2013

ANNUAL REPORT

MacICT
Macquarie ICT Innovations Centre

NSW GOVERNMENT | Education & Communities
Public Schools NSW

MACQUARIE UNIVERSITY

OUTLINE

Located in NSW, MacICT provides statewide services to both government and non-government Schools on the role of information and communication technologies in teaching and learning.

Our Vision: Exploring and realising the potential of emerging information and communication technologies to transform learning and teaching within a dynamic research community

Macquarie ICT Innovations Centre (MacICT) is a collaboration between the NSW Department of Education and Communities and Macquarie University. We have a project-based approach to working with K-12 teachers and their students. MacICT develops comprehensive teacher professional learning and support programs where MacICT staff, academic research partners from Macquarie University and school teachers collaboratively develop projects that utilise the most innovative, emerging technologies to address syllabus outcomes while meeting the individual needs of all K-12 teachers and their students, ensuring that our services remain relevant to all schools and contemporary by nature. MacICT is able to connect and collaborate with educational institutions and industry partners to inform the education community and provide significant research insights into the capacity of new technologies to enhance teaching and learning.

At MacICT we believe that learning how to use technology is not enough; the heart of 21st century learning is about becoming a proficient and independent lifelong learner. Our activities promote this through an inquiry-based approach to learning where students are encouraged to collaborate and be creative in solving open ended challenges.

HISTORY

2001

Macquarie ICT Innovations Centre grew out of a commitment to form a strategic partnership between Macquarie University and the Department of Education and Training to enhance public education. The partnership aimed to promote innovation in the enhancement of teaching and learning through the use of ICT, positioning both organisations as dynamic leaders in improving student learning outcomes and professional development of staff. A white paper was commissioned, advisory committee established, dedicated building and key resources identified and two Directors appointed.

2002 - 2005

The first Memorandum of Understanding lasting four years was signed on 22nd November, 2002 by Honourable John Watkins, MP Minister for Education and Emeritus Professor Di Yerbury Vice Chancellor Macquarie University. The Centre was managed by two Directors (SE02), and included a staff consisting of a administration assistant (Clerk 1/2) and the equivalent of 3.5 deployed teachers.

The Centre's mission was to 'develop, implement and evaluate innovative ways of enhancing learning through the application of dynamic and emerging information and communication technologies.'

Between 2003 to 2005, over 21,000 students attended the Centre,and 1160 teachers accessed the Centre programs with their classes. During 2005, 869 teachers accessed the Centre's professional learning programs such as Teachers e-academy, whole school professional learning days and one day workshops.

2006 - 2011

On the 12th September 2006, Andrew Cappie-Wood Director-General of Education and Training Managing Director of TAFE NSW formalised a continuation of the collaborative initiative with Professor John Loxton Deputy Vice Chancellor (Academic) Macquarie University until September 2009.

During this time, MacICT focussed on achieving best practice through leadership in 'teaching and learning using ICT', 'professional preparation of professional learning', 'supporting teachers in curriculum development' and 'delivery and research to enhance teaching, student learning and innovation with ICT'.

ON 22 NOVEMBER 2002
MACQUARIE ICT INNOVATIONS CENTRE
MACQUARIE UNIVERSITY
WAS OFFICIALLY OPENED BY
THE HON JOHN WATKINS MP
MINISTER FOR EDUCATION AND TRAINING

In 2006, MacICT's Reference group was formed and throughout this time period, a number of relationships were developed with industry and government agencies such as the Australian Centre for Astrobiology. One day workshops covering a variety of areas such as video texts, robotics, stop animation, social networking, wikis in the classroom and more were conducted.

From 2008, MacICT's professional learning services took a new direction focusing on a more project based approach where teachers and their students participated in long term projects. These included: Interactive classrooms, eMints, games based learning, virtual worlds, connected classrooms, robotics, students as game designers, visual literacy and numeracy, students as learning designers, technology leaders and more.

MacICT organised and held the first week long video conference festival, 'Thinking Globally, Delivering Locally' featuring a wide variety of presenters. Several showcases were held including a student led, 'Students as Designers' showcase featuring student designed digital games and learning sequences. Bajo and Hex from ABC's Good Game presented, played student's video games and chatted to students. Sam Doust, the Creative Director Strategic Development at ABC Innovation also presented on alternative reality dramas and games. Case studies and academic research were conducted in areas including: the use of mobile devices to support student's as they frame their own scientific inquiries into their local environment, virtual worlds in education, students as game designers and robotics in education. Several papers were published from this research (http://macict.webfactional.com/research/centre-papers/)

During 2010, one Director (PEO2) of MacICT was appointed. Throughout 2010-2011 MacICT ran some ground breaking projects gaining global attention. Two of the project leaders received awards for their work. Projects included Virtual Worlds: When2050, Game2Design, Robotics, LAMs in Teaching and Learning, Local Ecostudy Project , Operation Innovate and Professional Learning. During 2011, MacICT held a number of special events featuring renowned academics. These included, 'Playing with Learning Spaces': Professor Stephen Heppell, 'MacICT Robotics Day': Dr Eric Wang, 'Nanotechnology and Diamond': Prof James Rabeau, Physics Video Conference with Sir Anthony James Leggett (Nobel Prize in Physics), 3DEDRATS: a month long celebration of innovation and creativity in Australian contemporary education (http://3dedrats.wordpress.com/)

2012

A restructuring in the Department of Education and Communities led to changes within MacICT resulting in a significant reduction in staff and operating budget, and a move to a partially self funded model. A new Manager (SEO2) and an Office Administrator was appointed. New branding and a new website was developed and launched during 2012. MacICT was recognised by NSWDEC as a State resource with teachers across NSW from both government and non-government schools accessing it services. MacICT forged new collaborations with organisations including LEGO Education, FIRST, Alternator and buildAR. The opportunity to work with experts honed the development of workshops and provided opportunities for teachers to work with globally recognised experts. During 2012 alone, 2538 students, 229 unique teachers and 141 unique schools accessed MacICT's services. MacICT conducted two innovative case studies, iPads in the Year 1 Classroom: Working Mathematically and Augmenting Reality: Students as e-Design Artists.

THE TEAM

CATHIE HOWE
Centre Manager

Cathie is a Professional Learning & Leadership Coordinator for NSWDEC. During her 20 years both as a teacher and an executive in Primary Schools, Cathie has been recognised for her innovative practice, digital learning and leadership.

LYRIAN McGREGOR
Office Manager

Lyrian has worked as the Office Manager for MacICT for 2 years. She provides support to the Centre Manager and is the first point of call for all inquiries and visitors. She is also responsible for MacICT's marketing, social media and web presence.

DEVELOPERS

Learning designers who craft the courses and projects

TRAINERS

Our Professional Learning course runners

FACILITATORS

MacICT sources casual staff to run our student activities

RESEARCHERS

Research work on our academic or case study projects

JOHN BURFOOT

Lead robotics facilitator & former teacher with the Catholic Education Office. John has presented and spoken at numerous educational conferences, including the Association of Independent Schools of NSW, ICT Educators of NSW, St George & Sutherland Community College and the NSW Priority Schools Program's Equity Conference at Darling Harbour.

