat Box and a video conference with 3D VW Project participants, Dulwich HS of Visual Arts and Design Year 10 students. The focus on creating innovative flexible learning spaces was enhanced by the installation of brightly coloured, modular furniture and loan of innovative technology such as the VertTable and Theatre seating from RM Asia Pacific.

In 2011 a series of 3 science based video conferences were also conducted within MacICT. In semester 1 students from Mosman HS hosted VCs with Sir Anthony Leggett and Professor Bei-Lok Hu. In Semester 2 we continued the science based video conferences with James Rabeau from Quantum Criptography.

Tailored Professional Learning Experiences

The Visual Numeracy project was commenced in consultation with the NSWDEC Western Sydney Region Hills Community of Schools as a direct result of the Stephen Heppell visit. As a result of the analysis of NAPLAN results, the Hills Community of Schools identified visual numeracy as an area for improvement. Through observation, interviews and discussions with school leaders a professional learning plan was proposed and implemented by staff at MacICT.

The project invloved 4 schools (Kellyville HS, Kellyville PS, Sherwood Ridge PS and Beaumont Hills PS), 23 Teachers and approximately 500 students

Refer to the Food Brain Report for more details.

Consultation and Mentoring

MacICT continued to provide schools such as Northern Beaches Secondary Colleges (Kate Farrow), Mosman High School (Maggie Dendy) and Camden Haven High School (Ruth Winfield) extensive support through consultation and mentoring. These teachers worked on large scale, grassroots innovative programs in their schools such as Game Portal, Beyond Visible (Appendix C) and Food Brain (Food Brain Report). All these teachers have been working with MacICT in an ongoing capacity for between 2 and 4 years.



Reflective and active professional learning

The 'Operation Innovate' Project was introduced as a way to challenge teachers and students K-12 from all KLAs to attempt one or more 'missions' which would integrate technology into their classroom in creative ways. 'Operation Innovate' aimed to extend teachers' knowledge of quality teaching and technology integration within a flexible, supportive community based professional learning environment. Operation Innovate provided an innovative way for teachers to be rewarded for taking ownership of changing their classroom practice. Mission Control, an Edmodo group designed to support the teachers learning proved to be an excellent collegial network for sharing practical teaching ideas in the form of mission plans.

Reflective and active professional learning

As a part of Operation Innovate before-school video conferences were offered throughout the year. These forty five minute VCs provided an opportunity for colleagues to learn about, discuss and critically reflect upon:

- the concepts of project based and enquiry based learning
- online learning and its many implications for teachers and students
- students as designers of their own learning
- copyright and its implications in the digital world
- collegial networking as part of an online community.

Overall there were 10 VCs including 61 Teachers.



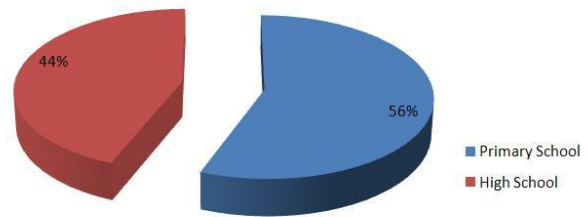
Results

A direct response to the Stephen Heppell visit was the Beaumont Hills teacher and students video workshops. The Manly Game Portal idea was generated during the visit from the ABC and the discussions of Augmented reality.

Tailored professional development projects that incorporate a range of stakeholders including departmental consultants, principals and teachers in both planning for and running workshops worked extremely well. Attendance, motivation and sharing was maximized and resources were extremely well used in these projects.

Mentoring, consultation and tailored professional development has provided schools with insights into transformation change. This has resulted in quality work, school driven innovation such as with the Game Portal project, Beyond Visible VCs and Visual Numeracy work.

Game Design proved to be a popular course, more people are understanding the importance of games in education and this was reflected in attendance in these courses.



25 teachers completed the three Good Game Design Workshops. 14 primary school teachers and 11 high school teachers

Fig 4. Percentage of Primary and High School teachers completing Good Game Design Workshop in 2011

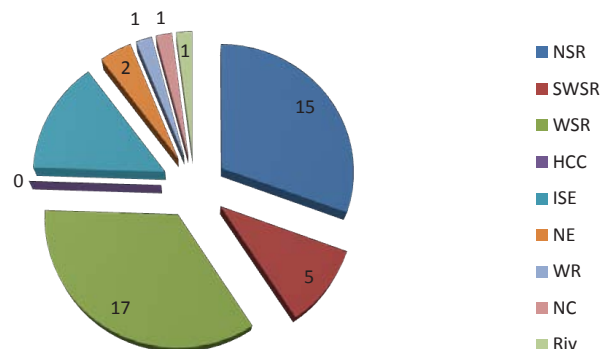


Fig 5. VC participation by region. MacICT conducted VCs with 9 of the 10 regions in NSWDEC.



Operation Innovate continues to attract teachers to work with the Centre on integrating technology into their classroom. Schools for specific interests such as The Conservatorium of Music have used our services to design a technology project that incorporates local primary schools and vlogs. Mosman High School have continued to use our services to design learning that incorporates video conferencing.

Operation Innovate was effective in identifying teachers with ICT skills and leadership qualities to work with additional projects such a virtual worlds.

During Semester 1 of 2011 over 45% of all professional development offered through the centre was delivered via VC. We also started offering full-day VCs such as those offered by the Good Game Design project.

In Term 2 some scheduled courses were cancelled due to low or no enrolments. Whilst no specific reason can be identified for not being able to attract teachers to attend courses, it may be the trend, as experienced in past years, that Term 2 is an exceptionally busy one for teachers in schools because of national testing, in-school semester 1 assessments, reports and interviews.

In Term 2 PL income was increased by new charges now included in our program of professional learning in schools. This was exemplified by the PL day provided for Stage 2 teachers at Beaumont Hills PS as part of their Road Safety (Video Editing) Project.

