

## **Katikati College Year 12**

### **Abstract**

Reference: BP630

Classroom Practice: Year 12

Title: Multimedia CD-ROMs

Duration: One year

Overview:

Students were asked to develop a multimedia solution to an identified issue. Students would produce a CD-ROM with some combination of text, images, audio, video, animation and 3-D modelling.

The unit was designed to implement many of changes to the teaching and assessing of Technology in an ICT context that were identified in a Katikati/Hillcrest Beacon Practice cluster review.

Experiences gained in this formative unit have been used to improve teaching strategies and processes in the 2007 year, resulting in better ongoing teacher-student interaction and streamlining of the assessment process.

### **Focus Points:**

- Developing high quality ICT outcomes
- Valuing ICT skills
- Getting the balance 'right' between undertaking and documenting technological practice and developing skills and outcomes
- Simplifying the NCEA assessment
- Developing programmes that appeal to students

### **Background**

**Katikati College**, in the Bay of Plenty, is a decile 6 co-educational school with an approximate Year 7-13 roll of 950 students.

**The Technology programme:** In Years 7–9 students follow a broad Technology programme in Materials, Food and Information and Communication (ICT) Technology. At Year 10 students must choose a full-year option from ICT, Food, Hard and Soft Materials or Graphics. The ICT option leads into a Year 11 ICT programme in which the full year's work is built around a web design theme. At Year 12 the ICT option again sits alongside other technology options, as well as unit standards courses in Computing, Furniture Making, and Hospitality.

Malcolm Howard, Head of Faculty Technology, graduated with a Bachelor of Engineering from Canterbury University and practiced as a professional engineer for eight years before moving into teaching. He has taught maths and ICT and became Head of Faculty at Katikati College in 1996. Malcolm was awarded a New Zealand Mathematics, Science and Technology Fellowship in 2004, which he used to study the technological practice of ICT professionals.

**The Katikati College and Hillcrest High School Beacon Practice cluster** comprises four 'computing' teachers focused on improving the teaching and assessing technology in an ICT context in their schools.

### **Pre-planning**

In 2005, the Katikati/Hillcrest Beacon Practice cluster reviewed its teaching and assessment practices in Technology in an ICT context, identifying a number of issues to address.

These included:

- to have one big project at Year 12 (rather than two as in the past) to allow more time for teaching skills and developing high quality outcomes
- to focus more on technological theory and practice and skill development and less on assessment
- to implement better defined and more easily accessed schedules
- to further individualise teaching, including 'checkpoints' where a student's progress is monitored and moderated
- to make more use of virtual media for documentation

Teacher Malcolm Howard then came up with a unit for his Year 12 class where he could incorporate these ideas into practice. In it, the Year 12 ICT students were asked to develop a multimedia solution to an identified issue. Students would produce a CDROM with some combination of text, images, audio, video, animation and 3-Dimensional modelling.

The course was designed to cover a range of multimedia techniques and an introduction to computer programming using ActionScript. Malcolm says that they wanted to add a greater range and depths of skills in the 2006 unit, so planned to include more multimedia skills such as 3-D modelling, and cover digital audio and video in greater depth.

Malcolm incorporated into the unit the alternative ways the cluster had identified of gathering and presenting evidence using the technology available in an IT classroom and developing alternative schedules. Instead of using folios to document their work, students would be encouraged to use methods such as screen shots, digital photos, audio clips and digital videos. Along with these, Malcolm would be having several conferences with each student, discussing and questioning them about their practice during the development of their outcome.

Students were given details in a course information handout. This format provided a variety of assessment opportunities with internal and external Technology Achievement Standards being supplemented by an appropriate Computing Unit Standard.

*Malcolm Howard: "A different approach to assessment meant it was the project driving the practice rather than assessment driving the practice".*

A key change in structure for the year was to delay the focus on assessment until it was necessary. The plan was to turn this around by teaching the aspects of technological practice that the class needed to know, then starting work on projects and finally discussing the specific assessment criteria.