DR NERIDA MCCREDIE

During her 13 years of classroom teaching at St Ives North Public School, Nerida has been recognised for her work in digital learning and awarded for her innovative classroom practice. She works on MacICT's case studies and academic research projects.

MICHAEL STEVENSON

Michael is a doctoral student in the School of Education at Macquarie University. As an educator with nearly a decade of experience in the secondary classroom he bridges the gap between research and practice with an ongoing commitment to professional learning.
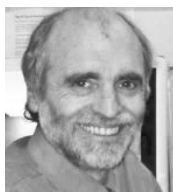
DAVID GROVER

David held the position of Head Teacher of Computing at Chatswood High School for ten years, is the author of a number of texts and lead author of the current Pearson text for Information and Software Technology.

ROB TOROK

A High School teacher from Tasmania, Rob is LEGO Education Australia's only officially endorsed trainer and has been using robotics in education for over ten years. Rob has assisted with designing and leading teacher & student activities around robotics in the classroom.

JAN EADE

A retired teacher, Jan has been involved with MacICT since 2003 where she pioneered the use of Virtual Worlds in education. She now develops and runs iPad, Curriculum and Virtual Worlds activities at MacICT.

ANTHONY FENNELL

A pre-service teacher at Macquarie University, Anthony began working for MacICT in 2010, first as a Research Assistant on the Game Design team and now as a facilitator running student Boot Camps in both Game Design and Robotics.
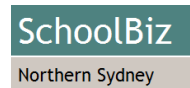
KYLIE JACKSON

Kylie is currently a pre-service teacher studying a Bachelor of Education (Primary) at Macquarie University. She is also Early Childhood trained and holds a Diploma in Children's Services.

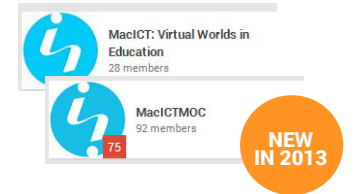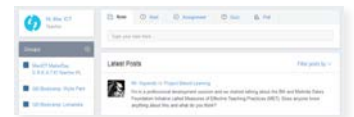# PROMOTING IDEAS AND PHILOSOPHIES ON 21ST CENTURY LEARNING

SOCIAL MEDIA

Maang

SchoolBiz
Northern Sydney

WEBSITE & BLOG

ONLINE COMMUNITIES
Google+ & Edmodo

MacICT: Virtual Worlds in Education
28 members

MacICTMOC
92 members

NEW IN 2013

807

twitter followers
doubled in 12 months

INTERVIEWS & ARTICLES

Can Lego Build A Path To The Next Generation Of Aussie Games Devs?

Robotics In Education

"We've had teachers come to our training days, one in tears because she was so overcome with what her students were doing throughout the day and the way they responded. When the new technology curriculum comes in, that has an engineering strand in it. That engineering strand, I just think that a logical choice with that is going to be robotics. We work with other robots too, not so much now, but we always keep coming back to Lego because you can build your own robots to suit your design specifications."

EDUCATION Technology SOLUTIONS
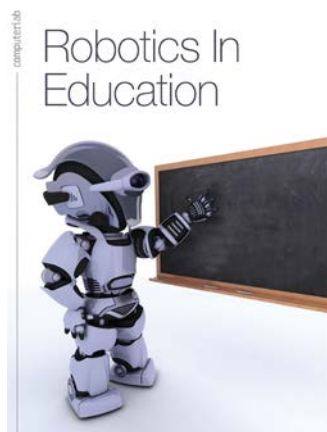
Robotics provides teachers with an opportunity to re imagine what learning could look like. It provides a context for inquiry and discovery, leading students to become active problem solvers and to engage in their own learning. If

PROMOTE INNOVATION

PRESENTATIONS AND CONTRIBUTIONS TO INNOVATIVE EVENTS

In 2013 Cathie Howe was invited to present at a number of conferences and events on MacICT's projects and philosophies.

Sydney Region
Literacy, Numeracy and Cooperative Games Based Learning VC presentation

C.A, A.P.A, A.S.A Education Seminar Presenting and Chairing Panel Discussion. "Engaging The End User: great expectations, exciting transformations"

click to see presentations on SlideShare

Gifted and Talented Education (G.A.T.E) Conference Augmenting Reality: Students as e-Design Artists

Primary Principals Association (Curriculum Reference Group) Connected Communities 21

Distance Education State Symposium Reimagining Learning and the National Curriculum

Inspire Innovate Conference Rethinking literacy through transmedia storytelling.

Click on Kids: Childrens Digital Publishing Seminar Weaving a StoryWorld Web

Macquarie University Unit TEP420 Lecture ICT in Education

NSR Gifted and Talented Education Conference (G.A.T.E) Augmenting Reality: Gifted Students as e-Design Artists

Macquarie University Unit EDUC261 Lecture Learning with Games

Northern Sydney Region Computer Coordinators Conference MacICT: Digital Technologies & Learning

PLANE: Games and Learning Webinar thought leader "Making Learning Irresistible"

PARTNERSHIPS & COLLABORATIONS ENHANCE OUR PROGRAMS

MacICT often partners with other educational institutions, industry, and projects to further enhance our scope and reach. This year two collaborations were of particular value to MacICT and its teachers and students.

LEGO education

Sandra Googan
Senior Regional Manager LEGO Education Australia

In 2013 LEGO Education is continuing to provide both financial support and expert advice for MacICT's robotics program. Examples include:

1. Covering the cost of experts for workshop development and professional learning events

2. Providing robotics equipment and resources

See a summary at the end of this report from Senior Regional Manager Sandra Googan.
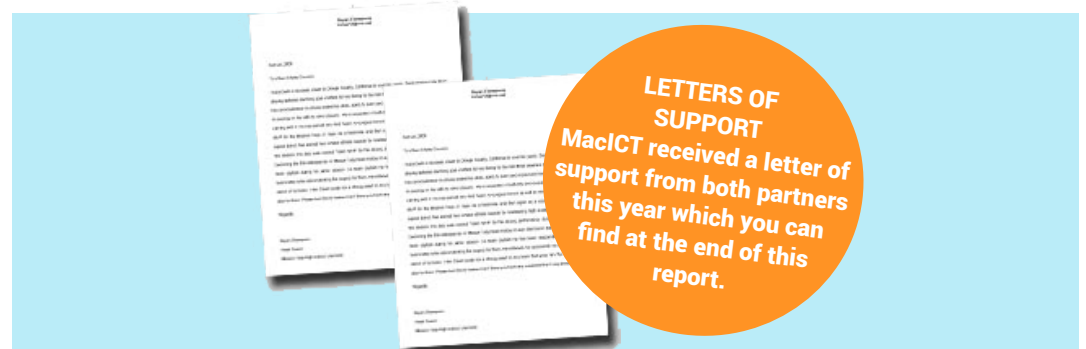
BRIDGES TO HIGHER EDUCATION

Caroline Taouk
Project Co-ordinator

This organisation works towards promoting continuing education in Schools with low socio-economic status in NSW. MacICT is collaborating with them to provide support, training, project development, VCs and more. This has allowed MacICT to extend it's reach; we have travelled to Dubbo and Broken Hill to provide professional learning workshops for teachers. See a summary of services at the end of this report from Project Coordinator Caroline Taouk.