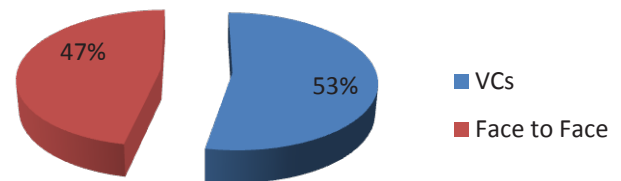
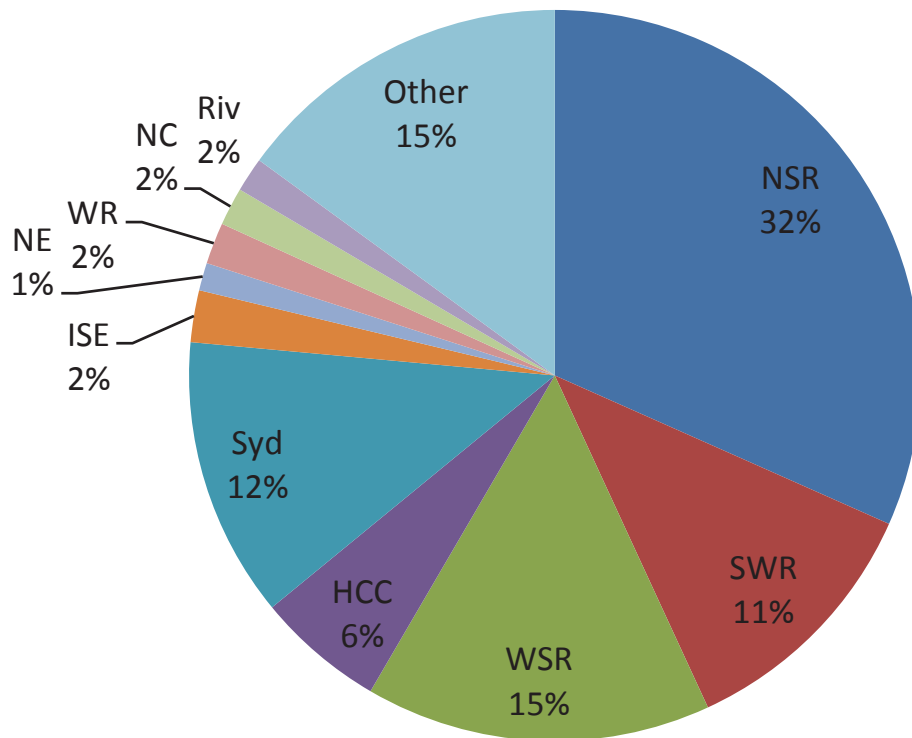


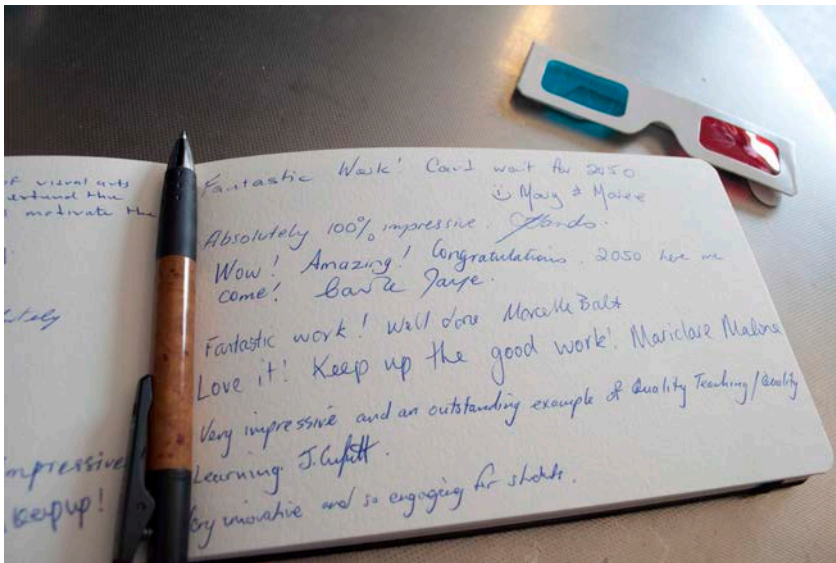
Fig 6. Activity types.
The overall statistics for 2011 indicate that MacICT has offered as many VCs as face to face courses. Teachers from remote and regional areas are increasingly attracted to our projects.

Eg Cost: \$110 per participant
 \$300 per MacICT staff member



Fig 7. Participation in MacICT activities by region





Feedback

Evaluations of the Centre courses and projects were collated in SurveyMonkey in Semester 1 and through MyPL evaluations in Semester 2.

Evaluation comments from course participants highlighted that MacICT courses provided:

- “Ability to show students how to check for copyright. Students able to link together and use valuable learning tools in so many ways.” - Blogs in Classrooms
- “It was great and we had a first viewing - preview at the senior assembly on Friday - everyone very impressed even with all the small errors - but this shows the difficult process it is.” - Student video editing workshop
- “We had an amazing day and we thank you for giving us the opportunity to attend. It was really well organised and the workshop leaders were really patient and knowledgeable. The students absolutely loved it and we now want to come for a game design day. Thanks again! :)” - So you think your robot can dance
- “The workshops worked very well due to the low numbers in each group. It enabled all students to get a hands on experience with out having to be a spectator. There were also a number of younger students there on the day who were involved in the workshop. The enthusiasm show by these younger assistants was great and it assisted in our students learning.” - So you think your robot can dance
- “We have had a wonderful learning and sharing experience over the past two terms without sacrificing curriculum and subject content.” Operation Innovate – Collaborative Timelines of Personal Histories
- “Opportunity to re-engage with learning, take control student directed and apply their own knowledge to pose questions develop ideas.” Operation Innovate – Games Portal
- “a hands on approach. Eg ‘Operational skills were improved by hands on demonstrations and time to practise skills.”
- “All staff stated that from both sessions at the ICT centre they learned something new in the availability and application of technology that they could apply to their students’ learning” - Visual Numeracy
- “Visits to staff by MacICT personnel provided personl support and opportunity to discuss issues encountered throughout the project.” - Visual Numeracy



