

■ POST-16 TECHNOLOGY COURSES

There are many pressures facing design and technology education. All institutions have had to revise their organisational structures and course content around curricular needs and financial imperatives. This is most evident in post-16 education. The National Curriculum has dominated the thoughts and energies of many, if not all, teachers in schools resulting in lost links and dated understanding of the post-16 sector of design and technology.

Progression to, and within, post-16 is important. General National Vocational Qualification (GNVQ) manufacturing at present does offer opportunities for major links and valuable progression from KS 3 to KS 4 Design and Technology and beyond into a wide variety of important manufacturing industries, e.g. food, fashion and textiles, pharmaceutical, as well as electronics and engineering. This provides opportunities to large numbers of students of varying interests regardless of their abilities, culture or gender.

There is a danger that if this became more narrowly focused, e.g. towards the engineering industry, that this would adversely effect the take up and only benefit a minority of students.

The following two articles provide an insight into what GNVQs have to offer and what their implementation involves for staff and students.

GNVQs — breaking the mould?

**Paddy O'Hagan and
Jo Compton**

Consultants to NCVQ

■ Why do we Need Another Tier of Qualifications?

There is a huge range of vocational schemes: some offer work place competences, others, like DVE, are seeking to bridge the gap for a particular group of pupils into post-compulsory education. Pupils often choose a course because it appears to be a good thing — just fancied it, makes good money — in other words, relevance to the world of work.

At the same time there are many candidates for whom an academic A-level may be within their grasp intellectually, but is not suited to their aptitudes or aspirations. A-level courses are demanding, academic and elitist. What was not on offer was what the Germans and the Japanese realised was vital — a general technical education. GNVQ addresses this head on. It offers a range of technical subjects, more ease of access, a higher qualification, three levels of accreditation, and relevance to vocational needs and students' interests.

■ What is a GNVQ?

The principle is simple. GNVQ stands for General National Vocational Qualification. It lies half way between NVQs (training/workplace competence, most often gained during employment) and traditional academic routes such as A-levels. GNVQs will take over from other vocational qualifications such as BTEC Nationals. GNVQs are often described as vocational A-levels, but this is only partially true because they cover three levels.

However, it is true that a surprisingly large number of higher education institutions have already agreed to accept Advanced level GNVQs for University entry as equivalent to two A-level passes. It is anticipated that students with Foundation or Intermediate GNVQs will use these in getting jobs which will then allow them more focused training during employment, leading to NVQs.

GNVQs are specifically written to allow schools to be involved. At present they cover five of the 11 vocational sectors. Over the next three years or so the rest will come on stream. The rest of this article explains the mechanics of the qualification and why it may well be worth considering.

All GNVQs:

- set out the general skills, knowledge and understanding that underpin occupations across their sector;
- have three levels:
 - Foundation (level 1) — three mandatory units,
 - Intermediate (level 2) — four mandatory units,
 - Advanced (level 3) — eight mandatory units;
- have a range of optional and additional units that can be permuted to fit the requirements of students and deliverers;
- include mandatory core skill units in Communication, Application of Number and IT. These are not formally tested but must still be passed in order to achieve the

award. In addition, there are personal skill units such as Working with Others. All the core units should be delivered through the vocational provision and not alone;

- have internally assessed and externally verified coursework;
- have mandatory units which will be formally tested except at Foundation level;
- have units which can be separately certificated and which are not time dependent.

‘GNVQs have been designed to be delivered in full time education with limited access to the workplace. They are awarded to all who meet the standards irrespective of the time taken or the mode of learning adopted’ NCVQ

Information Note April 1993

BTEC, City & Guilds and RSA are the Awarding Bodies who are piloting GNVQs.

■ How do GNVQs Work?

Each GNVQ is a general education introduction to a sector of the world of work.

For example, **Manufacturing** covers the following:

Materials — food, textiles/fabric, constructional materials (wood, metal, plastics, ceramics), electrical/electronic, chemical/biological;

Products — food/drink, textile, durable, paper and board, electrical/electronic, chemical/biological;

Scale of production — continuous, repetitive batch, small batch, single item (e.g. prototype).