PROMOTE INNOVATION

LETTERS OF SUPPORT MacICT received a letter of support from both partners this year which you can find at the end of this report.

WORKING WITH MACQUARIE UNIVERSITY STUDENTS

PARTICIPATION & COMMUNITY ENGAGEMENT (PACE) PROGRAM

This year MacICT sponsored 21 Macquarie University students from the Faculty of Science ISYS355 and COMP355 as well as 4 psychology students from the Faulty of Human Science.

The Semester 1 project involved students designing a game to compliment our Game Design initiatives to teach Good Game Design Principles. One of the Semester 2 projects involve providing enhancements to MacICT's website including increasing our marketing potential. The second involved students collecting, analysing and reporting on the data that MacICT collects including visualisation.

MacICT is involved in giving lectures and providing on-site excursions for pre-service teachers as part of University courses.

University students continue to be able to enrol in MacICT's Professional Learning workshops with the opportunity to gain accreditation through the NSW Institute of Teachers.

MacICT is providing employment opportunities for exemplary pre-service teachers to work as facilitators of our student Boot Camps, including training in innovative pedagogical approaches.

PROFESSIONAL LEARNING FOR TEACHERS

MacICT's Professional Learning is informed by research that is carried out by the Centre. It is always fresh and evidence based. Our Professional Learning also fuels further research.

At MacICT we believe that learning how to use technology is not enough; the heart of 21st century learning is about becoming a proficient and independent lifelong learner. Our activities promote this through an inquiry-based approach to learning where students are encouraged to collaborate and be creative in solving open ended challenges. MacICT provides quality NSW Institute of Teachers accredited Professional Learning courses that introduce teachers to a variety of technologies and pedagogy around ICT in the classroom. Our workshops and events are open to all teachers, educators and pre-service teachers.

509
unique teachers from

301
unique schools participated in our courses

▲ 122% increase from 2012

NEW LEGO WeDo

Robotics in the Classroom
LEGO WeDo | LEGO NXT | Bee-Bot | Pro-Bot
These full day registered workshops give an overview for beginners on the use of robotics in the classroom for Kindy to High School.

> Excellent information and presentation. Great hands on activities and easily applicable to the classroom.

Good Game Design
These full day registered workshops give an overview for beginners on Good Game Design principles and the cross curricular benefits of game design in the classroom.

LEGO Education's EV3 National Training
Due to our strong partnership with LEGO Education Australia, MacICT hosted a two day national training workshop on the new robot - the EV3 - released in 2013.

> [this course] has enhanced my view of student learning in diverse contexts outside school…it has also encouraged me to research and examine the literature on gaming and pedagogy and has altered my view of what real student-centred learning looks like.

NEW in 2013

Welcome to the Revolution
Introducing computing with Raspberry Pi
The Raspberry Pi is a credit card sized computer that plugs into your TV & keyboard. Participants will learn about the hardware & be introduced to Minecraft & Scratch on the Raspberry Pi run by **mechatronic engineer James Zaki**.
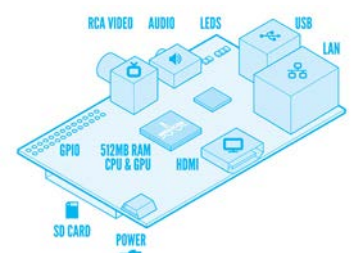
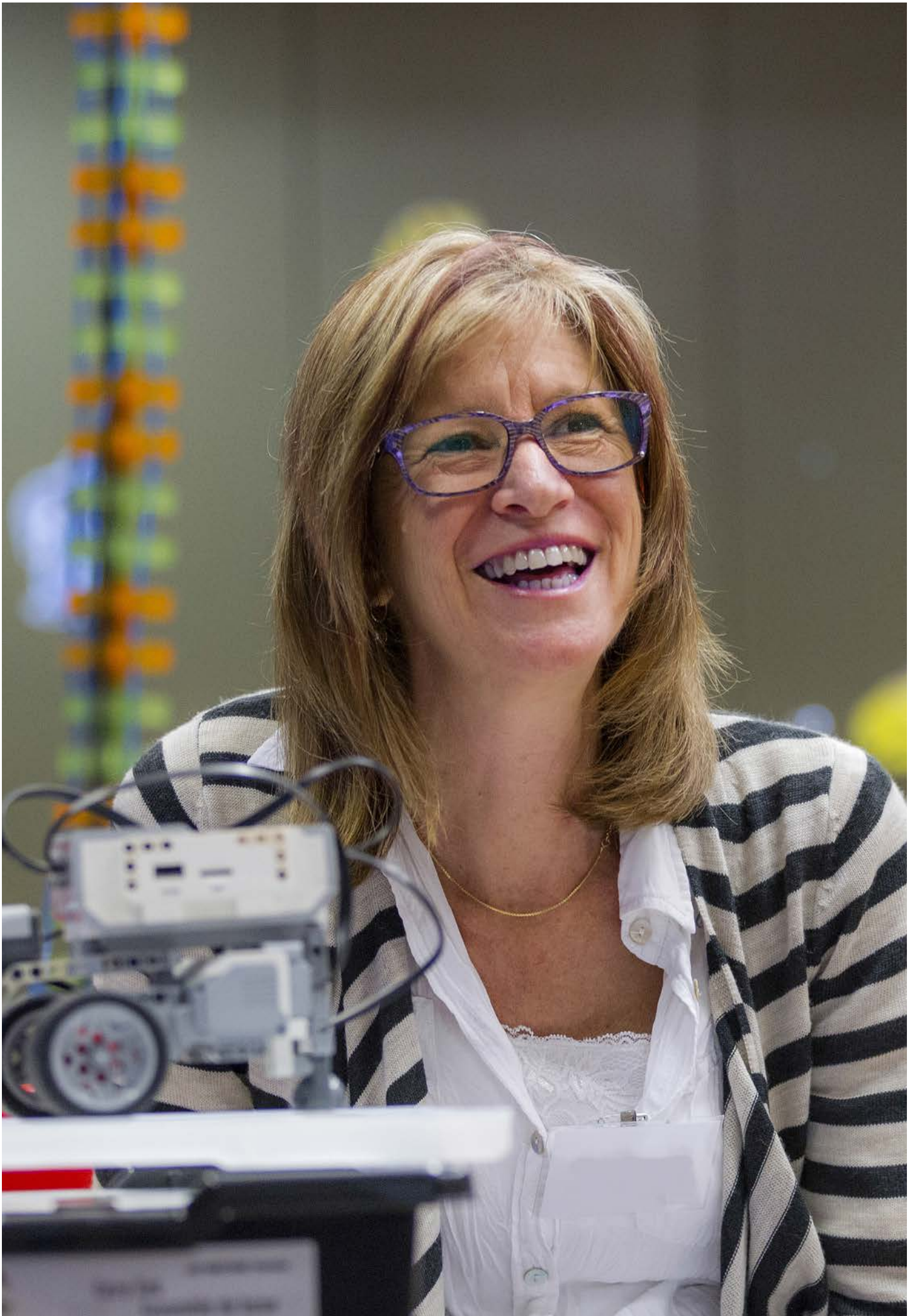**ENHANCE TEACHING AND LEARNING**