- “Thanks heaps for our invitation, we had an awesome time. I learned how to do some cool stuff on the computer and I had lots of fun creating a short movie with Damon. Thanks you so much for the outstanding opportunity. (The shirts were cool).”Gordon East Public School - Stephen Heppell visit
- “. . .We had brilliant fun and I enjoyed every second of it. I grinned at the fact that we were one of the first children to try these new pieces of technology and furniture. . .” Gordon East Public School - Stephen Heppell visit
- “small group instruction which enabled quality questioning, collaborative work throughout the day and ability for presenter to cater to each participant’s specific needs”
- “useful information that could be applied immediately eg “I now have a working wiki which is ready to go’ and ‘My previously superficial knowledge of the computer technology used for this event has been replaced by practical, relevant and inspirational “bricks and mortar” skills and understanding.”
- “resources and teaching strategies for classroom application eg ‘It has given me great ideas and inspiration for taking interactive learning back into the classroom.’”
- “experienced, knowledgeable and enthusiastic presenter eg ‘The facilitator was very knowledgeable and able to share her skills amazingly well.’
- ‘Revealed the potential of current ICT technologies as learning tools’ - Managing online:
- ‘I now have practical strategies for managing online learning at our school and for my personal professional learning. I also have a much better idea of teaching students to be competent digital citizens’ - Managing Online Learning



Findings

Teacher professional learning at Macquarie ICT Innovations Centre is continuing to react to intense change. This is reflected in the participation rates and types of professional learning activities conducted. Video conferencing continues to be a successful method of engaging teachers in professional development.

- Provision of consultative services to schools is increasingly important and productive, eg. for example the student immersion activities Food Brain and Visual Numeracy
- The Visual Numeracy project success indicates that infographics and visual numeracy may be popular concepts to explore for future professional development
- Working with communities of schools provides a number of affordances to projects
- Operation Innovate identified talented teachers such as Sally Leaney, Balgowlah Boys High, who then participated in additional larger projects with MacICT.
- One of the most significant findings is that there has been a decline in the uptake of face to face professional learning and an increase in the uptake of video conferencing due to factors such as time, distance and personal interest.
- Ensuring teachers complete the accreditation process and reflect at the end of professional learning process is an ongoing challenge. Seven teachers (20%) on the Operation Innovate completed the project. They have completed reflections with their students as evidenced by the Edmodo groups, and final project reflections. These teachers are incorporating ICT as a regular part of classroom practice.
- The success of Operation Innovate was highlighted in the work done at Northern Beaches Secondary College Manly Campus in Term 2. There, the success of 'missions' completed by students and teachers, supported by the Head Teacher Learning, a previously deployed MacICT Technology Leader, was instrumental in increasing the number of teachers encouraging students to be designers of their own learning. This resulted in an observable positive change in pedagogical practice within the school culminating in a comprehensive project where 15 Year 10 students designed a web system to deliver game based learning to all of the Year 7 students. Full details of this project can be found in Appendix C.
- Course content and resources should be shared using a social learning tool such as Edmodo to encourage the use of the same tool by teachers



and their students within their classroom environment. However feedback from teachers also indicates that a more structured online presence is required.

- Feedback from Semester 1 courses indicates that a practical component should be maintained in all courses and that wherever possible, the course content should be tailored closely to the teacher's needs as well as those of their students.
- As a result of the Stephen Heppell day held in Term 1 at MacICT, 5 schools worked with the Centre in Term 2 to develop their own project-based activity. This was exemplified by two projects collaboratively developed by MacICT staff and DEC teachers. The first was with teachers and Stage 2 students at Beaumont Hills Public School and was based on Road Safety and the use of video editing to create promotional videos and the second project, similar to Tropfest, was with Stage 3 students from Mimosa Public School.
- Teacher professional learning continues to support the implementation of MacICT projects as well as those offered by DEC directorates such as the Multicultural Programs Unit and their iLearn ESL2 pilot project by providing staff expertise in use of technology, linked course

work and appropriate resources and support (often by video conference)

- The survey data indicates that many teachers are now finding out about courses through Yammer/Maang and Twitter. Both these sources of course promotion should be utilised as much as possible to encourage enrolment in courses and projects.
- Consultation, mentoring and tailored professional development should continue to be offered to schools but should be developed in consultation with executive staff and include a community of schools where possible.
- There has been an increase in the demand for consultation and support to schools to develop strategic plans that integrate ICT into effective classroom practice.



Implications for 2012

Ongoing professional learning should carefully consider the mix of support available to teachers but should include an online element, video conferencing, face to face workshops and project based work.

The newly developed Crowd (<http://web1.macquarieict.schools.nsw.edu.au/crowd/>) website has been designed to provide teachers and students with a structured, shared repository of student design work samples. This site is designed for teachers and students to share creative ways to use technology in their classrooms. It provides a step-by-step approach to the process involved in designing a student challenge including the following:

- Researching,
- Planning
- Creating
- Sharing /Publishing
- Reflecting.

The site provides support at the research, plan and create steps and helps to answer teacher questions about permissions and privacy. Additional resources and/or links are also provided to complete the challenges and publish student work samples.

The next step in this process is for teachers to develop collaborative projects that encourage student design and participation as well as involving multiple schools and subject matter experts.

Just in time learning via VC

To maintain a practical component, it is suggested that VC sessions for teachers should:

- be one hour duration before and/or after school;
- be based on providing approximately three teaching strategies focused on the use of innovative technologies to support sound pedagogical practice;
- link to project-based activities;
- highlight students' work samples and focus on developing students as designers of learning;
- should incorporate the use of Edmodo (or similar) as a tool for collegial communication and sharing of resources as well as exemplifying the possibilities for student use.

New Workshops

The current approach to workshops needs ongoing consideration to ensure the program is relevant and complements other MacICT activities. This may include:

- Infographics
- Global networking
- Design your own project workshops
- Tech tasting days
- Mobile learning workshops
- Focus on Game Design and Robotics workshops
- Strategic planning
- Virtual worlds



Workshops should develop networks, partnership and incorporate experts from both the university and industry.

Reflective and active professional learning

To investigate the possibilities of a collaborative approach by MacICT and the school to the development of student workshops, student-run video conferences, student-based challenges or ‘missions’ and much more (as evidenced on the MacICT blog - <http://web2.macquarieict.schools.nsw.edu.au/>)

MacICT should provide more large scale collaborative projects that attract teachers to work in a collegial environment that incorporates the general community, experts, teachers and students. Teachers should also be encouraged to design these projects.

