



THE KOPU PROJECT



The Kopu Bridge

CASE STUDY OF THE GROWTH OF A LEARNING COMMUNITY,

THAMES/COROMANDEL REGION

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MINISTRY OF EDUCATION

Te Tāhuhu o te Mātauranga

Scope

The Kopu Cluster schools' have set out to create an atmosphere where their students develop 'a life long love of learning'. It is their intention to transition the schools' into a 21st century model of teaching and learning where information communication technology (ICT) is a key part in the learning process, providing tools for following an inquiry-based learning model, which will encourage students to think independently. During 2005, three schools in the cluster setup for their role in the Kopu Project. In January, Opoutere School established their position as the lead school by fitting out all four of their classrooms as technology-enriched environments. The school's principal and deputy principal also took on the facilitation role between the schools. In July, Parawai School and Maramarua School opened their pilot classrooms.

The use of ICT tools complements inquiry-based learning, allowing students to link with information that they may need in order to work out an answer to a question or a solution to a problem. The integration of ICT tools into learning provides more opportunity for interactive approaches within authentic learning contexts, which helps to make learning more motivating, enjoyable and relevant for the students. The teacher remains responsible for the learning of their students, but acts in a less directive and more facilitatory way, and allows students to take more responsibility for their own learning.

Involvement in the Kopu Project has seen a range of technology introduced into the pilot classrooms, including laptops, interactive whiteboards (IWB), data projectors, and the Knowledge NET (KN) learning management system, which is an important tool for collaboration between schools and school and home.

Each school developed their own inquiry learning model, and teacher training days were used to develop teachers' skills in building and using mini inquiries based on their school's inquiry learning model. All units of learning within the pilot classrooms are taught based on the school's model, with the internet as the primary source of information for students and teachers.

The importance of a partnership in the learning process between home and school is recognised as a key factor for the success of the Kopu Project, and throughout the year-long set up phase there has been a strong emphasis on communicating and educating parents about the KN and the changes taking place in the schools. Parents and caregivers with access to a computer have been encouraged to become more involved with their child's education by logging-on to the KN to see what their child has been learning. Parents have also been encouraged to provide feedback to the school, which is also seen as another way of involving parents more closely with their child's education.

Location

The Kopu Cluster is made up of are seven small rural primary; Opoutere, Hikuai, Matatoki, Moanataiari, Parawai, Waitakaruru and Maramarua Schools. Geographically, the schools are spread across a wide area and straddle the Hauraki and Coromandel Districts, but all are within 40 minutes of the provincial town of Thames and two hours of New Zealand's largest city, Auckland.

Preparation for a pilot classroom

The cluster's previous involvement with an ICT Professional Development contract helped prepare teachers for the challenges of the Kopu Project by giving them the skills to integrate ICT into the classroom. However, there was still a lot of preparation required before the Kopu Project could get underway.

The location of the schools' posed a number of issues. One of the issues is access to reliable technical support. Technicians' fees can be prohibitive, and as a result the schools have grown their ICT capability in an ad-hoc manner, which often is in response to crisis situations. Another issue is the schools' poor internet access. Under Project Probe broadband recently became an option, however residual issues over internet connections still remain.

At an early teacher training day best practice guidelines outlining the establishment of a pilot classroom were presented to the cluster. The guidelines were used to build the inaugural pilot classroom at Opoutere School, which opened in January of 2005. Refined guidelines were used in the later establishment of Parawai and Maramarua schools' pilot classrooms in July 2005.

The guidelines for the pilot classroom recommended the:

- Establishment of a stable network of computers in each of the classrooms;
- Installation of stable broadband internet access;
- Development a robust Inquiry Learning Model;
- Implementation a Learning Management System, (Knowledge Net.)

Access to the information-rich internet is paramount to the Kopu Project's 21st Century teaching and learning model. However, a student's ability to access this resource is dependent upon a school's ability to provide stable networked computers in the classroom.

Also vital to the 21st Century teaching and learning model is a reliable broadband connection, which allows for a greater quantity and variety of educational resources to be accessed. The Kopu Cluster's utilisation of the internet had been comparatively low prior to the installation of broadband.