> I'll be able to use ICT resources that aren't desktop/laptop computer based. This technology allows students to get into the guts of a computer, something we don't tend to do these days.

Image: www.raspberrypi.org

LEGO NXT Programming: The Next Step

This series of 3 full day workshops were a unique chance for teachers to work with **LEGO Education Australia's only officially authorised trainer, Rob Torok,** and take the LEGO NXT robot to the next level.

Virtual Worlds in Education:
Sim-on-a-stick

Virtual Worlds in Education is a course for beginners and teachers wishing to connect with other teachers currently using Virtual Worlds. The course equiped new users to Virtual Worlds via Sim-on-a-stick.

This course, run as a special event in 2013 is being developed as NSW Institute of Teachers accredited course for 2014.

Bringing Computing to Life: Raising the bar in raising computing

Google Sponsored Workshop

Macquarie University, in conjunction with MacICT

This two day registered workshop provided a range of exciting strategies and resources for NSW's four dedicated computing courses (IST, IPT, SDD and IT(MM)) that teachers can use directly in their classrooms to create inspiring computing experiences for their students.

NEW in 2013

Meeting other teachers sharing ideas, hearing stories [was most enjoyed]. Experts are able to present in a University that has people interested in computing; it seems to be a hub of knowledge and growth.

21st Century Curriculum Design: exploring the use of iPads to support the implementation of the K-6 NSW BOS syllabus for the Australian Curriculum English

This registered course enables K-6 teachers to explore and evaluate the pedagogy behind the use of iPads in the classroom, sampling apps and discussing ways in which the technology could be integrated into the English curriculum. It consisted of a full day workshop and a unit of work ending in a showcase.

NEW in 2013

An outstanding course with terrific scope to enable schools to engage in pedagogy and practice for 21st Century learning.

Probably the best course I have participated in for a long time with regards to its application in the classroom and planning for the future to meet students needs in an engaging manner.

ENHANCE TEACHING AND LEARNING

This professional learning has enhanced my creativity when planning a lesson, and confidence to provide rich learning experiences for 21st Century learners.
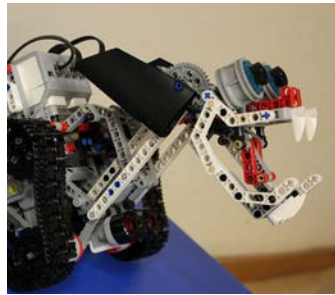
Reimagining Learning

Full day workshop featuring **Dr Alec Couros** and **Google champions** focusing on Four Essential Skills for 21st Century Learning Collaborating, Communicating, Creating and Critical Thinking.

This course, run as a special event in 2013 is being developed as NSW Institute of Teachers accredited course for 2014.

NEW in 2013

Reimagining Learning - Mini Online Course

In 2013 MacICT ran its first Online Course. Also called "Reimagining Learning' this 4 week course was designed as a follow up to the workshop day where participants could use the tools and pedagogies learned as well as collaborate and build personal learning networks.

"Great ideas for implementing changes that are essential for students to prepare for the increasingly digital world."

"The course components were very up to date with ICT needs and relevant to what our students need in their digital understanding so now I have greater confidence with offering a wide variety of ICT technology"

"I discovered new skills which I can pass on to my students. The concept of collaborative learning is a tool which can be used to engage my students and help them become more active in their learning.

MacICT is committed to providing more Professional Learning opportunities through the delivery of courses online. We are planning on expanding these in 2014 and beyond.

Click the image left to see MacICT's new Online Course Portal
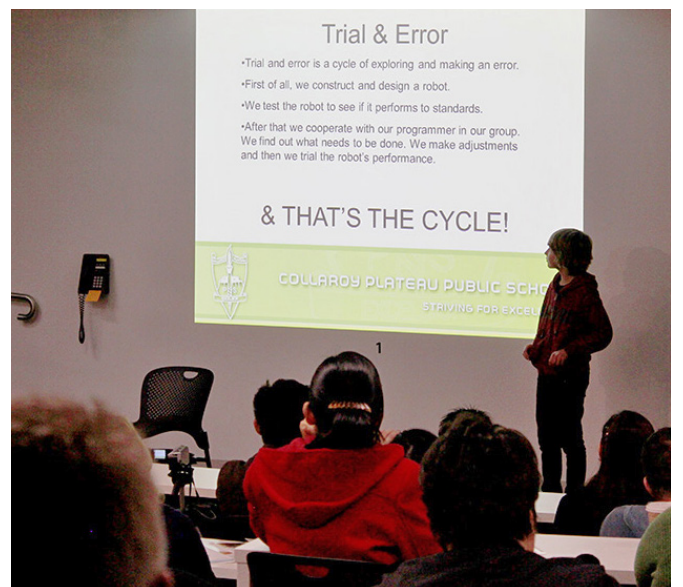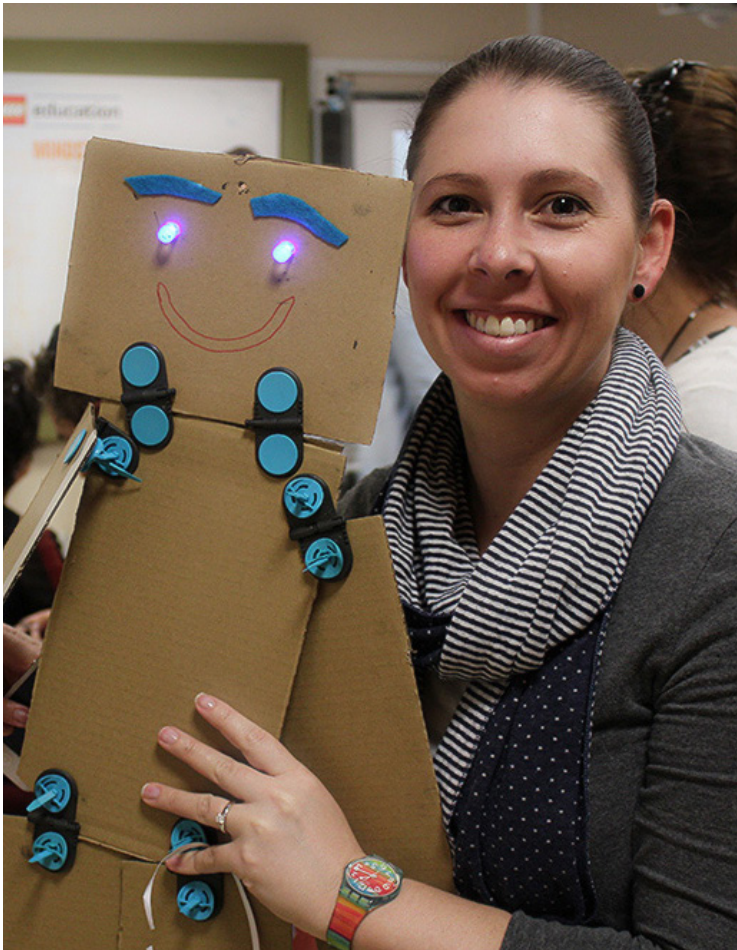
Robotics in Action