As you can see it is ‘...not sufficient for candidates to specialise in a single material or manufacturing sector, nor product type.’ It is a general qualification, so candidates are ‘required to provide work in contrasting sectors or for product types/scales of production’.

However, as the Information Note points out the ‘enormous range of potential manufacturing contexts will be limited by the need for realistic decision taking on delivery — given centres own and local resources’. In a nutshell the GNVQ is written so that ‘candidates (can) demonstrate breadth of knowledge, skill and understanding to be confident about transferring their competences across a range of manufacturing sectors’.

What is a unit? Each GNVQ is written in units. Units are *not* necessarily modules of study. The purpose of a unit is to detail what must be assessed about a particular aspect of that sector. GNVQs, unlike A-level, have no syllabus. It is up to each centre or cluster to devise programmes that will enable their students to demonstrate the skills, knowledge and performance that meets each unit standard. This brings back our traditional autonomy and the exciting possibility of developing programmes that truly meet students’ needs, school resources, and allow links with local business partnerships.

Foundation level mandatory units are:

- Investigating Working in Manufacturing;
- Contributing to Production Assembly Teams;
- Exploring Manufacturing Operations;
- and three optional units.

Intermediate level mandatory units are:

- Working with a Design Specification;
- Production Plan;
- Process Operations;
- Quality, Safety and the Environment;
- and four optional units.

Advanced level mandatory units are:

- Design Specification;
- Communicate Product Design;
- Manufacturing Systems;
- Production Cost and Schedules;
- Process Operations;
- Quality and Control;
- Work Practices;
- Environmental impact;
- and four optional units.

The three core skill units are integrated across all the units at each level.

■ How are GNVQ Assessed?

It is very important to understand that there are real differences between how GNVQ is assessed and GCSE and A-levels.

Each Unit has two or more Elements. Each Element has a sequence of performance criteria (pcs) which describe outcomes. One of the problems for schools has been that, mistakenly, they use the pcs as a syllabus. The Range describes scope and defines breadth of experience. Together the pcs and the Range give a feel for levelness, but at present standards are developing.

The final statutory part of assessing GNVQ is the Evidence Indicators. These explain the form retained evidence should take — reports, portfolios, examples of work. It is up to colleagues in schools to assess coursework against the standards. Many successful schools have used an internal moderation system to develop understanding. Of course, colleagues will also need to consider what would be a workable and manageable recording system for their institutions.

Each centre is likely to be required to have an accredited verifier. It is very important that at least one member of staff has been trained to the relevant Training and Development Lead body (TDLB) standards, 32-36. The role of the internal verifier is there to both support and maintain quality assurance. It is not possible here to go into all of this in detail. To explore this further it would be sensible to talk to the awarding bodies. If you have a delivery centre near you, it is probably a good idea to arrange a visit.

The most contentious aspect of GNVQ assessment is the external tests. They are short pencil and paper exercises written by the Awarding Bodies that comprise a compulsory part of the mandatory units. The tests are focused on the breadth of underpinning knowledge, skills and understanding, of each mandatory unit. In other words, if students are doing the work, they should have no difficulty passing. There is no external testing of optional or additional units. We shall have to wait and see how these develop, but we do not think that they are a sufficient reason not to go ahead.

■ How Could GNVQs Fit Into My School?

As is clearly demonstrated, there are explicit links between NC Design and Technology and GNVQ Manufacturing. It can be delivered by NC subject specialists within most schools' existing provision.

It is probable that KS 4 provision will allow some sort of mixture of 5% Design and Technology and vocational content that can be credited into GNVQs, post-GCSE. However, this is uncertain until Sir Ron reports! Nevertheless, progression from KS 4 into post-16 must be an attractive proposition for many schools.

GNVQs have proved to be extremely popular with pupils. Many schools are experimenting with running Foundation and Intermediate level units concurrently, to start with, and then splitting up groups into their appropriate levels. Some have integrated other courses (e.g. resits) into their programmes although many have experienced management difficulties with this. In particular, this concurrent strategy may work well with, for example, Art and Design but for Manufacturing similar A-levels, or even GCSEs, may not be available in a form which make it easy to manage. Also, some A-levels do not allow core skills to be comfortably integrated.

