

## CASE STUDY

# Leeds Polytechnic: IT for teacher training

In the education department of Leeds Polytechnic, Acorn technology provides the base for training new teachers to work with IT. The department is one of the country's largest initial teacher training establishments, with almost 1000 students on its four-year B Ed and one-year Certificate courses.

At Leeds, information technology skills are recognised as one of the key areas in which new teachers will need to be proficient as they educate pupils for life in the next century. All students are given training in the general and specific impact of IT in all areas of education and practice.



Leeds Polytechnic: Beckett Park Complex.

## A KEY ROLE FOR ACORN

Andy Bowles, the department's IT Co-ordinator, described the way computers are integrated in the Polytechnic's teacher training program. "We really have to concentrate on two overlapping areas: we have to show our students how to use IT for themselves and also how to apply it in the teaching of others. In planning our courses we have to look at what is happening in schools now, and the way IT teaching is going to develop over the next decade. We use a lot of Acorn equipment for two reasons. Firstly, because it's so widely used in schools at present and secondly, with the advent of 32-bit technology and the RISC system, because we feel the Archimedes is going to play a significant role in schools in the future."

To meet the variety of students' needs, the department makes use of Acorn hardware both as a centralised resource and at various points in the different subject areas around the campus. There are three main computer laboratories, including both networked and stand-alone machines. These are available for individual students to carry out project and assignment work, and are used extensively for group teaching.

There are also Acorn systems sited in different subject areas within the department – for example, in the maths and history sections – which are used by students for their own personal assignments, by staff and

lecturers as "electronic blackboards", and for evaluation of software relevant to the subject area.

At the start of their course, all students are given a core IT course which introduces them to the basic computer skills, including the principles of word-processing, spreadsheets and databases, using Acorn hardware and software.

## CAMPUS-WIDE ECONET

The department runs a campus-wide Econet network of around 60 machines. Originally this was made up of BBC and Master series machines, but now includes the Archimedes range. As Andy Bowles explained, these new machines are in constant use:

"Acorn systems are used extensively by our students. The Archimedes systems are particularly in demand, because they're so powerful and easy to use. Many students have their own Acorn systems, and in conjunction with the network this has solved some of our demand problems. For example, when students have to prepare a piece of work, they can now generate the text file on their own machines and then pull it into the Archimedes at the department for use with the Desktop Publisher package."

## WORKING WITH RISC OS

The ease of use of the Archimedes series and the RISC OS desktop have ensured its success at Leeds. Functionality and flexibility of the user interface is particularly significant when related to the role IT will have in schools in the future. "Teachers need a wide range of IT skills themselves, to be able to meet the needs of students under the new National Curriculum. This states that children should develop 'IT capability': the understanding of what they can do with computers and how computer skills can be applied. Teachers being trained now have to be able to impart this capability by applying computer solutions across the curriculum and by encouraging pupils to have a positive attitude towards IT."

There is still a lot of initial apprehension amongst student teachers and school pupils alike when they are first faced with a computer. The Archimedes desktop, with its mouse and icon interface, overcomes this apprehension. Students here have a limited amount of time to spare to work on the computers and they don't want to have to spend three-quarters of that time mastering the machine. Using RISC OS is so straightforward. It inspires confidence and students can see the results of what they've done very quickly."



## ACORN IN DESIGN AND TECHNOLOGY

Beyond giving teachers the basic IT skills, the Polytechnic's training courses have to take account of all the developments taking place in schools, in software learning tools, and in the general strategy of IT in education, as laid down in the new National Curriculum. Within the Polytechnic, the Design and Technology department is particularly affected by the increased role of IT in the classroom, and makes use of Acorn equipment to teach the new skills to students following their courses.

The department uses the central resource labs and in addition has its own Acorn Master and Archimedes machines, which are used by students for project work. Alan Farrow outlined the way that students work. "All our course modules are project led. Students research, develop and manufacture their own products using IT wherever appropriate.



**"Pyramid": The result of a recent student CAD/CAM project carried out on the Archimedes.**

A large proportion of the work we do centres around the Archimedes, which has really opened up the possibilities for many of our students. They all take the Education department's core course, and then move on to look in depth at various IT applications: computer control, CAD, CAM and so on. The Archimedes is ideal both for teaching these applications and for the students to work with them."

## ACORN DTP FOR STUDENT PROJECTS

"An obvious example of this is a project one of our students has just completed, using desktop publishing. She used the machine to produce a user's pack – a set of instructions

and a disc of sample art files – for a graphics package that runs on the Archimedes. The user's pack is aimed at children in schools, and not only did she carry out extensive trials of the software on the Archimedes, she was also able to design and produce the final document on the same machine."



**Students using BBC A3000s in the "Arc Room".**

In other projects, students are using the CAD CAM applications available for the Archimedes to research, design and implement their own computer controlled processes. The work they do in IT complements parallel courses such as electronics: students might construct their own analogue device and then write a piece of software to allow the device to be controlled by a micro. According to Alan Farrow, the department's Acorn machines are used extensively for such projects, and have won a lot of support among students: "The success of the Archimedes can be summed up very easily by the fact that already about 40% of our third year and final year students have bought their own machines."

## IT AND TEACHING PRACTICE

Throughout their training, potential teachers are encouraged to apply their IT skills for use in the classroom. The work they do reflects the wide use of Acorn equipment in schools. Students carry out assessments of existing learning materials and many write their own software, mostly using BBC BASIC. The materials they produce are then used on teaching practice. At present, a large part of this project work is focusing on how best to integrate IT elements in the teaching of the various core subjects in the National Curriculum. Andy Bowles outlined one long-term project which is just about to begin at the polytechnic:

## ACORN ACROSS THE CURRICULUM

"A common element in the science, geography and technology syllabuses for the National Curriculum is that they each require pupils to carry out work on monitoring the environment. Here at the polytechnic we have a Landscape and Architecture department, and in conjunction with them we're now looking at ways in which IT can be used in environmental studies.

We've set aside a site at the Polytechnic in which to construct an environmental site, including a butterfly garden and a pond, on which we can experiment. We plan to build a small structure containing a number of Acorn micros and carry out various environmental monitoring and control tests. We'll be checking things like the oxygen content of water, the lighting conditions around the site, and the soil conditions and developing materials which can then be used in schools."

## ACORN NOW AND IN THE FUTURE

At Leeds, the emphasis is very much on training teachers to use IT as an aid to their other teaching skills. Teachers learn to appreciate what they can do with computers and are encouraged to experiment with their own materials, for use with different age groups across the full range of subjects taught in schools. They familiarise themselves with the different packages available for each subject area and, just as importantly, learn how to apply the basic skills of data handling, calculations and text/graphics manipulation.

As the use of IT grows in the classroom, newly qualifying teachers need to make sure that pupils are encouraged by their first experience of computers, not intimidated. Acorn equipment provides Leeds Polytechnic with the means to achieve these aims, and offers the flexibility to meet the future needs of teachers and pupils across the whole range of educational applications.

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**Acorn**

Acorn Computers Limited  
Fulbourn Road Cherry Hinton  
Cambridge CB1 4JN  
England

Telephone (0223) 245200  
Telex 8177875 ACORN G  
Fax (0223) 210685  
Viewdata (0223) 243642