Due to the success of our 2012 workshop day featuring world renowned LEGO education expert from the USA, Barbara Bratzel, LEGO Education asked that we run another day featuring the new EV3 robot to be launched in July. This was also part of an International FIRST Australia LEGO Robotics week held at Macquarie University.

Invent to Learn

The workshop run by **Dr Gary Stager** began with the case for project-based learning, making, tinkering, and engineering. It discussed strategies for effective prompt setting. It included examples of children engaged in complex problem solving with new game-changing technologies and identify lessons for your own classroom practice.

Gifted & Talented Education Conference Workshop and Video Conferences

DEC Northern Sydney Region, in conjunction with MacICT
2 full day workshops on 'Developing differentiated learning units' and 'Teaching and learning models for use with gifted learners' plus 4 Video Conferences featuring **Dr June Maker** and **Dr Joyce Van Tassel-Baska.**

This course, run as a special event in 2013 is being developed as NSW Institute of Teachers accredited course as well as new student boot camps workshops for 2014.

The MacICT team provide high quality, professional learning to meet the needs of innovative educators. This year I have benefited from their expertise both in face to face events and as members of my Professional Learning Network (PLN) online. My particular interest this year was Virtual Worlds in Education and the team hosted a fabulous event which attracted a great crew of presenters and educators. I went on to engage my students using SIM-ON-A-STICK with great learning outcomes and high levels of engagement.

One of our Head Teachers, Mrs Linda Harrison, also attended one of the Innovation Days and came away with a swag load of great ideas for programming in IST and plans to purchase a 3D printer for our school.

The combination of high energy, professionally organised events, collaborative, connected staff and cutting edge content, provides a great resource for educators in NSW - MacICT are leaders in the use of a wide range of technologies and provide access to cutting edge resources for NSW schools (and not just in Group 1 schools).

Many thanks to the team for their professionalism and connectedness - keeping NSW at the front of IT integration and innovation.

Deb Hogg
Teacher Librarian & Multimedia Teacher, GRC Penshurst Girls Campus.

MacICT for me is first and foremost a centre for the practice of cutting edge pedagogy. The centre is a phenomenal resource for experienced teachers but the staff at MacICT also provide a fantastic opportunity for pre-service teacher training in partnership with the Macquarie University Teacher Education Program.

Working with MacICT have allowed me to develop quality practice, and the student-directed approach to technology and to learning in general have been instilled in me a great passion for teaching.

Anthony Fennell
Macquarie University student, pre-service teacher and MacICT facilitator & project team member

The reports and blog posts that you send on a regular basis inform and inspire my work. I find your research to be extremely helpful in determining how to help teachers make the most of technology in the classroom. Keep up the imaginative, grounded, useful, inspiring work that you do.

Concetta Gotlieb
Electroboard

BOOT CAMP EXCURSIONS FOR STUDENTS

BRINGING 21ST CENTURY LEARNING SKILLS INTO THE CLASSROOM
Collaboration, communication, critical thinking, creativity & innovation

MacICT's excursions provide a context for inquiry and discovery, leading students to become active problem solvers and engage in their own learning. Our boot camps give students the opportunity to have the time, space and purpose to tinker with systems such as games and robotics, allowing for thought and action to come together, and to build theories. These are critical practices for learning and discovery that have application across all curriculum areas. Students are able to analyse, manipulate and evaluate information and media, construct knowledge and solve complex problems in individual and collaborative settings.

26 game design boot camps

3 augmented reality boot camps

NEW FOR 2014

64 robotics boot camps
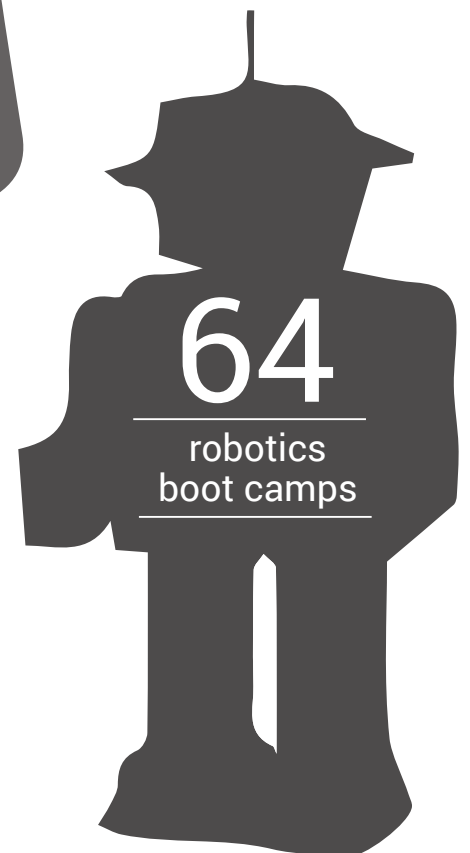
Presenting & mentoring for Sydney Region's Literacy, Numeracy and Cooperative Games Based Learning Project involving 22 K-12 Schools

Hosted the 'Bridges to Higher Education' Video Conferences. Presentations by lecturers across 4 Universities to HS students on a range of career oriented topics to encourage higher education.

ENHANCE TEACHING AND LEARNING

INVASION OF THE SHADOW PLAGUE

Currently being tested with 2 schools.

This online course (in the style of a MOOC) was created by MacICT to introduce students to Good Game Design principles through Kodu Game Lab. The website framework was developed by Macquarie University students as part of the Participation & Community Engagement Partnership (PACE) in 2012.

This year MacICT has also developed a NEW Boot Camp catering for K-2 students with the LEGO WeDo robot. This provides students with a more rigorous and exciting experience. In Term 3 we developed a NEW Boot Camp for stages 2-5 on Augmented Reality based on 2012 AR case study project. In 2013, MacICT made a significant investment in mapping both the Robotics and Game Design programs to the new Australian Curriculum.