## **Delivery**

The year began with an introduction to the process of identifying an issue, developing a brief and modelling a conceptual design, and then developing and implementing the solution. "The idea," says Malcolm "was to give the students the bigger picture of their overall practice first, rather than getting bogged down on the detail required for assessment. That came later."

An initial plan was drawn up by each student to establish the timeline and key milestones for the initial development process. This was revised where necessary and updated every week as the conceptual design was developed and implemented. See: Sam's Initial revised and final revised plan (pdf 68Kb); Andrew's Initial revised and final revised plan (pdf 64K).

Potential issues were explored and evaluated against an established set of criteria to identify the issue which would be followed through. Key factors were identified and prioritised in terms of their implementation and interactions. See Sam's Key Factors (pdf 24Kb)

An initial brief was formulated and this was progressively refined as the project evolved. See: Andrew's brief (pdf 100Kb); Brendon's brief (pdf 564Kb); Reuben's brief (pdf 44Kb); Sam's brief (pdf 80Kb).

Students then developed a series of concepts, and selected one for detailed modelling, and this was progressively refined as the project evolved. See Andrew's model (pdf 176Kb); Benji's modelling presentation (pdf 348Kb); Luke's model (pdf 392Kb).

The implementation process required a review of the key factors and the brief, as shown in Cindy's project presentation (pdf 1.3Mb).

Planning was reviewed to establish the new key milestones required to develop and implement the final outcome. See: Brendon's revised plan (pdf 340Kb); Andrew's revised plan (pdf 24 Kb).

Final evaluation followed the implementation phase – see Luke's final evaluation (pdf 16Kb).

### **Term 1 – Skill development**

Term 1 had a heavy emphasis on skills development. Various modules of differing length gave students the necessary skills required to create their own multimedia CDROM presentation that addressed their identified issue.

The first module was on using [Audacity](#), an audio editor and recorder, application suitable for multi-media presentations. This gave the class the opportunity to work towards Unit Standard 5960v5

The next module was on Flash and ActionScript, building on the basics covered in Year 11. Flash is a movie format used to create interactive websites, digital experiences and mobile content. The class learned the required file formats and ActionScript commands for controlling video and audio in their multi-media presentations. The book Natcoll Flash was used for revision and the Natcoll ActionScript book for the more advanced material, in contrast to previous years when teachers had created worksheets for their classes.

Although this module could be used for a unit standard, Malcolm chose not to assess this, to avoid over assessing students through the year.

Originally he had planned a short module on working with images in either Fireworks or Photoshop, but students seemed to have good skills and understandings of this topic so it was not delivered.

Students then researched existing multimedia CDs, partly to give them ideas about their project and partly to gather evidence for submission towards Achievement Standard 90367v2.

The final skills module was on 3-D modelling, in which students learnt how to make 3-D models and how to export them in a range of formats for multimedia presentation.

*Malcolm Howard: "As the year progresses the role of the teacher changes significantly – from a position of directing most of which is happening during the skill development part, through to one of working alongside each student as they take ownership of their project".*

### **Term 2 – Project work**

*Malcolm Howard: "A key factor contributing to the success of this course was that students selected an issue they were interested in; this helped keep them motivated throughout the year".*

In term 2, students began work on their multimedia projects, by first choosing an issue. This was an important stage where students investigated different possible issues, before getting into detail on their chosen issue. They worked out who their stakeholders were, the environment where their

solution would be implemented, and investigated the practice of other technologists working in the same field.

When students understood the 'big picture', had chosen an issue and had begun their investigation, they were introduced to the detailed assessment requirements within the assessment tasks and schedules. "In this way the project is driving everything and the assessments just naturally fit," says Malcolm.

While students worked on their projects, Malcolm found he needed to teach various aspects of technological practice. This was generally done in the first ten minutes of a period before the class carried on with their project work. Topics included planning, consideration of the viability of a solution, how to implement a solution and modelling a conceptual design. Most of the rest of the second term saw the students working on the development and modelling of their conceptual design.