Comparing broadband to dial-up, students from Maramarua School said:

- "You can get on sites quicker. It's easier to find information."
- "You spend more time doing other stuff on the computer than waiting for it to load."
- "Well last time the Internet didn't go very fast, but now its way better."
- "More time to search for info."

Next the schools developed an inquiry model of learning. Researching and locating information to construct and apply new knowledge in new contexts was a key part of the learning taking place within the pilot classrooms. Mastering the ICT tools and the new model posed a significant challenge for some teachers as it required them to adapt to the technology and change the way they had traditionally taught.

Opoutere, Maramarua and Parawai schools spent the twelve months prior to the Kopu Project working on their inquiry models, and were teaching units based on them.

The chosen Learning Management System was KnowledgeNet (KN). KN is a virtual network environment that sits on a server outside the school, and is available to anyone with internet access and the appropriate passwords. KN has a public area that can be used like a website, and various pass-worded zones are available to teachers, students and parents. School work can be accessed and submitted via the school zone. The research zone has been popular and allows users to bookmark useful sites, such as news sites, encyclopaedias, quick links and a 'top 20' site. Appropriate additional links to the research zone can be made through the school's administrator. The KN is commercially available but requires tailoring to meet each school's need. It can be set up easily by a confident computer user, but it takes time for teachers to realise the potential of the KN and apply to their classrooms. Students have readily embraced the KN and feel empowered that it is available to them as a learning tool at home.

Teacher training, establishing how schools' use KN and developing useful KN skills has taken time, but has been accepted as part and parcel of the new learning model. Teachers were released for KN training two days per term and by the fourth term KN was fast becoming an integral part of all pilot classrooms.

Setting up a pilot classroom

Parawai and Maramarua schools both identified senior classes (Year 7-8) to be the pilot class. The teachers were confident users of ICT and both had been using an inquiry model with their students. Parent information evenings were held at the schools and involved members of BOT, PTA, as well as interested parents. Parent attendance was lower than expected and extra meetings may be scheduled for next year.

Parental awareness of the KN and how it can be used was also low and a KN parent education programme may be offered by the schools in 2006. However, it is important that if the parent programme is offered, it is done in small manageable steps for the teachers involved.

The Parawai Story

Parawai School has a roll of 350 students and is the largest school involved in the Kopu Project. The school became involved in the project because it was seen as an opportunity to establish a digitally-enhanced classroom where the students could use their inquiry model in collaborative projects of learning. Rob Petrie was identified as an enthusiastic teacher and a strong ICT advocate, and was chosen to teach Room 14 in the pilot classroom. The Year 7 and 8 students in Room 14 were confident users of ICT and had completed units of learning based around their inquiry model, which was referred to by the students as 'Inspector Tui'. The classroom was already equipped with two networked computers but saw the addition of a Promethean Activeboard interactive whiteboard with a



Teacher, Rob Petrie

sound system, DVD and video player, data projector and six laptops,* with four of the laptops wirelessly connected to the school's network. The teacher's laptop became an important classroom tool run in conjunction with the IWB. All planning and teaching is now generally centred around the teacher's laptop and the KN.



Ceiling mounted data projector

To give the teacher time to experiment and learn about the IWB in an unpressurised environment, the technology was installed a term prior to the school starting on the project. This time was affectionately referred to as "playtime", although it was a somewhat focused playtime.

* HP kindly donated two of Parawai School's laptops.

An important component for the teachers involved in the pilot classroom has been professional development, and since March 2005, Parawai School teachers have participated in numerous professional development days. A joint KN training day was held for Parawai and Opoutere schools, which saw teachers learn how to use and find their way around the KN environment. Parawai school teachers also got the benefit of Opoutere school's wisdom, as Opoutere School had been working with the KN already for a year. Two more KN training days were held later in term two, but release days were organised in term three and four so teachers could work on specific classroom-related KN tasks.