Macquarie Academic Expertise

It is clear that teachers and schools are inspired to participate in professional learning that incorporates Macquarie University academics and others (eg. Stephen Heppell). This will:

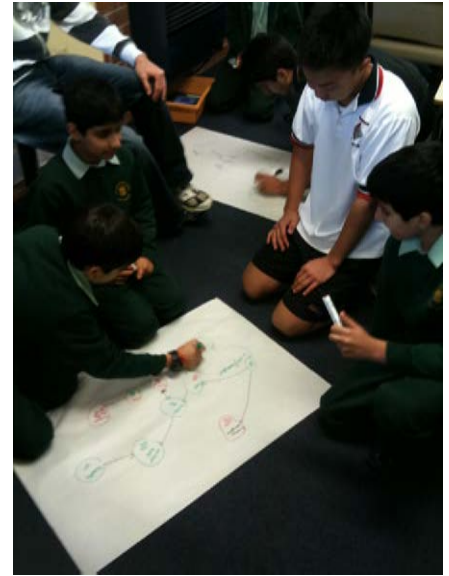
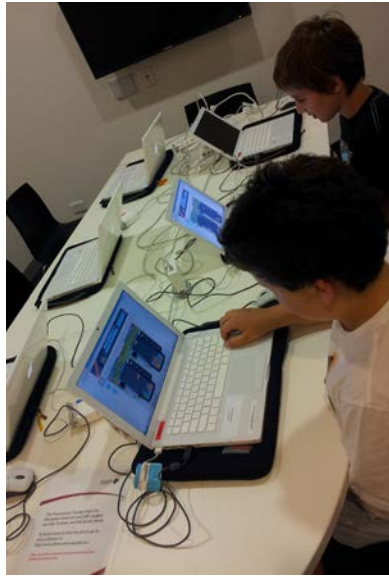
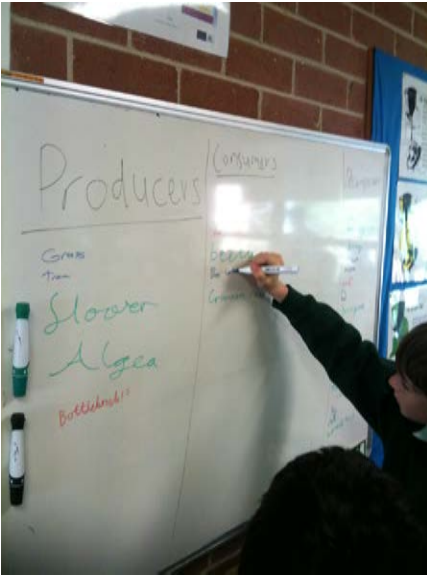
- Increase our program of video conferences, discussions and projects that incorporate experts
- Develop industry and professional partnership links directly to projects
- Increase tailored professional learning eg Hills Community of Schools project linked to the NAPLAN results.

Tailored Professional Development, Mentoring, Consultation

It is clear that a continuum of needs exists for teachers accessing the centre. At one end some teachers need to see technology in action by attending and participating in a school excursion and at the other end some schools are ready to embark on whole school or community strategies towards a pedagogical shift.

Schools that are ready to transform practice require a tailored approach to working with MacICT. MacICT can provide this by:

- Providing a framework for schools to develop their strategy
- Providing a tailored professional development package
- Providing a mentoring package or identifying potential teachers to participate in the Technology Leaders Project
- Promoting these consultation services tied to transformation that delivers enhanced educational outcomes



Conclusions

2011 has been a productive year in terms of modifying the professional learning approach of the centre. New programs such as Game Design are opening the door to future project based work whilst video conferencing is providing an avenue for remote schools to gain professional learning in order to participate in projects and activities. This should continue throughout 2012 with the most popular 2011 programs continuing to be delivered as well as increasing the video conferencing programs available.

In order to complement a changing approach to professional development MacICT have developed an online showcase that actively engages teachers and students in sharing design work and reflecting on the process of design. The success of the showcase video conferences indicates that a focus on helping teachers to own this online space and develop collaborative projects should be a priority.

Schools are increasingly working with MacICT in a more holistic way integrating strategic planning, professional learning and changes in pedagogy. This has produced some spectacular results as with the Game Portal group at Manly Selective High School. Building the relationships with these schools is a time intensive process, however it is one of the only ways for schools and MacICT to observe lasting and meaningful change.

Operation Innovate encouraged teachers to critically reflect on their practice as part of the

process of accreditation for the Institute of Teachers addressing an implication for 2011, that teachers need to be supported in taking time to critically reflect on their pedagogical practices to affect positive change in schools.

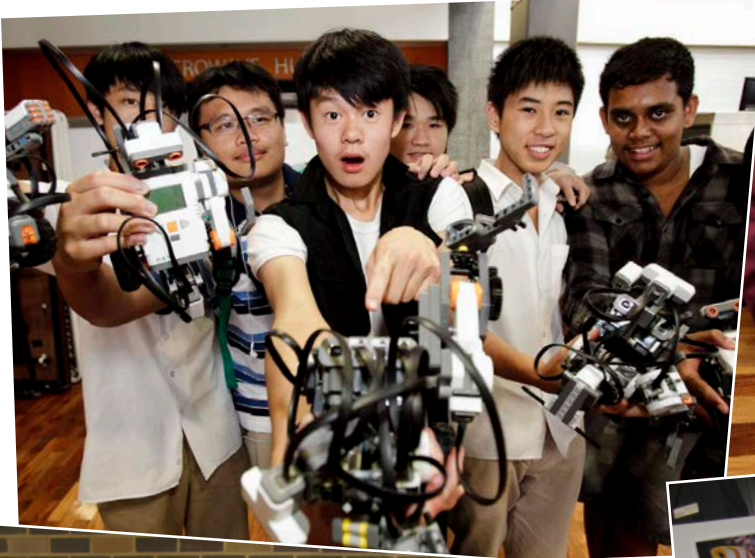
Tailored learning was in consultation with schools to determine their learning needs and should be increased and include content such as infographics. Communities of schools should be targeted to develop collaborative projects and professional learning.

Infographics, games and social networking are courses that may appeal to teachers in 2012.

