

# CDT and TVEI: The New Partnership

In the past twenty years CDT has progressed from a single material, craft skill based course to a multi material, design based situation. The status of the subject and its place within the curriculum has also changed. CDT, if taught correctly, now forms a central part of the 11 to 18 curriculum.

This change has required teachers of CDT to look at their teaching methods and subject philosophy, perhaps more than any other area of the curriculum and to take in new and more relevant courses for their students. Often current good practice within CDT allows students to acquire skills through experiential learning and to make value judgements upon their work and design decisions. Where the technological aspect of the subject is emphasised this design based problem solving work may often be related to the real world of industry. In this way students following current CDT courses are often experiencing far more than just a skill and knowledge based course.

In the last two years the new element of TVEI has appeared, the question may be asked, is this a friend or foe? Many teachers of CDT are apprehensive and concerned when they examine the meaning of the initials. Technical, 'does this mean the end of craft skills and design', often the same is said when technology courses are introduced.

Vocational, 'the subject has more to offer than pure vocational training'. However, these comments show a lack of understanding of the aims and objectives of TVEI. In fact close examination of TVEI aims and objectives will produce many areas of common ground with those of the CDT curriculum. Providing TVEI is seen as an element supporting change and progression of the curriculum then CDT has a new partner, which will allow the subject to play an ever more important part in the curriculum of the eighties and beyond.

However, in a time of financial shortage it would be a mistake to see TVEI as providing funding to continue as before. It is necessary to examine closely the way in which TVEI funding is used to implement curriculum change within CDT. I would suggest that for a successful CDT-TVEI partnership it is necessary to consider five criteria and the way in which they will be affected by TVEI.

## Staff

The status of a CDT Department within a school often determines the way in which the subject is seen in the curriculum structure. TVEI provides many departments with a vehicle by which they can improve this position. However, this will only be achieved by a positive approach to the curriculum.

Where status is seen in terms of equipment or following the neighbouring school, without relevance to a curriculum philosophy; then ultimately the results will negate the credibility of the subject.

## Facilities

TVEI provides an opportunity for the development of a department's facilities and for the

implementation of new courses. However, too often, this is seen in pure equipment terms. If the aims behind TVEI are to be successful then it is essential that the teaching environment, in some form echoes the real world. I would encourage colleagues to examine their teaching environment in respect of the cross curricular approach required within TVEI, before rushing to buy the latest CNC lathe or similar equipment. Once the correct environment has been established then equipment can be acquired in a much more cost effective manner.

## Staff

Often the need for development within CDT is hampered by staff experience; TVEI provides a way forward by encouraging inset programmes and perhaps more importantly, requiring staff to look beyond their subject areas, both within and out side of the school. It is also important that staff see TVEI as a supportive agent to a team approach because it will no longer be possible, to be an expert in all aspects of CDT and only with this team approach can the breadth of input required be achieved.

## Motivation

Student motivation is an important aspect to the success of any course and certainly the new CDT courses, when taught from the experiential design base, offer wide opportunities for motivation. It is essential, therefore, that CDT involvement within TVEI should continue, if not enhance this good practice. In fact one of the aims of TVEI is to increase the relevance and motivation, within the curriculum for students. Obviously the introduction of project type work, serves as a motivating agent in CDT but it is important to go beyond this initial step. Students should have the opportunity of working with industry and other agencies on project work. In addition TVEI will provide the opportunity of linking with other subjects, such as Commerce, and allow students to realistically look at the problems involved in marketing a design solution.

## Industry

CDT as a subject has always had links with industry but these have mostly remained at the material acquiring level. If the type of courses promoted within TVEI are to be successful this link must expand and operate at many levels. It is important that local industry is seen as a resource in its widest possible sense.

Within the Isle of Wight's TVEI scheme the development within the Technology department of Cowes High School is seen as a resource for further work within the authorities' other schools. Therefore, much of what has been developed at Cowes is pre-TVEI, however, much of this work fully meets the aims and objectives of TVEI.

The basis of this work is based around a balanced CDT curriculum which allows students to

negotiate paths through courses relevant to their abilities and needs.