3190

students from

54

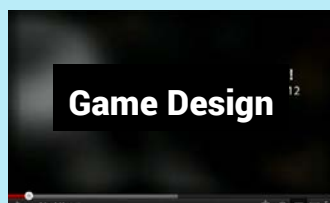unique schools participated in our workshops

▲

26% increase from 2012

LEGO Robotics Mindstorms

Game Design

LEGO Robotics WeDo

NEW IN 2013

Student feedback

I enjoyed **engineering** the best today. - Year 2

I enjoyed playing and designing my games in Kodu. I also enjoyed taking my part in conversations, **sharing ideas** and working with my group to develop our game. - Year 7

I enjoyed learning about how to program the robots. And I loved the **problem solving** involved in making the robots. - Year 5

I enjoyed building the robots and **experimenting** with modifications for the robot. - Year 6

We got to create our own robots from scratch and the challenges are great. I liked the fact that we had **trial and error** when creating our robots. - Year 10

I enjoyed the Mars Challenge the most, partially because you got the chance to build your own creation, and **feel proud of it**. - Year 6

I enjoyed basically the robotics; programming it was the best as you could do whatever you wanted for example avoidance technologies and reverse switches. I didn't think anything to this extent existed! - Year 6

I enjoyed the challenges the most because the let me be really **creative**, as well as requiring a lot of **in depth thinking** about how the robot would work and if it would complete the challenge successfully. - Year 5

HOW WOULD YOU RATE THIS EVENT?

76% GREAT

Not good | Good | Great
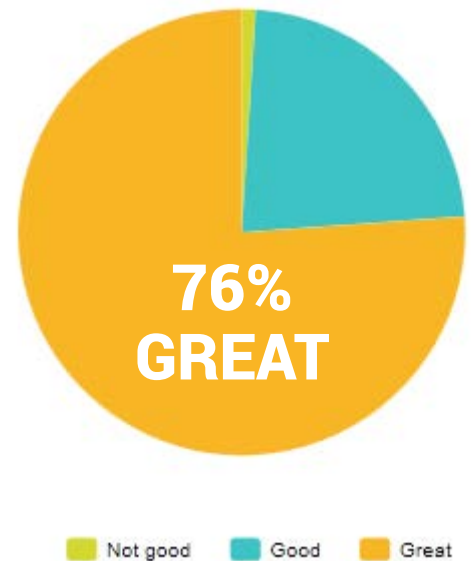
WHAT DID YOU ENJOY THE MOST?

Working as a team and **comparing your ideas** with other groups.

Building the robot,a lot went wrong, but in the end, we **felt really proud** that it all worked out AWESOMELY!

I enjoyed the fact that the **basis of the activity was imagination** and building (once learned) was easy and fun.

Kodu because you were allowed to **use your imagination** for your worlds.

Teacher feedback

WHAT DID YOU LIKE MOST ABOUT THE EVENT?

Great pace, hands on, **collaborative problem solving**. Challenges were **differentiated** to suit varying abilities.

The interactivity, problem solving and opportunity to develop some **critical thinking skills**.

Every student was **involved, engaged and challenged.**

The structure, organisation and pace of the program. A **brilliant success.**

Diverse **student engagement** particularly from **unexpected** students.

The **open ended investigation** and the way in which the activities tested **cognitive patience**.

I liked seeing kids working together that **wouldn't normally work together.** They solved their problems and were one of the most successful groups.

Very hands on, **catered for all children in class (ASD, deaf and ESL),** good instructions, kept activities moving along at a good pace

MACICT'S REACH

In 2013 MacICT's reach increased dramatically with teachers and educators from around NSW (and beyond) attending our events. Collaborations with Google ('Bringing Computing to Life') as well as Bridges to Higher Education (Robotics programs) provided the funding for teachers to be able to travel to our Centre.

In 2014 we hope to extend our reach further by developing more Professional Learning delivery models that engages rural and remote Schools as well as enabling MacICT staff to run face-to-face activities in areas outside of Sydney.
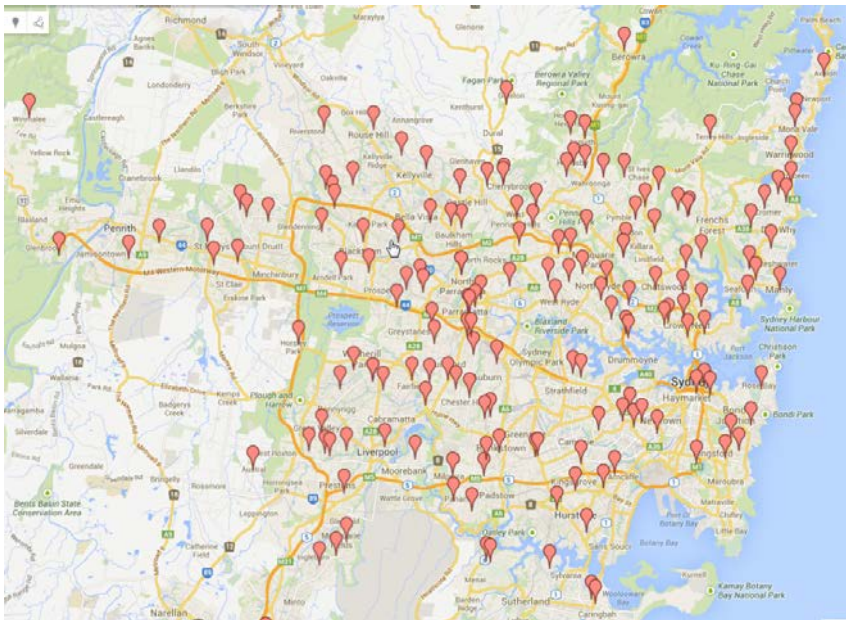
Click the image to see our interactive Google Map.
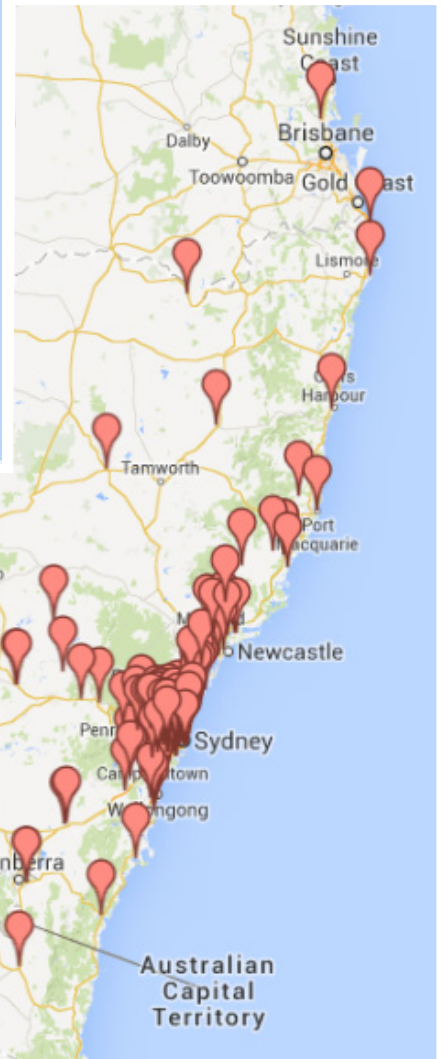
ENHANCE
TEACHING AND
LEARNING

RESEARCH PROJECTS

RESEARCHING
CONNECTED
COMMUNITIES 21

SERAP approval and Macquarie University Ethics approval

The Researching Connected Communities 21 Project is a collective case study of 17 Australian government primary and high schools promoting the developed of self-managed models of change while leveraging digital tools for teacher professional learning and connecting best practice within and between schools. The project will report on how change has been employed in the schools as they implement a range of ICTs to transform pedagogy and meet the demands of the new curriculum.