Budgets are limited and time is an even more limited resource. This means that professional learning must:

- provide an excellent and inspiring opportunity
- build relationships with expert partners
- these partners should be included from project development through to evaluation.

Some of the professional learning opportunities can be driven by corporate sponsorship which include professional learning opportunities for teachers in new directions. MacICT has the ability through projects such as Operation Innovate to identify best practice teachers to continue with additional projects run by the centre.



Appendix A: Links to MacICT Strategic Plan

STRATEGIC PLAN OBJECTIVES	PROJECT ACTION
Professional Learning	
1.1 Course and project evaluations will be highly rated and regarded	Course and project participation and evaluation data will be reviewed at the end of every term to ensure that the opportunities provided are relevant, innovative and engaging for teachers and students.
1.2 Teacher registrations in courses will be in high demand	Courses are promoted online, through state-wide professional learning sites and MacICT website and blog. Courses are designed to meet the needs of DEC teachers and current DEC policies and procedures. All MacICT courses are registered as either 'developed' or 'registered' with NSW Institute of Teachers.
1.3 Course and project evaluations will drive the directions of the projects	Course evaluations and the needs of projects and their participants are used to drive the development of professional learning opportunities and the way these are delivered eg face-to-face, online and/or via video conferencing.
1.4 Teacher candidates for deployment at MacICT will be of a high quality	Selection criteria are explicit and relevant to the needs of the Centre and its strategic planning.
1.5 Recognition and accreditation is available with all courses and projects	All MacICT Projects will be registered with the NSW Institute of Teachers. The majority of courses will also be registered with the NSW Institute of Teachers. All courses. Whether 'developed' or 'registered', will provide recognition of professional learning hours for all participants.
Students' and Teachers' Participation	
2.1 School participation in projects will be sustained throughout the course of the project	The provision of relevant professional learning and participant-support strategies will be designed to support the sustainability of teacher participation in projects. This may include specific course-work, support VCs and showcases and membership of professional learning networks using blogs, Edmodo etc.
2.2 Improved data collection	All professional learning will be evaluated through appropriate and timely surveys to provide relevant data.
2.3 Online collaboration between teachers and students will increase	The number of online professional learning opportunities available for DEC teachers will continue to be increased as part of the access to collaborative spaces for learning and sharing through the development of online communities within the MacICT projects.
2.4 An increased focus on middle years students in Centre projects	Where feasible, design of courses and projects will facilitate the teaching and learning for middle years students.
Partnerships and Research Links	
3.1 Increased industry partnerships	Where appropriate, industry partners are used as a resource in courses and/or projects.
3.2 Increased collaborative research with University	Opportunities for teachers to collaborate with university partners to develop knowledge of research methodology are provided through participation in project activities including online networking, project showcases and employment of MQ students as research assistants.

3.3 Extend the current reach of the Centre, ideally across the State and possibly globally.	A number of courses are designed to be able to be delivered online to schools in regions other than NSR. Teacher accessibility to resources will also be increased as part of project participation through the use of video conferencing, blogs, online forums and use of social networking tools such as Edmodo. MacICT professional learning opportunities are promoted state-wide through SchoolBiz.
3.4 Continue to engage in sharing and discussion of research and innovation with online communities of educators	MacICT will continue to increase its profile in online discussions through the development of online communities through project support and participation.
3.5 Partnership collaboration will inform direction of projects and professional learning	The development of projects and professional learning opportunities will continue to be informed by participating partners as exemplified in the VW Project where partnerships with well-known architects and Sydney College of The Arts are invaluable.
3.6 Partnerships will include international research collaborations and linkages	Professional learning opportunities will be supported by the development of international research and industry links. A highlight of 2011 has already been the presentation by Professor Stephen Heppell to over 70 DEC teachers, MQ academics and students.
Research Projects	
4.1 Focus on risk taking innovation to explore and explain pedagogical opportunities and to research pedagogical practices in specific disciplines	Professional learning opportunities continue to encourage a creative, innovative and reflective approach to pedagogical practices.
4.3 Research support will be provided	Academic partnerships with Macquarie University will continue to be actively pursued.
4.4 Research productivity and accountability will occur through publications derived from each Centre project	Professional learning opportunities throughout the year will support the development of appropriate skills pertaining to project publications and ethics applications.
4.5 Research productivity will be effectively translated into innovative teaching and learning practice	Professional learning opportunities will support the development of strategies that could effectively translate research productivity into innovative teaching and learning practice.

Appendix B: Links to North Sydney Region Plan

NSR	PROJECT
Regional Targets	<i>Differentiated Learning Programs</i> Improve access to differentiated curriculum for all students; Improve the quality of teachers.
Delivery strategies	<i>Early / Middle/Later Years:</i> Professional Learning opportunities Workshops based on skill and knowledge acquisition and application to classroom learning, across all KLAs delivered face-to-face, online and /or video conference; Deeper participation in MacICT projects (supported by workshops, video conference information and support sessions);
Assessment and evaluation strategies	Survey Monkey and/ or My PL@DET student and teacher evaluations; Regular Edmodo and/ or blog student and teacher reflections throughout project; Student work-samples; Showcase at conclusion of project.
Regional outcomes	All students access learning technologies; Teachers adopt student-centred approaches to teaching and learning; Students engage in authentic student-centred learning;
Regional indicators	A variety of learning technologies are embedded into student-centred teaching and learning activities;

Appendix C: Student and Teacher work samples

‘Game Portal’ Project Utopia

Kate Farrow and Peter Dawes, Manly Selective

The Game Portal Project AKA Project Utopia - introducing yr 7 students to the concepts surrounding global citizenship.

Background

Kate Farrow and Peter Dawes from the TAS Department at Northern Beaches Secondary College Manly Selective Campus initiated this project after working with the centre over a number of years. Kate Farrow was seconded in 2009 on the Macquarie ICT Innovations Centre Technology Leaders project to work on integrating innovative technologies and teaching methods to develop visual literacy using open source software Blender into photography and digital media programs. Kate also worked with Concetta Gotlieb on the Learning Design project to empower secondary students to use technology to teach each other and build conceptual understandings.