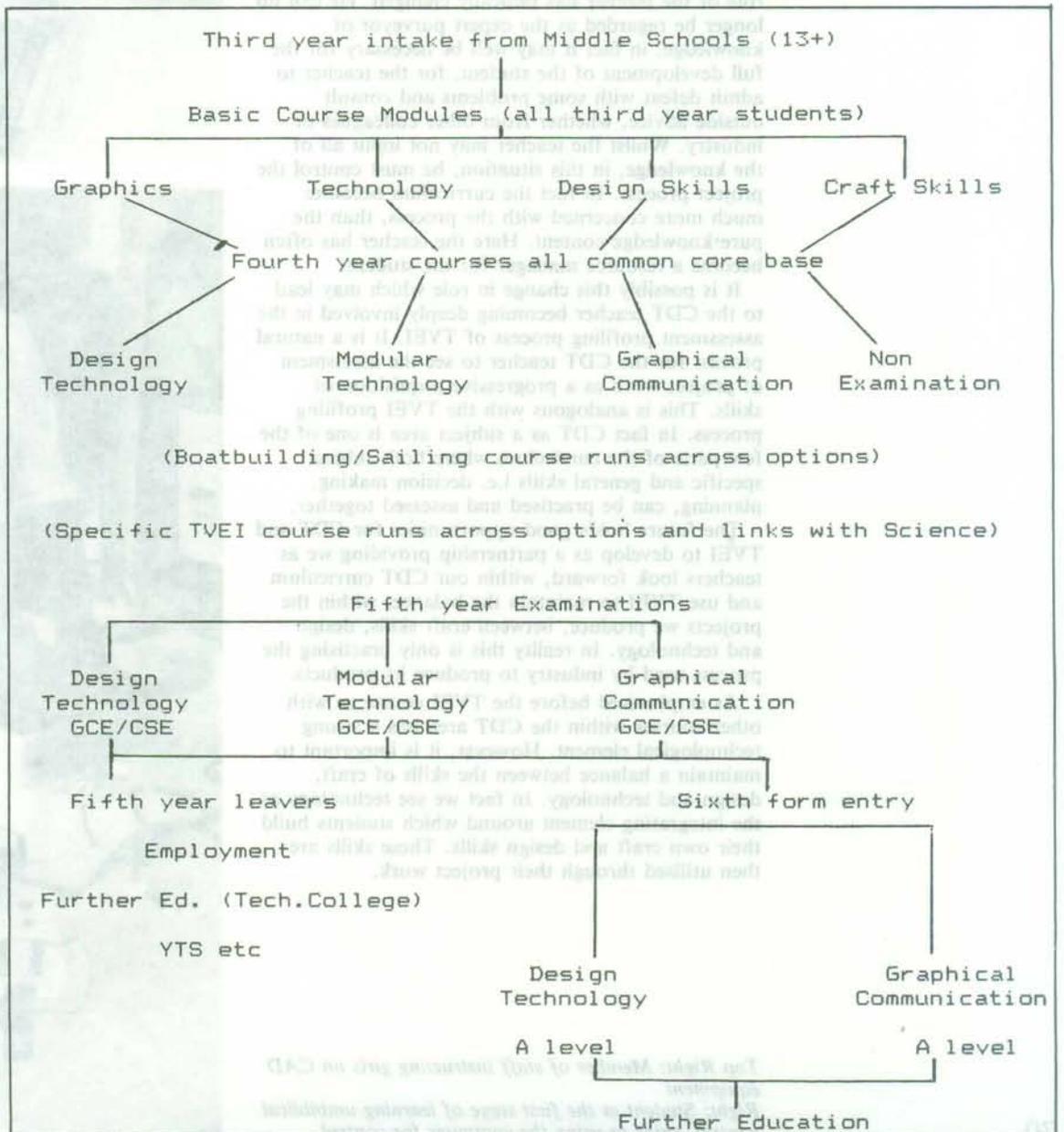
As can be seen from the course structure students are not finally placed in defined examination groups until the end of the fourth year. The specific TVEI cohort work on a combined course involving elements from all of the CDT courses and Physics from the Science link. In addition new elements such as CAD, Robotics and CAD/CAM are taught within the course.

This is made possible by examining the existing overlaps between the normal examination courses and there by creating time and curriculum space to bring in new technology, as it is available. The

course, as with the other CDT courses has strong local industry links and through project work is made relevant to the 'real' world of work.

Students are encouraged to see their project work in realistic terms, looking at costing, time, scheduling, marketing and working directly with local industry. In this way the skills acquired through the CDT course are not subject specific but transferable to the world beyond the school. As an example it is interesting to note the comments of a student, who was being interviewed as part of an educational research project, 'This is the only subject I have to think in, here I make the decisions not the teacher. My work is mine'. It is possible

Schematic of course structure.





*Above: Students programming a robot system*

that the skill of decision making may be far more important in that student's career than any of his examination certificates.

However, in this type of teaching situation the role of the teacher has radically changed. He can no longer be regarded as the expert purveyor of knowledge, in fact it may well be necessary for the full development of the student, for the teacher to admit defeat with some problems and consult outside advice, whether from other colleagues or industry. Whilst the teacher may not input all of the knowledge, in this situation, he must control the project process. In fact the curriculum becomes much more concerned with the process, than the pure-knowledge content. Here the teacher has often become a resource manager for the student.

It is possibly this change in role which may lead to the CDT teacher becoming deeply involved in the assessment profiling process of TVEI. It is a natural process for the CDT teacher to see the assessment of project work as a progressive acquisition of skills. This is analogous with the TVEI profiling process. In fact CDT as a subject area is one of the few parts of the curriculum where both subject specific and general skills i.e. decision making, planning, can be practised and assessed together.

The future holds good opportunities for CDT and TVEI to develop as a partnership providing we as teachers look forward, within our CDT curriculum and use TVEI to maintain the balance, within the projects we produce, between craft skills, design and technology. In reality this is only practising the process used by industry to produce its products.

As emphasised before the TVEI course as with other courses within the CDT area has a strong technological element. However, it is important to maintain a balance between the skills of craft, design and technology. In fact we see technology as the integrating element around which students build their own craft and design skills. These skills are then utilised through their project work.



*Top Right: Member of staff instructing girls on CAD equipment*

*Right: Student at the first stage of learning umbilical control, prior to using the computer for control*