Further skill development was required in term 2 in some smaller modules – working with video, more on ActionScript, and 3-D modelling using the application SketchUp. However the emphasis was very much on the students focusing on their project work.

### Terms 3 and 4 – Final solutions and assessment

By the beginning of term 3 most students were focused on building and developing their final solution. This stage required more teacher intervention as students examined ways to implement their solution and gauge its fitness for purpose. Students were given formal 'checkpoints' where they had to submit all of their work on the project to that point. This meant that issues could be discussed before they became insurmountable. Malcolm says that some students benefited a great deal from that earlier interaction.

The deadline for the final solutions was a couple of weeks before the end of term, to ensure sufficient time for the implementation phase. The completed solution and associated documentation for internal assessment was due the end of Term 3. Students used a checklist to ensure they had collected all the required evidence.

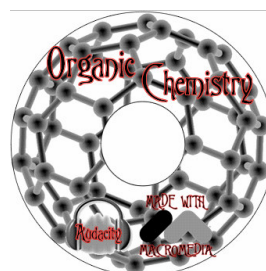
Term 4 was largely used for re-submission for the internal Achievement Standards and for collating evidence for submission for external assessment.

### Outcomes

*Malcolm Howard: "I'm rapt with the overall quality of the outcomes; they've exceeded what I hoped they would do."*

The unit created opportunities for both high-quality technological practice and the high-quality outcomes which result from this practice. Students documented and presented their practice in a range of ways, using a mixture of Word documents, audio, video, screenshots, PowerPoint presentations and visual diaries.

Here are five examples:



Andrew (.swf: 6.6Mb)

John (.swf: 3.5Mb)

Reuben (.swf: 284Kb)



Luke (.swf: 1.9Mb)

Sam (.swf: 13.9Mb)

Students rose to the challenge of selecting a project in which they could “pretty much do anything” while not getting carried away and losing sight of the original goal. The outcomes were individual and diverse. This is no better exemplified than by the two students who had chosen the same issue relating to their Year 12 chemistry course, whose individual development work meant there were two quite different outcomes produced.

Malcolm says he is comfortable with the stage that has been reached in the development of the Year 12 course. The multimedia theme has proved to work well in providing scope for a good range of skills and ICT domain knowledge to be developed. Students enjoyed the variety of skill development work and responded well to the opportunity to identify their own issue, gaining real satisfaction from the development of a high quality final outcome.

*Student Reflection: “In Year 12 the process is very similar to last year but more involved; you’ve got to come up with your own issue from the start. I’m getting more comfortable with the process and I’m definitely able to plan better”.*

*“Some aspects of the subject are quite difficult and some of the skills can be tricky; but on the whole if you plan well you can get the work done and pass okay”.*

### **What Next?**

Next year the finalisation of the alternative schedules will provide greater opportunity for ongoing teacher-student interaction, streamlining and simplifying the assessment process.

*Malcolm Howard: “Once we move out of the skill development phase and into the early stages of the project we want to have this ongoing interaction, to actually record evidence from our discussions with students on the schedule”.*

The ICT department has been moving from providing paper-based resources for students to intranet-based delivery. Also they are moving to ‘bite size’ resources rather than trying to cover too much in any one resource. For example, they might provide a planning resource which covers milestones and key stages, and later provide another resource which focuses on a different aspect of planning. It is planned that all these small resources will be put on the school intranet in a variety of formats.

Malcolm is also considering the opportunities for incorporating the experience of practising technologists and people with wider ICT expertise. The class currently looks at a case study on the development of a CDROM by professional technologists; a focus for 2007 will be to look at other ways to incorporate practising technologists.

Students moving from Year 12 ICT to Year 13 can choose from an ICT Achievement Standards course or a Computing Unit Standards based course.

In the Year 13 ICT course, students develop advanced skills in a wider range of software applications. Students will follow an individualised programme where they specialise in areas that interest them – mixing and matching what is appropriate for their identified client issue. They will also choose an assessment programme that suits them.