Project Team: Dail McGilchrist, Professor John Hedberg, Myra Wearne, Cathie Howe, Michael Stevenson

100+

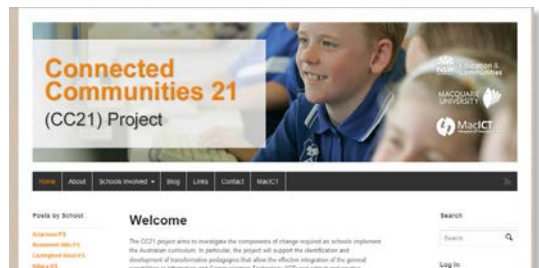teachers & school
executives from

17

schools

Artarmon PS
Beaumont Hills PS
Carlingford West PS
Killara HS
Chatswood HS
Turramurra HS
St Ives HS
Pymble PS
Manly West PS

Killara PS
John Purchase PS
Quakers Hill PS
Epping North PS
Hilltop Road PS
Barnier PS
William Dean PS
Regentville PS

click to read participant's blog

PURSUE AN INNOVATIVE RESEARCH AGENDA

Connected Communities 21 Project Showcase Day

The CC21 Showcase represented the culmination of each school's project-related activities during the research component. Two key ideas were used to frame the showcase: "Tell your story" and "Why learning matters" as these encapsulated what the project team had been exploring in the workshops, school visits and data analysis. Over 250 people attended the Showcase. These included project participants, other teachers and school executives from DEC and non-DEC schools, corporate staff from DEC, academic staff and pre-service teachers from Macquarie University, parents and students. Each school was allocated a large table and noticeboard and two of the project participants from that school were stationed at their table at there at any given time. Students from the participating schools were also encouraged to be involved.

250+
parents, teachers, academics and executives attended

WEAVING A STORYWORLD WEB

SERAP approval

The examined the potential value of transmedia storytelling for literacy development by investigating the worth of the 'Weaving a StoryWorld Web' framework, a teaching and learning model developed by MacICT's research advisor to support the design, development and creation of transmedia storyworld. The project will particularly focus on the professional learning of the teachers, examining if transmedia story telling is an engaging and effective way to meet the ICT elements in the Australian Curriculum: English.

Project Team: Dr Nerida McCredie, Cathie Howe

Term 3
St Ives North Public School
North Sydney Demonstration School
Cromer Public School

Term 4
Willoughby Girls High School

2014
Executives and teachers from the follow Distance Education Centres:
Southern Cross, Sydney Distance Education HS, Dubbo School of Distance Education, Camden Haven HS Distance Education.

click to see online
StoryWorlds
from Term 3

StoryWorld Web
Created by 3W from Cromer Public School
for 'Mrs Frisby and the Rats of Nimh' by Robert O'Brien

StoryWorld Web
Created by 3LK from North Sydney Demonstration School
for 'The Composer is Dead' by Lemony Snicket

StoryWorld Web
Created by 3H from St Ives North Public School
for 'Storm Boy' by Colin Thiele

STORYWORLD WEB
Jane Eyre

Click here
to visit the
StoryWorld Web!

Click here to see
the Live Week content
Where is
Jane Eyre?

PURSUE AN INNOVATIVE RESEARCH AGENDA

International Council for Educational Media (ICEM) 2013
Nanyang Technological University, Singapore

Two of MacICT's projects featured in papers presented at this conference **"Researching Connected Communities 21" & "Augmented Reality in Education - cases, places and potentials"**

In 2014 MacICT will pursue an overriding SERAP approval for a variety of projects going into the future. This will further facilitate academic research at MacICT.

Professor Janet Greeley
Executive Dean, Faculty of Human Sciences

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29 January 2014

Endorsement of the MACICT Innovation Centre – a partnership between Macquarie University and the NSW Government Department of Education and Communities

I am delighted to provide a letter of recommendation on behalf of the MacICT Innovation Centre. MACICT is a longstanding and productive partnership between Macquarie University (MQU) and the Department of Education and Communities (DEC) in New South Wales. The University provides the building and infrastructure to house the Centre. A senior Professor from the School of Education at MQU supports the development of a research program and in 2013 the School contributed $20,000 towards research with another $20,000 proposed for 2014. The benefits of having the Centre on campus are many and varied. The Centre provides outstanding opportunities for engagement with schools bringing teachers and students on campus. In addition to providing professional development for teachers in the latest ICT techniques, these visits also expose school students to a welcoming university campus which we hope may inspire them to consider university study in the future.

As the Centre provides support for students and schools representing all cultural and socio-economic backgrounds, it also assists the University and the DEC in meeting goals around social inclusion and diversity.

The Centre provides a venue where pre-service and in-service teachers interact while developing their skills. It is also a place where students from across the university (e.g., from Computer Science, Engineering and Psychology) have opportunity to work with school students and teachers. We hope these interactions may inspire some of them to consider becoming teachers in the future.

The Centre is a great supporter of the University's Professional and Community Engagement (PACE) program, a unique MQU initiative that promotes student engagement with communities and the requirements of professional life. Students from psychology and science as well as teacher education worked with Centre staff and school teachers to collect and analyse data for research and other reports. Students from Computer Science built applications for use by schools.

The Centre has also been an impetus for research and research collaboration. For example, the Connected Communities project involved 20 schools examining the pedagogical techniques employed in delivering the new Australian curriculum. This research helps support evidence-based practice. The project on trans-media storytelling led to the production of a paper that was presented at a national and an international conference. These presentations profiled the fruitful collaboration between the DEC and MQU on the national and international stage, demonstrating we are at the forefront of ICT innovation.

An academic has been assigned to work with the Centre 0.5 days per week. She is developing an overarching SERAP application to support research collaboration with DEC schools by our students enrolling in the new Masters of Research – the new pathway to PhD studies at MQU. This research will advance discovery in ICT innovation and assist decision making about ICT innovation and practice.

At the State level, the engagement of DEC staff with students and academic staff of the University has led to State-wide activities delivering on the goals of the DEC and the University to promote innovation and best practice in ICT and education.