By term four Parawai School's pilot class was using the KN in a variety of ways. Lessons and homework were posted on the KN and each student had developed their own web page with a biography and pictures. The class was also involved in the online "Hot Schools" collaborative project with the two other schools from the Kopu cluster. This involved students participating in an online forum, posting a photo of their hotspot, and taking daily temperature readings that were sent to a facilitator to distribute around the schools.

Professional development also included teacher training day once a term. The focus of the teacher training days was on integrating ICT tools into the classroom programme. Term one looked at setting up the pilot classroom while term two looked at the integration of the IWB into the classroom. The focus changed a little for term three's training day, and was spent sharing what had been learned so far and discussing how the Kopu Project could achieve its goals. The day also saw the launch of cluster zone, which will allow resource sharing between the cluster schools. Term four's day focused on building resources that could be shared across cluster. Rob Petrie said the training days gave him something he could take back and work with in the classroom. He also appreciated the opportunity to work and to learn from others.

Schools considering a similar project to the Kopu Project must plan carefully and ensure that:

- Equipment and hardware purchases are able to perform the tasks planned in the project. In the case of the Kopu Project, the equipment was selected because it was best suited to supporting the inquiry model of learning within a community of learners.
- The equipment is installed by experienced people with knowledge of the school environment. Using a data projector in conjunction with an IWB is more complicated and requires specialist knowledge to install and set it up properly. The equipment is best set up permanently in one room, rather than moved between rooms.
- Teachers have regular, on-going, needs-based access to professional development. Professional development days should not "swamp" the teacher, but provide them with manageable 'chunks' of learning. Professional development will also ensure better utilisation of the equipment.
- Opportunities to work alongside teachers from other schools who are using the same or similar equipment is vital. Collaborative learning amongst teachers helps to build confidence and expertise in using the equipment. The knowledge gained at professional development workshops helps teachers to be confident back in the classroom.

Kopu Project Impact

After five months the pilot is already reporting a change in the teaching and learning happening in the classroom. Teacher Rob Petrie has noticed considerable changes to the way he teaches, and the students have noticed changes in the way they are learning. Most of the students agree they have a higher level of motivation and involvement in their learning as a result of the new approaches being used.

Teaching Practice

Prior to the setting up of the pilot classroom, Rob had begun using and refining the inquiry model, “Inspector Tui”, with his students. Rob used a data projector, which was wheeled into his classroom on a trolley and shared with teachers from other rooms. It had to be booked, and planning took into account that the data projector might not be available when required. Now with the pilot classroom and the equipment permanently set up, Rob has unlimited access to the equipment. The IWB has been operational since the start of the project, and a concerted effort has been made to ensure the students use it as much as possible. The students seem to enjoy the IWB and take the opportunity whenever they can. For example, during a mathematics lesson the IWB was used by the students to explain how they had solved a probability problem. The students found that there was more than one approach to achieving an acceptable solution, and the students took the lead while Rob offered support and guidance for the entire lesson. Student participation throughout the 40 minute lesson was high, with a number of students being given the opportunity to add notes or to demonstrate using the IWB. The teacher’s role was a supporting one of asking the occasional question of the students at the IWB, and the rest of the class.

The introduction of the IWB has seen lesson preparation time reduce for Rob. With Active Studio software installed on his laptop which interfaces with the IWB, Rob is able to prepare lessons more quickly and away from the school. The software also allows Rob to save work completed by students on the IWB, which he can later review and use to plan for the next lesson. Rob also prepares KnowledgeNet (KN) lessons from home, which are immediately available to students once saved onto the system. Rob says that the resources can be reused easily in different learning situations, and require little or no adjustments to work successfully.

Students also refer back to previous lessons, and do this by connecting to the IWB in class or using computer outside the classroom.

Recently, students in Rob’s class have begun to develop their own KN page, which includes their biography. Through the KN pages, Rob is able to access students’ completed work from any computer with internet access. This enables Rob to monitor each student’s progress within a task, and allows him to make comments and suggestions which the student can respond to the next time they work on that page. A number of the students said they have been motivated to check their web pages at home because of the feedback from their teacher. Rob is clearly making an impact with these students away from the pilot class and out of school hours.