In 2010 Kate and Peter were involved in a number of planning meetings and discussion with Macquarie ICT Innovations Centre around a new concept of ‘Alternative Reality Games’. The pair had the opportunity to meet a Sam Doust the Creator of Bluebird a high quality game created by the ABCs Innovation Team. The concept combined multimedia such as games, video, blogs and wikis together into a narrative to help people understand the complex issues related to geoengineering. After testing the concept of student designed ARGs or ‘participative narratives’ through working with Concetta Gotlieb, from the MacICT Game Design team a plan was made to give the students the opportunity to work on a large scale software design activity using the participative narrative concept.

Project Utopia is the creation of a community of teachers across Northern Beaches Secondary College Manly Campus and Macquarie ICT Innovations centre who are passionate about empowering students to work on large scale innovative technology projects that incorporate various aspects of contemporary learning design into authentic projects. The project draws on students knowledge and skills in designing games, interaction, learning and multimedia for an real audience of students.

Overview

The Principal, David Tomlin set the brief for the students to design a software solution that would introduce the ideas and values that underpin global citizenship in a fun and imaginative way. Mr Tomlin advised the students that they should design a series of problems without clear solutions so that the students would have the opportunity to expand their thinking skills and try to grapple with the problems at a deeper level.

Year 10 Information and Software Technology (IST) students were given the opportunity to design a concept that would allow students to explore ethics and global citizenship over the course of a three-day immersion. The Year 10 students decided on the concept of framing the task in a gaming paradigm, in particular an Augmented Reality game similar to ABC Bluebird (<http://www.abc.net.au/innovation/bluebird/>). This would provide an opportunity for students to be introduced to and engage with the notion of global citizenship. The students designed a technology framework including a narrative structure, a database of scenarios, maps and stimulus material, which they would discuss before submitting their response back to the Game Portal.

The Macquarie ICT Innovations Centre was able to provide guidance throughout the process by providing inspiration and ideas in the project initiation stages. During the development process, face to face and remotely, Cathie Howe and Concetta Gotlieb provided feedback and guidance, at in-school in-services as well as support for students in writing scenarios and finding resources. They also assisted in providing objective assessment of the project's delivery over the three day implementation. This support was invaluable as it provided critical advice in terms of project based learning, innovative technology integration and stakeholder contacts.

The students consulted with other faculties eg. Mathematics, Science, History, English, Creative Arts to gain information and design ethics problems related to their curriculum areas.

In addition to Macquarie ICT Centre support, two of the students attended DEC Northern Region's "Imagination First" seminar series which assisted them in the development of problems and also gave an insight into the working cooperatively in a team towards a successful outcomes.

Students developed skills in using technologies such as Prezi, digital film making tools, Excel but more importantly the Year 10 students developed their skills in the use of the PHP.

Results

In order to develop the program at a quality level the Year 10 Information and Software Technology (IST) programming students were mentored by a past student and programmer to develop a PHP portal. (PHP is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML). The use of a mentor allowed the students to achieve outcomes that were working beyond the outcomes required for their stage. Ms Farrow commented that the experience provided students with an opportunity to develop knowledge and understanding of the software design process in a real world context and to use documentation methods appropriate to the tertiary level.

Over two terms the Year 10 IST and Film students developed content for a series of problems and associated source material. This required the students to be involved in high level negotiations about what is important in the curriculum and how to construct problems to address the outcomes for the Year 7. The students were supplied with the scope and sequences from all KLAs and using their previous experience of the Year 7 Global Citizenship project developed seven scenarios.

Feedback

"A real world project of this scale required coordinators (year 10 students) to be immersed in the development and delivery of the problems presented to the year seven cohort. It demonstrated to me how under-challenged they are with some units of regular work. This project challenged students' creative and management capabilities/capacities"

One student in the group has commented that it has 'reignited his passion for learning'.

Impact on Yr 10 learning

- There was a noticeable increase in student engagement.
- The task was significant as the students had the opportunity to develop a real world project.
- Evidence of their understanding of Course work in years 7-10 in ethics and social responsibility, and past experience of social responsibility programs re-emerged
- Students had the opportunity to re-engage with learning and to take control of their learning because of a student directed approach. This allowed them to apply their own knowledge to pose questions and develop ideas
- Students had the opportunity to use and further develop their ICT skills (IST, Design and Technology)
- The students were given the opportunity to be creative, and to use and reflect on real world problems as a stimulus source for the project
- The students had the opportunity to interact and negotiate with teachers across the school throughout the development of their ideas

Impact on teacher programming and teaching

- Stage 5 re-writes—yr 9 skills, yr 10 real world project ideas, systems analysis and redesign, cross curricula projects, with briefing from other faculties.
- The project involved Information and Software Design teachers rewriting teaching programmes to build on the skills developed in Year 9 and to use systems analysis in the development of the real world project in Year 10.
- The redesign of the course and the briefing and input from other faculties, allowed a cross curricular approach to the project
- The project needed a structured approach without stifling the imagination of students and removing student control
- The game paradigm worked and should continue to be developed in 2012.

Findings

Game Portal provided a framework for shared responsibility for transforming the curriculum from something linear and prescriptive into an interactive place where learning was inspirational. Having all stakeholders including MacICT, Principal, teachers, students and peers have equal responsibility for the decisions has completely transformed the project and 'lifted it off the page' and into the collective minds of the group.

Manly Selective Campus and MacICT have plans to work together in 2012 by further refining the system including adding more elements of game mechanics, refining the problems to increase their impact on students working with problematic knowledge and working with teachers to incorporate more content into the game.

Once the technology has been tested future plans will include further work with the other schools within the NBSC college. Maximising the value of mentoring and design to the school means using the tools created as much as possible and incorporating as many different faculties and students in the designing and learning processes as possible.

Beyond Visible @Mosman High School

Contact: MARGARET.DENDY@det.nsw.edu.au

Students lead a video conference to share their knowledge and understanding of cutting edge maths and science concepts taught in the Beyond Visible course at Mosman High School. Students involved studied nano technology and how things work at an extremely small scale. Professor Jason Twamley from Macquarie University invited various scientists eg. Sir Anthony Leggett and Professor Bei-Lok Hu visiting Macquarie to share their expertise.

