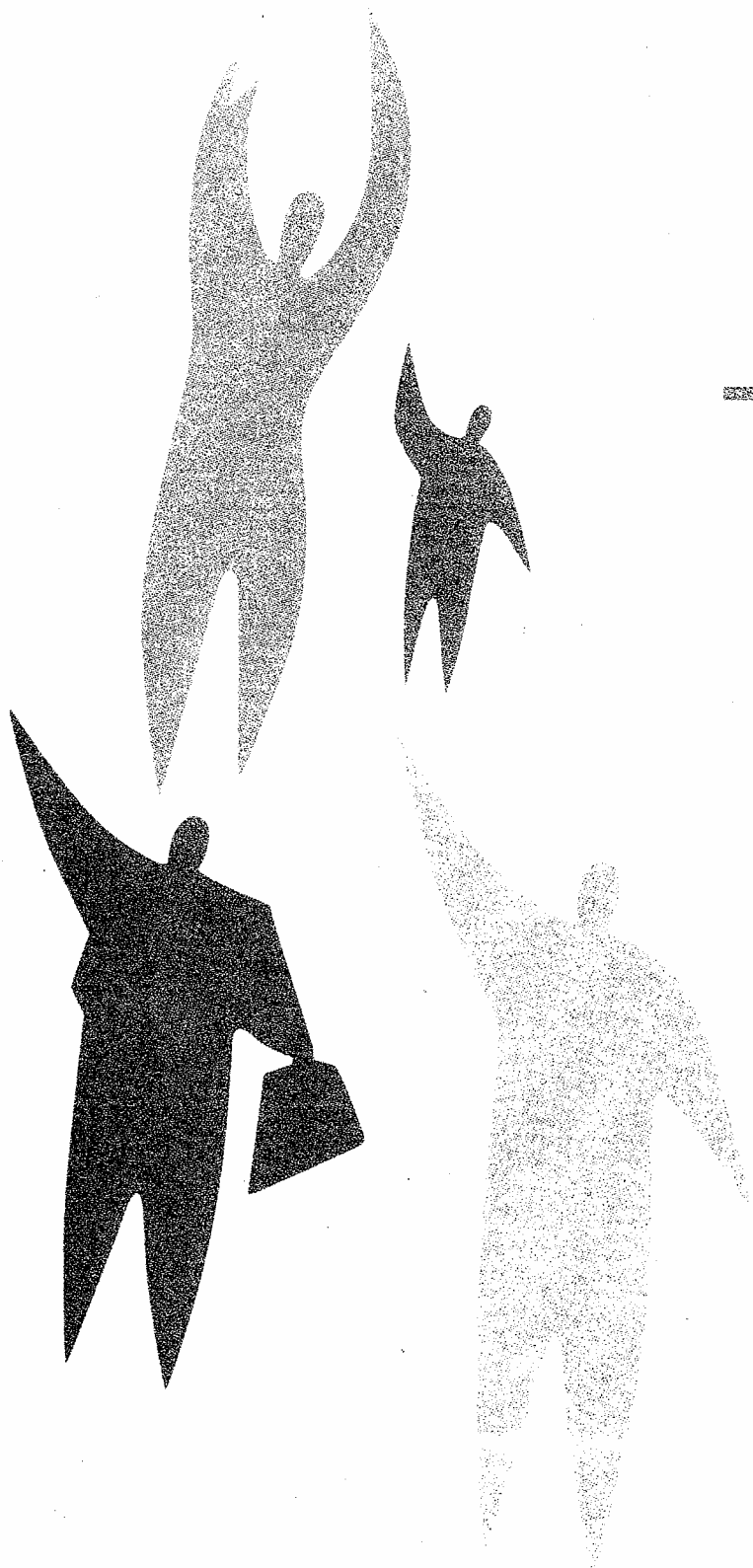




EDUCATION
TRAINING
Y O U T H



**Innovations
in training:
the potential
of modular courses**

EUROPEAN
COMMISSION

CONTENTS

Preface	1
---------	---

Innovations in Training: The Potential of Modular Courses: Conference Report

David Raffe

Chapter 1	Background	3
Chapter 2	Modules in Europe: the State of Play	5
Chapter 3	What is a Module? How are Modules Defined?	7
Chapter 4	Why Modularise?	9
Chapter 5	Does Modularisation Work?	13
Chapter 6	Implementation Issues	15
Chapter 7	Developing Transnational Modules: Adding a European Dimension	18
Chapter 8	Concluding Comments	20

Annexes (available with full version of report)

Annex 1	Innovative trends in training systems in the European Community	<i>Fernanda Reis</i>	25
Annex 2	Modules in Europe: a comparative analysis of the situation in six countries	<i>David Raffe</i>	29
Annex 3	Modules in Portugal: experiences and prospects	<i>Conceição Rocha</i>	35
Annex 4	Implications for apprenticeship courses	<i>Félix Esménio</i>	37
Annex 5	Implications for school-based courses	<i>David Parkes</i>	39
Annex 6	Experience at national level: Scotland	<i>Chris Brown</i>	43
Annex 7	The effectiveness of modular systems: the experience of Scotland	<i>Cathy Howieson</i>	51
Annex 8	Experiences at European level: results and conclusions of project work carried out under the Petra programme on the development of educational modules	<i>Knut Groeber</i>	57
Annex 9	Report of working group 1	<i>Rapporteur: Ton Farla</i>	65
Annex 10	Report of working group 2	<i>Rapporteur: Elisabeth Watters</i>	67
Annex 11	Report of working group 3	<i>Rapporteur: Cathérine Froissart</i>	71
Annex 12	Report of working group 4	<i>Rapporteur: Porfiro Silva</i>	73
Annex 13	Participants at the conference		75