Figures collected from a recent survey conducted at Parawai School indicate there is awareness amongst students of the KN, and some are exploring the possibilities of using it at home.

Table 1. Parawai Knowledge Net Survey.

Parawai Knowledge Net Survey								
Number of times adults in the family have visited Knowledge Net								
	None	Once	Twice	Three				
	24	4	2	1				
Number of times eldest in the family have visited Knowledge Net								
	None	Once	Twice	Three	Four	Five	Ten	Fifteen
	15	5	3	3	2	1	1	1
Number of times eldest in the family has worked Knowledge Net								
	None	Once	Twice	Three	Four	Five		
	22	1	2	4	1	1		
Age of Child								
	11yrs	12yrs	13yrs					
	13	9	9					
Home Access to Computer								
	Yes	No						
	30	1						

At present the survey shows minimal parental use of KN, with only seven out 30 parents having accessed the KN at home. It is hoped that with greater emphasis placed on encouraging students to use the KN at home that parental involvement will increase accordingly.

Recently the pilot class went on school camp to Rotorua. Camp activities with URL links were made available to students and parents. All notices and forms for signing were also made available on the KN. At camp, the KN also proved to be a very useful home and school communication tool. Rob’s says the KN was used to provide clear lines of communication between the school and home, and it proved to be a successful method.

Student Learning

It has not taken long for the pilot classroom students to find ways to use the new technology to improve their motivation towards learning.

Rob says more students are taking an active role in class discussions, which are often centred around IWB activities. The size of the IWB has meant greater student inclusion as all can see the screen, while the visual nature of the IWB seems to have focused the students more. Students are often in the ‘driving seat’ with control of the pen and the direction of their learning. Individual learning styles of students are also being catered for as the IWB and its resources require students to use more of their senses in the learning process.

Having laptops and the stand alone computers has meant the pilot classroom students are able to complete more of their work in class. The laptops and stand alones are also available on demand, and students are able to use them to access the internet through their wireless connection to the school network. Students have been observed leaving their desks and getting a laptop to take back to work on whatever it is they need it for.

The students have developed their own system to ensure the laptops are always charged up and ready for use, and have proved responsible in the laptops’ use and maintenance.

The IWB is regularly used by Rob for collaborative learning and is used for group work, class discussions, feedback sessions, and recording responses. During group work, the IWB is rotated between the groups during a lesson.

The pilot classroom has been generally approached as an adventure in learning. There have been issues along the way that have been overcome, and Rob continues to be enthusiastic about the opportunities that the technology is providing for his students.

At the end of 2005, reflecting on the year so far, Rob concludes that he has learned so much, but realises that he has really only just begun to understand the technology's potential for future teaching and learning within the pilot classroom. In 2006, Rob believes the students and parents of his classroom will be presented with more learning opportunities as a result of being part of the pilot classroom in the Kopu Project.

The Maramarua Story

Maramarua School is a three classroom school on busy State Highway 2 between Thames and Auckland. The school had initially hoped to set up all its classrooms as technology-enriched learning environments, however, finances dictated that only one class could be established at this stage.

The pilot classroom teacher is Brenda Williams, who for the last two years has been a mentor teacher providing leadership in the school's ICTPD cluster. Brenda has taken on the challenge of integrating ICT into her classroom programme, and has made the most of every opportunity to do so.

Brenda teaches a class of Year 6, 7 and 8 students, who are competent users of ICT, and were the most suited for the pilot classroom.

Early in 2005 Brenda took part in the KnowledgeNet (KN) teacher training days. At that stage the school only had dial up internet access, which meant posting photos onto the KN was a marathon effort and wasted a lot of class time. In July, the school joined Telecom's 'School Zone Light', and broadband was installed during the July school holidays. The pilot classroom was also set up at this time, and saw the installation of a Promethean Activeboard with a sound system, but excluded a video and DVD player. A data projector was permanently mounted to a bracket from the ceiling, and two laptops were kindly donated by HP who is great supporter of the Kopu Project. The laptops are an invaluable addition to the four older networked desktop computers already in the classroom, and the school hopes to add another two laptops to the pilot classroom when funds allow.