Some features of the project include:

- Access to university experts such as James Rabeau from the Diamond Science Institute
- Students create flyers to advertise their VC
- Students incorporate experiments into their VCs
- Students run the logistics and create an agenda and runsheet for the VCs

This year the VCs have been attended by 2 schools. The concept has been successfully run for the past 2 years and will continue to be run with the support of MacICT.

SMARTMovies @Mimosa

Students created a SMARTMovie using screen and page recorder, object animation, backgrounds as well as publishing using Premiere Elements.

Year 5 students in this challenge were asked to communicate information about the Antarctic Food Chain using animation. They used the advanced features of SMART Notebook animation. For example:

- Recording movements on screen without capturing the mouse
- Producing a number of automated effects using object animation
- Playing with a mixture of movements and automated effects
- Creating either an interactive demonstration or recording the demonstration as a movie and adding a voiceover

Students in this challenge used TropFest winner Damon Gameau's Animal Beatbox animation as inspiration and the spirit of DIY design using SMART Notebook. The students recorded a soundtrack using GarageBand and created an animation using SMART Notebook and put these together using the software Premiere Elements. They also created original lyrics for their songs and recorded them using Audacity.

All this was done in less than 6 hours total, imagine what they could do in the 4 days that Damon took to create his video.

Operation Innovate

The number of teachers from Northern Beaches Secondary Colleges participating in centre projects is increasing. This is because these teachers have been identified as highly trained and skilled teachers who are looking for the types of flexible, innovative opportunities that Macquarie ICT Innovations Centre offers. Teachers involved in projects at Macquarie ICT Innovations Centre such as Technology Leaders Project, Operation Innovate, Students as Creative Producers and the latest Food Brain pilot program have shown leadership, creativity and an understanding of the needs of their students.

Students as Learning Designers using Captivate

Katrina Conaghan, Cromer Campus

A project where Year 9 Technology students design e-learning resources using Captivate. These e-learning modules are then shared with a primary school audience. This is an authentic project that targets students metacognition and thinking skills.

Some of the students lacked the skills in using Captivate so early in the year and the task was delayed until term 2 and 3 giving the students time to develop their ICT skills, storyboarding and planning.

“Students will be presenting this work to local primary school students and this had given them some incentive to ensure quality of content and aesthetics. Students also had to consider their audience as content was directed to specific grades and had to be suitable for reading and comprehension levels. Using the syllabus document from the primary allowed the students to produce content with information they were comfortable with. This allowed them to focus on the software”

Collaborative Timelines of Personal Histories

Julie Page, Manly Selective

A project where Year 9 History students develop empathy with the events in World War 1 by engaging in investigating community and family links to the event. Ongoing research and results are posted in Edmodo. This necessitates family discussion as well as active research. Photos and documents can be scanned and posted.

The scope of this project has extended and students have used a collaborative timeline “TimeRime” web tool as well as Google maps to show when and where their families were during significant events in World War 1 history.

“Students managed this within the group, selecting a Gatekeeper for the timeline and a map master for the Google map. Students, who because of a variety of factors could not trace individuals in their families, took on groups and places where their family had history or they felt empathy. All findings were posted and engaged with on Edmodo- this was a wonderful learning and bonding experience for the students and embraced Aboriginal and multicultural perspectives.

We have had a wonderful learning and sharing experience over the past two terms without sacrificing curriculum and subject content.”

Edmodo has become an integral tool in the classroom because of the user friendly nature making it popular with students attuned to social networking and has been extended into additional classes. A second iteration of the project was conducted with a new cohort of students.

'Super Me' Serious Cartoon Art

Sally Leaney, Balgowlah Boys

A unit of work in which Year 9 Visual Arts students created a humorous online environment to communicate a social and/or local issue with an audience. Students created their own online superhero and online comic/cartoon based on a caricature of themselves. Students posted their individual character's powers, their selected environmental issue as well as their ideas for a narrative in Edmodo. Students used aspects of the real world as a source of ideas, concepts and subject matter in their online cartoons. Students selected from a range of Web2.0 tools including Glogster, ToonDoo and Edmodo to create their work.

In addition students visited CyberNetrix: Internet Safety Education for Secondary Students (Australian Government, ACMA) to play the game on cybersafety and used Edmodo to explain to other members of the class what they had learnt about cybersafety.

"Whilst completing the project, many students were enthusiastic and engaged, working in their groups to produce some excellent ideas for their comics. The task was ideal for a number of students who found Visual Arts difficult due to the student's own perceived lack of drawing skill and confidence. The project provided these students with opportunity for success using online technologies and collaborative contribution to produce an artwork."

Sally Leaney was identified as an expert in the use of technology and worked with the Virtual World project.

iTunes Drama Series Year 10 Radio Plays

Elissa Cranston, Manly Selective

This project involved Year 9 Drama students exploring technologies that enabled them to record and produce audio recordings in various formats (podcasts, sound files and digital recording) and use internet networking sites such as Edmodo and iTunes to share and evaluate their own work and that of their peers. Students wrote their own script and accompanying music to create a radio play. The play was then recorded and uploaded as a podcast or audio or video file onto a social networking site for student evaluation.

After studying various types of incidental music in year 10 Elective Music, students created their own script and composed accompanying incidental music to form a radio play that was performed for family and friends at a performance evening. Students' radio play performances were recorded as stereo .wav files and posted on the Edmodo where students reflected on and evaluated their work and the work of others.

"One could question whether making the radio plays into podcasts would be necessary and increase student learning, as students had previously used Edmodo to evaluate and share their work. They were able to take home a copy of their recording as a CD or sound file from the school server or Edmodo to share with family and friends. A way to increase student learning might be to use a video camera to film the performance so that students could also reflect upon stage presence, ensemble skills and presentation of their radio play performances."

Gamelan Compositions iTunes Musical Podcast

Lucienne Howard, Music Teacher Manly Selective Campus

Task: Students used the notation software “Sibelius” to create a short composition to demonstrate their understanding of the compositional techniques employed in Balinese gamelan.

Edmodo has now become an integral part of Year 9 Music class, students fully explored an environment using Edmodo to ask the teacher about homework tasks/assignments/performance nights, share scores and analyse music completed by peers.

They were also able to explore possibilities for sharing gamelan musical compositions for a podcast environment.