Key questions are listed below.

- Which GNVQ — at which level, in which sectors?
- School — can the school go it alone? Is there adequate accommodation for increased numbers? Careful consideration would need to be given to resources, including storage, library provision, IT, etc.
- Staff — what experience do staff have with vocational or pre-vocational qualifications, managing vocationally relevant project work, etc? What expertise will be required to deliver GNVQ and integrate core skills?
- Assessment — is there enough experience in recording achievement, action planning and team working? How will standards be assured?
- Timetable — can GNVQs be delivered within a normal school curriculum, in blocks of double lessons? How will the timetable need to change to deliver a fully integrated course including work experience and visits?

■ Does it have to be Manufacturing?

As Anne Noble's article makes clear there are considerable opportunities for progression into Art and Design, Leisure and Tourism and Health and Social Care. Design and Technology colleagues (especially from HE and Art) would be able to contribute to aspects of these and to other GNVQs such as Science and Engineering when they come on stream (hopefully) in 1995.

■ A Challenge to us as DATA Members

After the war there was a visionary feel to British education. It outlined a tripartite system: secondary modern and grammar schools were to be joined by a third strand — technical schools. However, when a few years later comprehensive schools were introduced, there was only a need to twin the two former as, sadly, the technical school initiative arrived stillborn.

It is peculiarly British that the 'practical' generally has a lower status than the 'academic', and why is it so difficult to agree what this is? Over the years, resistant materials work, for example, has been marked by constant debate between, to put it simplistically, the soft — that is, design, and the hard — that is, engineering and applied science. There is a general feeling that skills have been 'lost'. There is some ambivalence about what links there should be, even can be, with the 'real' world. However, change is upon us. Of the growing importance of Technology there can be no doubt. Technology has in practice, if not in statute, almost become a core subject. And yet... and yet...

Chapter 1 of the original Interim Report gives the clearest statement of the issues and the potential of the subject for pupils. The remit was purely 'educational'. Yet at the same time Technology cannot avoid dialogue with the real world. More obviously than many other subjects it links into post-compulsory provision. TVEI is based on this view.

We would like to raise two final points. It is very worrying that while over 60% of pilot centres offered Business, many offered Health and Care, Leisure and Tourism and Art and Design, very few offered Manufacturing at Intermediate level and almost none at Advanced level. Surely this is a challenge that

we cannot pass up. It would be a tragedy if the practical remains devalued and if take-up in Manufacturing and Engineering remains poor. Each contributing subject has a role in this. Given the potential for 14-19 progression perhaps at last we can start to take our rightful place as the third strand of British education.

Secondly, the present post-compulsory provision that exists in British schools today deprives students who are registered on one course of access to another. For example, should an A-level student decide to drop out of the course after one year, s/he will have gained nothing in terms of certificate or diploma to evaluate progress for that year. This scenario can be the same for students on pre-vocational courses — they will not have the right to cross-over on to A-level courses, but will have to start again at year 1. This access is at present available in other European countries and it is something that all post-16 educators will have to think hard about.

Contacts: should be made initially to BTEC, City & Guilds and RSA to see which agency might best suit your needs, rather than to NCVQ itself. All Awarding Bodies offer a range of GNVQs.

Useful Publications Include

General National Vocational Qualifications — Information Note (April 1993), NCVQ, 222 Euston Road, London NW1 2BZ.

A Year in GNVQ, Employment Department, 236 Grays Inn Road, London WC1X 8HL.

Introducing GNVQs into Schools and Colleges, TEED, Quality Assurance Division, Moorfoot, Sheffield S1 4PQ.

Useful Addresses:

BTEC, Central House, Upper Woburn Place, London WC1H 0HH. Tel: 071-413 8400.

City & Guilds, 326 City Road, London EC1V 2PT. Tel: 071 278 2468.

Royal Society of Arts, Westwood Way, Coventry CV4 8HS. Tel: 0203 470033.