Professor Janet Greeley
Executive Dean, Faculty of Human Sciences

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The Centre has been heavily involved in the Bridges Program – an initiative involving a consortium of NSW universities whose aim is to encourage students from disadvantaged backgrounds to build an interest in science and mathematics and consider pathways to university. The Centre supported both hands on and video-conferenced delivery of the FIRST Robotics program to schools across NSW. This project involves collaboration with the Faculty of Science at MQU and with LEGO Education.

The presence of the MACICT Innovation Centre on campus promotes greater links with schools and teacher education for academics from across the University. The Centre's profile with schools from across the State and in the national and international arena has helped profile DEC and MQU as leaders in innovation in ICT in education. The ongoing collaboration has also demonstrated the value of working together to promote evidenced-based practice.

The University is keen to build on this relationship. Several external grants received by staff in Education and Science at MQU provide further opportunities to grow research and engagement with the DEC. A number of these projects are in collaboration with other universities within and outside NSW. I can see the MACICT Innovation Centre as a dissemination point for research outcomes from these projects and as a test bed for the transition of new ideas into practice.

Macquarie University's strategic framework is outlined in the document *Our University: A Framing of Futures* which can be found at www.mqu.edu.au/our-university

The framework sets out strategic priorities that seek to promote a culture of transformative learning in a research-enriched environment and to create an innovation nexus where Macquarie and our partners contribute solutions to the world and develop lasting relationships. Education is one of the pillars of the Faculty of Human Sciences and it is our ambition to build on its strengths in research while deepening its engagement with schools. The MACICT Innovation Centre is an excellent vehicle to help deliver on these goals in the field of teacher education. Extension and expansion of our existing partnership with the DEC is an important element in bringing these priorities to fruition.

Yours sincerely,

Professor Janet Greeley
Executive Dean
Faculty of Human Sciences
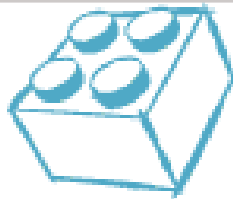
Inspiring teachers and engaging students in authentic technology based learning, with tremendous dedication and deep pedagogical knowledge and teaching expertise are the cornerstones to the Macquarie ICT Innovation Centre's services. LEGO Education is proud to be working in close collaboration with the Centre in offering such high quality learning experiences to all teachers and students both on and offsite and digitally.

LEGO Education believes that student engagement is vital for every successful educator. Getting students excited about the curriculum is tougher than ever in a world where technology leads them to expect immediate gratification. That's why a creative, problem-solving and hands-on approach to learning is the best way to engage our 21st century youngsters. Hands-on experiences are more conducive to a student's motivation than other methods. When students are given real-life problems to solve, and tools to design their own unique solutions, they take ownership of the learning process. In partnership with the MacICT, this LEGO Education mission comes to the fore. Feedback to me from teachers, educators and students has been extremely positive particularly the quality of the experiences delivered and reported to have 'made a substantial difference" to their classroom practices.

Over the two years of this partnership, there are a number of ways we have and continually collaborate to bring successful outcomes:

1. Hosting events for local teachers when overseas educators are in Sydney. These have been in high demand from teachers.
2. Working with leading LEGO Education trainers to develop workshop materials for boot camps and teacher training
3. Involvement with FIRST Australia and FIRST LEGO League to leverage and support teachers and schools in this program
4. Willingness to trial and localize new LEGO Education products to fit the needs of the Australian curriculum
5. Implementing a progressive series of workshops tailored for the needs of the classroom teacher and students
6. Ongoing Networking to ensure relevancy, evolving teaching practices and pedagogical theory and a widening the 'circle of influence'

There is a deep understanding to the goals, expectations, deliverables between both MacICT and LEGO Education and without a doubt has proven to be one of the strongest partnerships servicing NSW schools and students due to the most professional organizational ability to meet deadlines and coordinate relevant activities . I see even more innovative collaborative activities in the future to further the reach of the Centre and have a greater impact for students and teachers.

Sandra Googan
Senior Regional Manager
| Australia | New Zealand | Hong Kong | Taiwan |
LEGO Education

Dear Graham and Jason,

Sorry for the lengthy email but I wanted to take the time to thank you for your support of Bridges to Higher Education and let you know how fruitful the relationship has been with the Macquarie ICT Innovations Centre. I can not thank Cathie and Lyrian enough for their continuous support and amazing contribution they have given to the success of the Bridges Connect project which I Chair.

As I am sure you are aware, Bridges to Higher Education is a $21.2m initiative, funded by the Commonwealth Government to improve the participation rates of students from communities under-represented in higher education.

The project brings together the collective resources and experience of the University of Western Sydney, the University of Sydney, the University of Technology, Sydney, Macquarie University, and the Australian Catholic University. The partnership also includes NSW DEC, TAFE NSW, the University Admissions Centre, local government organisations, education offices, Indigenous organisations and other community, philanthropic and social enterprise organisations.

Bridges Connect is a schools engagement program which aims to build capacity, raise awareness and motivation, and provide academic enrichment to schools with low rates of participation in higher education. The project utilises the DEC's Connected Classrooms and Adobe Connect technology to deliver a series of engaging presentations.

With the support of MacICT we have been able to deliver the following in the past 12 months:

- 3 Robotics Teacher PL Workshops involving 22 schools from all over NSW (including one workshop in Dubbo and one in Broken Hill)
- 3 Teacher PL Workshops on using IWB, VC and Adobe Connect
- 1 Teacher PL workshop on using iPads for the design of the new English Curriculum
- Facilitating the Robotics in Schools Program via Connected Classrooms to 22 schools in NSW including 5 schools in Dubbo and 4 schools in Broken Hill.
- 24 Curriculum based video conferences using experts from UWS, MQ, UTS, Sydney and ACU as well as other partners such as Television Sydney. These video conferences have been a great success with schools participating from all over NSW. We have also used these presentations to create 24 FREE school resource videos that have received close to 4000 hits on YouTube http://www.youtube.com/user/BridgesToHigherEd/
- 4 careers focused video conferences that encourage students to turn their hobbies into future career and study paths through higher education.

The activity this year has been extraordinary, reaching over 2000 teachers and students in over 77 schools state wide which could not have been achieved to this extent without Cathie and Lyrian. We have also been able to grow our relationship with 5 university partners in Sydney, all with the joint goal of engaging schools and communities and encouraging further education.

I would be more than happy to meet with you should you require any further detail on the initiative and how the projects are tracking.

Thank you again and best wishes for the Christmas and New Year break. I very much look forward to working with the team in 2014 and expanding on our activity.

With best regards,

Caroline Taouk
Bridges to Higher Education Project Coordinator I Widening Participation
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(Monday - Thursday)

MacICT

Macquarie ICT Innovations Centre

Report prepared by Cathie Howe and Lyrian McGregor.
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