The use of Edmodo has continued for this class, assignments were posted and marked, students work was displayed and distributed. The publishing of podcast to iTunes required “Permission to Publish” forms from the parents and as they were not received before the end of the project the podcasts were never published in iTunes.

Food Brain (see separate report)

The FoodBrain proof of concept project allowed Macquarie ICT Innovations Centre to explore the value of having a number of teachers collaborating on a variety of projects around the same basic idea. The key idea was to build on the collective intelligence of the group.

So far in 2011 we have run 3 activities with 35 teachers and 268 student participating in these activities. Of these activities:

- Tailored Professional Development & Visual Numeracy
- Immersion Excursion Model
- Cross-Cultural Exchange with India

Each school chose to engage with the concept in very different ways. Each project gave us an opportunity to explore the use of technology in context and how to best utilise the affordances of different technologies to empower the learner.

For more detail refer to the Crowd blog - <http://web1.macquarieict.schools.nsw.edu.au/crowd/>

Appendix D: Quality Learning Award Nomination



Western Sydney Region Excellence in Education Awards 2011

QUALITY LEARNING AWARD NOMINATION

Innovative use of ICT in Learning

Specifications:

1. This award recognises a school or group of schools that demonstrate innovation in the effective integration of ICT into teaching and learning.
2. It is open to any school or group of schools in Western Sydney Region.
3. The nomination can be made by the school, regional personnel, parent group or similar group.
4. The nomination must address the criteria as set out below.
5. The nomination must be fully contained in the boxes as provided, using Arial font and 11 point.
6. The nomination must be submitted by email to AwardsWSR@det.nsw.edu.au by September 9th 2011.
7. A suitable, relevant photograph that could be shown at the presentation for a successful nomination should be included.

For any enquiries please contact Jan Bartram Regional Schools Promotions Officer ph 8808 4957.

NOMINEE DETAILS

School:	Beaumont Hills Public School
Program Name: (optional)	

NOMINATED BY

Name and Position:	Heather Thomas Principal Beaumont Hills PS
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School or Location and contact number:

The Parkway Beaumont Hills	2155	ph: 88246470
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ENDORSED BY PRINCIPAL – Yes/ No:	<input checked="" type="checkbox"/> Yes	Name of Principal:	Heather Thomas
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CITATION

Please provide a short summary of no more than **120 words** of the program. This will be used to assist with the selection process and may be used as a citation for presentation of the award for the successful nomination.

The school community at Beaumont Hills Public School has embarked upon an educational journey for all participants (students, staff and parents) so that we are equipped to face the challenges of the 21st century. The effective integration of technology into the teaching learning process is one of which we are very proud. The impact on student and staff learning has been profound. The opportunities created through its integration are growing daily. The way in which education is being planned and implemented is and will continue to change at a rapid pace. Beaumont Hills is well placed to face the challenge of an ever changing world and to provide students with the thinking skills required for the world they will inherit.

CRITERIA

Please list in point form only, information and evidence that supports the nomination.

1. Evidence of successful and innovative use of ICT in teaching and learning.

- Professional learning in partnership with Macquarie University's ICT centre staff and students created. As a result

In 2010: Staff and students in Stage 3 implemented the use of the Kathooz program which is game design software to embed into their assessment task on the unit of work on the Eureka Stockade. Students worked with game design specialists from the ICT centre to demonstrate their deep understanding of this significant Australian event by creating a game that dramatised the event while building in 'clues' to complete the game that contained historical facts underpinning their knowledge of the causes, the outcome and the key individuals who were involved in the Eureka Stockade. Through this assessment task students were able to articulate and share their reflections in a meaningful way.

- ES1 and Stage 1 participated in the BeeBot project – which involved using these simple robotics to enhance student understanding of the metalanguage of position through the creation of tasks that facilitated mental computations required of the students to program their Beebots to follow pre-determined destinations. Staff then participated in several Video conferences develop activities in conjunction with university personnel and through sharing their experiences with colleagues from other schools.

In 2011: Drama is a targeted area- All Stage 2 students and staff participated in a film project with the ICT, integrating drama, explanation writing, storyboarding and video filming techniques to create Road Safety Videos as a learning tool for Early Stage 1 students.

- All stage 3 students have been involved in Murder Under the Microscope- used Edmodo to discuss and their theories and investigations with their teacher and their peers, while using online research tools to determine the 'villain'
- Stage 3 involved in maths project across the Kellyville Hub focussing on development of visual numeracy skills through the data strand. The interpretation and display of this data is to be created displayed through an 'infographic' - which will be created through a variety of online tools. Staff from all hub schools attended a full day workshop on info graphics at the ICT centre.
- Students across 2-6 are using the Audacity recording program to self assess their oral reading skills.
- Stage 3 Students have created learning resources for K-2 students using Notebook Software on recycling as a follow up to a waste Watchers presentation.
- Stage 3 students have created 2 surveys using Survey Monkey to gain data from students to set directions for playground changes and the type of technology education needed across K-6

2. Evidence of outcomes of programs.

- The intergration of technology has empowered students to be self reflective, empowered, highly motivated, enthusiastic, engaged and more willing to take risks in their learning. Evidenced by:
- Stage 3 students through individual interviews and demonstration of how to 'play' their virtual game of the Eureka Stockade clearly showed heightened engagement and understanding of the task through the application of technology in their assessment.
- ES1 and Stage 1 students highly engaged when using the BeeBots. Year 8 students from Kellyville High have been assisting Kinder students with programming the robots and developing correct language of position.
- Class programs are a more student centred focus- Students have opportunities to monitor and assess their own learning. Rubrics are referred to by students when listening to their own recording through Audacity. A greater interest and pride in reading has been reported and observed by staff. Students now have authentic feedback about their oral reading progress.
- Through creation of Notebooks on re cycling students demonstrated their understanding. They created, presented and built quizzes into the technology so that they could assess their audience's understanding of the concepts they presented through technology to them.
- The Road safety film created allowed students to teach younger peers while demonstrating their understanding of Road safety through a technology tool that had not previously been used. Staff and students learned side by side in the creation of this film. High levels of student enthusiasm for writing and producing this procedure were clearly visible. Cross curriculum skills were integrated into meaningful real life scenarios thus making the learning experience purposeful and connected.