Millennium Schools PROJECT

The Millennium School's Project is now two years old and has developed into a premier experience for teachers and pupils in revitalising and refreshing D&T curriculum at Key Stage 3. Recent issues of News and Views have focused on practical aspects and individual topics. In this issue and the next we have asked the schools themselves to give us their view.

Allen Bower is Director of Technology at Lady Manners School in Bakewell, Derbyshire who takes up the report.

TECHNOLOGY ENHANCEMENT PROGRAMME
Millennium Schools Project
A SCHOOL PERSPECTIVE

Background

Lady Manners School was chosen to take part in this project, along with eleven other participants, commencing September 2001. TEP have worked in close collaboration with the D&T team at Sheffield Hallam University to provide invigorating, lively and cutting edge projects aiming to stimulate the pedagogy and ensuing experiences for Y7 and Y8 in the first year and in the second Y8 and Y9. The National Centre for Social Research has also been involved in the evaluation of this project.

Overall View

I have witnessed a wealth of change in Design and Technology education and much ensuing heartache, worry and work has prevailed in realising new goals. I have also been involved in the inception and delivery of new initiatives: some good and others not so good with ideals from those in high places – 'Cloud 9?' But not this one!

This project has provided my department and the young people involved with exciting possibilities. In short, it has brought renewed vigour and creativity into my Key Stage 3 Schemes of Work which, by the way, were already successful.

New materials have been employed to bring new techniques, colour, shape and form, and unsurpassed creativity into the education of our students. In electronics, PICS (Peripheral Interface Controllers), have been employed to initiate inventive programmable systems. The evidence should speak for itself in the following text and graphics.

Take a look!

All projects can be found on the TEP website (www.tep.org.uk) and in booklet form from TEP.

The following list of projects are those which were made available to us and training was provided by Sheffield Hallam to aid our preparation – most enjoyable.
Flat Flash, Message in a Box, Phone Pod, Post It Note holder, CAD/CAM torch, Aroma Fan, Jitterbug, Mouse Mat and The Bubble Blower.
It is not the intention of this article to cover all of these - I shall therefore concentrate on the three most pertinent. However I do have to mention the Bubble Blower which has taken upper school by storm. It has been used in Systems and Control at GCSE and AS level with great aplomb – everyone wants one! I am using it as the first exciting project in our newly launched 'Enhanced D&T' for Y9 in September 2003. And so to the projects; A-MAZ-ING Torch, Fone Flash and the Jitterbug. All projects described are our own versions, which have been developed from the TEP models.

A-MAZ-ING Torch

The educational possibilities, within any project, can be vast and wide. We take care to establish appropriate contexts for our activities such that they are part of a progressive Key Stage 3 curriculum.
The torch is a Year 8 project which has captured the imagination of our students in a marked way. They use Techsoft 2D Design templates to create an outline form which will eventually form the basis of their solution. This shape is cut out of a pre-machined CNC acrylic blank (◂ see photographs). The machining process produces the blind hole for the battery, the LMS maze and the circular acrylic cover plate.

An ideal situation would be to transport the outline shape to the CNC router so that it would produce the intended design. Unfortunately this is not possible as there are at least 66 Year 8 students working on this activity at any one time – the technician would have to be super human!

The 'take home factor' is enormous and many parents and students have commented upon the high quality of this product – even intimating that it would not go amiss in high street gadget shops. I think that speaks for itself!

Fone Flash

My department has benefited from this TEP experience in so many ways and this project is a case in point. In our adaptation and development of the Phone Pod we soon focused on the process of press forming as opposed to the sometimes-tricky technique of vacuum forming. This mainly focused practical task is the output of a graphics scheme of work at the beginning of Year 9. Students are taken through more advanced graphical techniques culminating in their own designs of a mobile phone. What better way to end such an activity! A mobile phone holder which incorporates the TEP phone flash circuit. This pre assembled PCB illuminates a programmed sequence of flashes on the on-board LEDs. When in silent mode the circuit responds to an incoming call or message, (very useful when homework is taking place???).

The photographs should tell you the rest of the story ▸
Students are enthralled with this activity and take home is 100%.

Jitterbug

What a wealth of opportunity this project can provide for development and sheer innovation! Staff and students alike have had so much fun in exploring the many possibilities embedded in this activity – from simple switching of LEDs and a motor to those which are programmable through PIC technology. Whilst my Year 7 students are working on this activity, Year 10 through to Y13 have asked why they couldn't do this activity when they were in Year 7 – a very telling set of comments!

One of the TEP proposed solution to control involves the use of the IQ controller. This in essence is an excellent idea but we found that the need for 2 battery holders and the accompanying mass of wires rather reduced our endeavour for high quality outcomes. You can see the version produced by our department which is, in our view, a better engineered and therefore more successful product. The learning potential is enormous but there is no escaping the fact that they really enjoy the decorating and fixings. The look on their faces says everything when they test it for the first time.
One version (see photograph ▸) utilises a microswitch for motor control when the bug is placed on a surface. The employment of LED flashers for both the buzzer and LEDs adds to the overall effect. A further design activity then follows where students design a 'jitter park' such that it can be placed on its base without operating the microswitch..

Further models have been developed in house and include a version that is remote controlled and others which are controlled by PICS. One even utilises a speech module.

Students are currently working on this activity (see photographs ▸) and early signs from both staff and students are extremely encouraging. I cannot imagine any being left for the display cabinet.

Final comments

I cannot speak too highly of the excellent contribution TEP has made and is making to the Design and Technology Community in our schools. The intention of this article is to make you aware of some of the possibilities now available to us – if you have not tried any of these activities please do so! If they are adopted in the right spirit they will change the hearts and minds of all those involved. Good luck!

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