

National Curriculum 'Design and Technology Capability': An approach to Teacher Education

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At Leeds Polytechnic two and a half years ago, the Bachelor of Education with Honours degree in Design and Technology was required to be modularised, for institutional reasons.

Instead of taking the existing course and deriving modules from its content, it was decided to write new modules in relation to what was perceived to be required by the 'Technology' National Curriculum Working Party, Interim Report. The modules were written in such a way as to be open ended and thus changes could be made as the NC was formalised through standing orders and developed in schools.

Leeds Polytechnics BEd. Hons. degree at this time, had three very separate specialist components in Physical Education, Home Economics and Craft, Design and Technology. It was decided to bring the latter two components together under the new NC title of 'Design and Technology'.

This enabled a new and unique innovative approach to the training of teachers of both subjects. Joint modules were written where students from both Home Economics and CDT could work together on a variety of projects and assignments. Specialist subjects modules were also written, in order that students would also develop in depth knowledge, skills and understanding through practical project based work in CDT and Home Economics. Students are able to choose their specialist route through the degree at the end of the second term, having undertaken a very broad based foundation course, which introduced the wide variety of D&T activities.

General aims for joint group work with students of HE and CDT are for them to gain an overview of the new 'NC' subject area of 'Design and Technology'. They should also be able to understand the relationships between the relevant aspects of the five former subjects which now come under the D&T umbrella. (Business Studies, Art/Design, Information Technology, Home Economics and Craft,

Design and Technology). They should be able to value, and have a working knowledge of, the work of other specialist teachers. Be able to work with such people in a team to develop 'Themes', 'Contexts' and 'Programmes of Study' for their pupils. They should gain knowledge of generally available materials, processes and techniques used in all the related school workbases and be able to advise pupils on a wide range of their work, to Key Stage 3 in Design and Technology, (thus ensuring progression and cohesion within a contextual thematic approach). They should develop communitive, discriminatory, interpersonal and negotiation skills.

The degree is now in its second year and to give a flavour of the type of work that is undertaken, it may be helpful to look at a specific module from the degree in a little more detail.

DT5 is a second year joint module, with the title of 'Product Design'.

The whole group, made up of Home Economists and CDT specialists were given the Context of 'Cosmetics' to research, just before the Christmas vacation 1990. This was done in order to take advantage of the tremendous amount of research material available on this context, at this time of year. On their return, the whole group divided into teams of four, to give a balance of Home Economics/CDT members.

The teams were encouraged to look at new product development as if commissioned by a manufacturer, as though they were a 'Design Consultancy' of various specialists. Each team was required to undertake market research to investigate and research areas for new product development. Approximate costings were required for potential ideas and the relevant target market indicated, based on the research collected. It was made clear that new product development costs of one off products and mock-ups bore no relation to the cost of a mass

produced product, which can be purchased at retail outlets. However, they were required to provide actual R&D costs and recommended wholesale and retail prices. Products, packaging, advertising and associated promotional materials were all investigated, researched, analysed and evaluated.

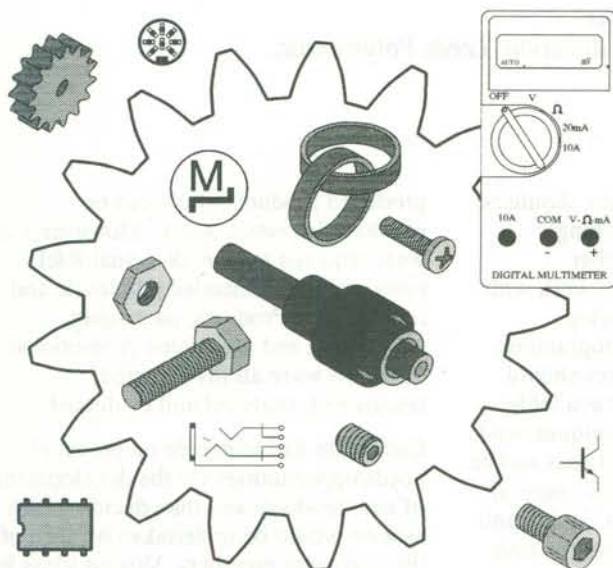
Each team had to decide on potential needs/opportunities for the development of new products and then decide which aspects would be undertaken by each of the four team members. Various ideas for new products were explored and a variety of designs developed. These were wide ranging including; containers, food based beauty products, packaging, labels/tags, jewellery, promotional brochure, bags, T-shirts, point of sale display, together with a wide range of other promotional materials e.g. beach bag/mat, kimono, sports wear, personal stereo, head scarf and video advertisements.

Each team designed and produced a common identity for all the products chosen for development. This included product name, logo, typeface, colour scheme, etc. Other factors which arose during team discussions included; animal testing, ecology, ethics, economics, means of production/manufacture, ideology, time management, teamwork, peer pressure, division of labour, economics, material usage, deadline, group dynamics, democratic decision making, project design management.

Many of the products produced by the teams surpassed all expectations. All of the six teams produced a joint display and formal presentation of their finished work. Each team member was required to explain to the whole group which aspect of the work they had undertaken, successes and problems/difficulties which occurred during the project. They spoke about team interaction together with finished product analysis and evaluation including some consumer evaluations/trials. Each student therefore evaluated

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the process as well as the products produced.

Each individual students work was assessed separately using a general criteria assessment form based on the four attainment targets for D&T Capability.

The results were amazing. Out of 24 students there were 13 grade A's. The written evaluations were also very interesting, with statements which included: 'The best project that I have ever done' ... 'Please can we have more projects like this one' ... 'I enjoyed this project more than any other' ... 'This project gave me the opportunity to work on areas that I really wanted to do' ... 'We worked very well as a team' ... 'I learned a lot of new things on this project'. This was the first time that this type of project had been undertaken. It involved a great deal of imagination, preparation, management and organisation from the two members of lecturing staff involved. Each session commenced with a demonstration of potentially useful skills, processes and techniques provided. This included a wide variety of materials

usage such as textiles, wood, clay, plastics, metal, card, dyes, paint etc. etc. Demonstrations also included Desktop publishing, (Brochures), Computer Assisted Draughting utilising a Plotter (Packaging), CAD Graphics, laser and Colour printing (logos, names, tags, labels etc.). CNC Machining (container profiles).

This module involved relevant aspects of all of the five former subjects which now feature within the new NC curriculum area of Design and Technology, (Business Studies, Art/Design, Information Technology, Home Economics and Craft, Design and Technology).

It was an ambitious project to undertake, however it was worth the effort. There were some problems which were evident as the module progressed, although these were in the main, easily overcome. Should this project be offered again next year, there are minor adjustments to be made, but overall it was very successful in achieving its aims.

The National Curriculum is beginning to evolve in schools in many different ways.

There are local and national variations in the quality of experience which children are receiving. Hopefully, new entrants to the teaching profession will be flexible, adaptable and versatile having an overview of their own and others, subject areas. Thus, providing stimulus, direction and cohesion to overcome and breakdown the traditional subject barriers. They should be able to assist in deriving and developing balanced curricula which are designed to meet the changing needs of all pupils in the 1990s.