Maramarua School



Teacher, Brenda Williams

The school's technology-enriched classroom got under way on day one of term three, with each student being given the opportunity to use the IWB. Brenda's teaching style has always been student-centred, with her facilitating learning by working alongside the students. She did not want this to change with the arrival of the technology. Brenda considered it important that the technology-rich environment complemented her student-centred approach to teaching and learning, and students would be expected to take their turn presenting to the class using the IWB.

Throughout the first few days of term three there was a steady flow of visitors to the pilot classroom as other

students, teachers and parents were interested in seeing how the new technology was being used.

Kopu Project Impact

Pilot Classroom Teacher, Brenda Williams.

Student access to home computers at Maramarua School is lower than Parawai School's pilot classroom, therefore access during class time to the outside world is very important to the students, as using the internet to locate and apply information is essential to forming and expanding their critical thinking and knowledge pool.

Two years ago, the technology-enriched learning environment was considered beyond the reach Maramarua School. Teachers and students struggled with using older and slower computers. Regardless, Brenda worked hard at developing the capability of her students to get the most out of the infrastructure available to them.

Teaching Practice

Prior to the pilot classroom, Brenda was working on an inquiry learning model, and was using it in class. Brenda allowed her students the freedom to make choices about their learning and facilitated opportunities for the students to ask questions and to follow lines of inquiry based around what it was that they needed to know. Brenda and other teachers from the school looked closely at a number of inquiry models, including the Gwen Gawith Action Learning Model. In 2004, the school began to develop their own inquiry model, which they called 'Agent Marama'. The name is based around the school's name, and phases of the moon have been used to illustrate the steps involved in the model. This work provided the pilot classroom with a platform for an inquiry model of learning.

Before the Kopu Project, Brenda was involving her students in various learning situations where they used ICT to work through inquiry units. Computers, emailing, telephones and faxes were the tools of learning available to the students. An unreliable internet connection made Brenda and her students excellent problem solvers, and the arrival of new technology was mostly taken in their stride.

Student Learning

Recently the students of the pilot classroom were surveyed to find out how they thought their learning had changed as a result of their involvement in the Kopu Project. Sheets of paper with the headings, *Activeboard*; *Laptops*; *Faster Internet*; and *the way we are learning*, were handed out. Each student was asked to respond to each of the headings. The following table lists their reflections.



A student using the IWB

Table 1: Student reflections on how learning has changed

How has our learning changed with the:

Activeboard

- Fun, because if you do not have to rub the marker off all of the time.
- We have way more fun now and it's really cool.
- Learning is easier and more fun using the Activeboard.
- It's more fun and easier to understand everything.
- Learning's fun with the Activeboard. Don't have to rub everything off.
- It makes learning more fun and easier.
- More fun when we learn.
- Quicker with maths.
- I enjoy learning with the Activeboard. It is way much more fun than normal ones. Not many people can say they have watched movies on the board.
- Don't have to rub the stuff off. It's more fun. I like the activities.
- It is easy to use and the learning is fun.
- We learn more. It is fun to do things. It is easier to get things into our books.
- We can watch other people's slideshows. We can go back to things.
- Easy to learn.
- Learning is fun and easy. We can't all see what our teacher has or is telling us because we had to crowd around the computer.

Laptops

- There are more computers to use instead of waiting.
- Well, we can use it at our desks and more people can go on the computers.
- More people can be on the computers at once.
- More people can be working on computers.
- More people can go on the computers. You can use it at your desk.

- You can sit in your desk and use the laptop so you don't have to come back to your desk if you forgot something.
- More people get to go on the computer.
- You can do it at your desk. More people can use the computer.
- I enjoy writing stories on the laptop. Even though it's harder to click and type on.
- You can do it at your desk. More people on computers.
- You can work at your table.
- More people can search the net.
- Take them to your desk and more people can use the computers.
- You can take it places.
- More people can go on the computers. We get our programme done when we want to, and we can use them at our desk and learn to use different computers or technology.

Faster internet

More time to search for info.

- Well, last time the internet didn't go very fast but now its way better.
- We spend more time on the website rather than waiting for it to load.
- You spend more time doing other stuff on the computers than waiting for it to load.
- You can get on sites quicker. It's easier to find information.
- We don't have to wait as long as we would.
- We go on the internet faster.
- Get more time on the internet, we can go on websites to find information.
- We have much more time to find info that we need.
- You spend more time on it getting information. You get to websites quicker.
- It is easy to have faster Internet than normal computers.
- We can spend more time finding information instead of loading.
- We can spend more time to get our information.
- We get our work done faster and don't have to wait until it has finished.

The way we are learning in general

- It's become easier to learn new things and you have more fun when you're learning.
- More movies and activities on the board.
- Everything seems better and easier to organise everything.
- It is better using these things as it will be easier for future times.
- We get through school quicker.
- You don't have to write stuff back up on the Activeboard, you just save it then go back later.
- We get to listen.
- Yes, because it makes it quicker.
- It's easier, more fun, and we actually work with these appliances.
- It is more fun to learn. We use the laptops, computers, camera and Activeboard more.
- Our class has changed because we have computers and more learning.
- We get more information, find information faster.
- We use the computer, internet, and camera more, and the teacher doesn't have to do all those things for us.
- Cameras are made easier and our learning is so much easier because we now understand.

The survey results showed that most of the class felt that learning was more fun in the technology-enriched pilot classroom. Students enjoyed using the Activeboard, and liked the idea that completed work could be saved and revisited. The laptops gave students more opportunities to complete work and enabled them to work at their desks. Comments in the survey also suggested the students learned more, and that the computers made learning easier. The arrival of fast internet at the school was appreciated by the students as it allowed them to spend more time searching for and using information, and less time waiting for the pages to load, making more productive use of their time. The results also suggested that the students had more control over their learning and were making choices about how to use the different technology in the room. The pilot classroom has given them greater access to technology, making them confident users of ICT. Less time is also being spent waiting for the teacher to organise and set up the equipment. Overall, a positive attitude exists amongst the students of the pilot classroom.

Brenda believes the students of the pilot classroom will continue to thrive in the technology-rich environment. This year has been about learning to use, develop, and apply the technology, and the learning curve has been steep. During 2006, there will be a consolidation of what was learnt in 2005.

The focus will be on the greater use of the KnowledgeNet, and using the technology in collaborative learning experiences with other students from the Kopu Project cluster of schools.

The Kopu Journey

January 2005

Opoutere School sets up with all classrooms becoming technically enriched with Pilot Classroom Setup.

[Opoutere Photostory](#)

Presentation prepared by Jan-Marie Kellow, Opoutere School

[Setup for DigiOps 1](#)

Criteria for being prepared to become technically enriched

PowerPoint prepared by Jan-Marie Kellow and Vaughan van Rensburg, Opoutere School

March 2005

Kopu Project Launch

[Launch Photostory](#)

Presentation prepared by Wayne Howes, Kopu Project Director

July 2005

Schools with Pilot Classrooms have developed an Inquiry Model for Learning.

[Inspector Tui Investigates](#)

PowerPoint prepared by Rob Petrie Parawai School.

[Comparison of Kopu Project Inquiry learning Models](#)

Comparison prepared by Wayne Howes, Kopu Project Director

[Pilot Classrooms Setup](#)

PowerPoint of the Lessons we learned Prepared by Wayne Howes.

[The Kopu Project: A 21st Century Teaching and Learning Model](#)

Ulearn 05 Conference Workshop as presented by Wayne Howes, Vaughan van Rensburg and Jan-Marie Kellow.

Teacher Training Days

- Term one - Focussed on setting up for a pilot classroom.
- Term two – Learnt skills for integrating IWBs into classrooms.
- Term three - Shared what had been learned so far and reaching goals for the Kopu Project.
- Term four - Built resources that we could share across the Kopu Project

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