ANNEX 2

Modules in Europe: a comparative analysis of the situation in six countries

**David Raffe
University of Edinburgh**

1. OVERVIEW

This paper presents some conclusions from a study of modularisation in initial vocational education and training (VET) in six European countries. It argues that:

- most countries have only limited, and recent, experience of modularisation, at least with respect to national programmes;
- courses with close links to continuing (adult) VET, and courses for disadvantaged students, have most frequently been modularised;
- concepts of modules, and the design of modular systems, vary widely across and within countries;
- most modular reforms pursue surprisingly similar sets of objectives, even if their emphases and strategies differ;
- one can distinguish reforms whose primary focus is respectively on disadvantaged students, on skills, and on the VET system;
- the design of modules and of modular systems partly reflects their objectives; but similar objectives may be pursued by very different systems;
- the experience of modular reform raises various issues concerning flexibility, quality, institutional change, the role and training of teachers, and the organisation and coherence of VET systems.

2. CONTEXT OF THE RESEARCH

The study is being conducted by research teams from six EC countries, who are participating in a PETRA Research Partnership. Work began in October 1991 and is continuing; this paper summarises the first phase of the research. In this phase the participating institutes, working in pairs, produced country studies of the experience of modularisation in initial VET, following an agreed list of questions. This paper presents a synthesis of the six studies.

3. THE COUNTRIES AND MODULAR REFORMS STUDIED

Our study covered the following modular innovations:

Germany : Within the dual system, modules have been introduced in a few innovations by large companies or training schools; most other modular innovations are in continuing training, although some of these - notably in new technologies - are available to young people in initial training as well;

Spain : One-year vocational modules at EC levels 2 and 3 are planned for students leaving compulsory secondary education and baccalaureate study respectively, as part of a national reform of

the education system to be implemented in 1994/5. A third set of modules is planned for students who experience difficulties within compulsory general education.

France : The Credit Formation Individualisé (CFI), a scheme introduced in 1989 primarily to enable unemployed unqualified young people to obtain French level 5 qualifications and stable employment, is organised on a modular basis. (Apart from the CFI there has been limited modularisation in initial VET.)

Luxembourg : Modules will be introduced in 1992 in the Certificat d'Initiation Technique et Professionnel (CITP), a new programme for young people whose social, linguistic or other disadvantages make it difficult for them to achieve EC level 2 qualifications through conventional routes.

Netherlands : The study focuses on senior-secondary VET: KMBO courses (modular short full-time courses introduced in 1979 for dropouts and other disadvantaged 16-18 year olds); MBO (long full-time) courses, recently integrated with KMBO, but whose own experience of modularisation has so far been limited; and apprenticeships, where a process of modularisation which started in the mid 1980s (in some cases, earlier) has now covered half the occupational fields, including the largest ones.

Scotland : Almost all non-advanced VET (below higher education) was modularised in 1984; the National Certificate (NC), a single national framework of modules, covers initial and continuing vocational education; the modules are studied by young people in both full-time education (including secondary school) and part-time education (including apprenticeships and training schemes).

4. WHEN AND WHERE HAVE MODULES BEEN INTRODUCED?

Our study did not cover all modular innovations in initial VET in the six countries. It focused mainly on national reform programmes. Subject to this, we may draw four conclusions about the pace and extent of modularisation:

- The experience of modularisation in initial VET, at least at a national level, has been limited. In many countries modular reforms have only recently been introduced, or are still at the planning and development stage, or consist primarily of local and experimental initiatives. Only in Scotland and the Netherlands can we draw on experience of nation-wide modular systems over several years.
- Modular reforms respond to perceived weaknesses in VET systems; they usually accompany other and wider reforms, and are intended to promote or reinforce them. Modularisation can therefore be seen as an indicator of dissatisfaction with initial VET within a country. Equally the scope of modularisation is an indicator of the prevailing diagnosis: modularisation tends to be restricted to small and specific sectors of VET in countries such as in Germany, Luxembourg, France and (initially) the Netherlands, where the basic structure of the system is not questioned; system-wide modularisation, as in Spain and Scotland, reflects a more radical diagnosis of the current problems.
- Two types of courses have most frequently been modularised: courses with close ties to continuing VET (for example, the CFI in France, which makes use of modules from programmes for adults); and courses for disadvantaged and low-status students such as the unemployed, the unqualified and students for whom conventional courses are too difficult. This may be because low-status courses have fewer vested interests to resist radical change; or it may be because disadvantaged students have most need of the flexibility provided by modules. Either way, there is a danger that modular training may be 'stigmatised' and become more difficult to introduce to other parts of the system. For this reason, the development of exemplary modular projects in high-status sectors of initial VET, notably by large companies in new-technology occupations, is of particular interest.

- Finally, modules have been introduced for full-time, school-based students, for apprentices (in both the school and the enterprise-based sides of the dual system) and for trainees in other institutional contexts such as the CFI in France or youth training schemes in Scotland. The institutional context of learning does not appear to be a major factor in determining whether or not modular reforms are introduced (although it may determine the design and perhaps the objectives of the reforms).

5. CONCEPTS OF MODULES AND DESIGN OF MODULAR SYSTEMS

There is no shared concept of module, or design of a modular system, that is common to the countries and systems studied.

While the research literature identifies no widely agreed definition of a module, it points to four key characteristics which might be used as criteria for defining a module or a modular system: modules are *short* units of study; they are *self-contained* (delivered and assessed separately); they may be *combined* flexibly to form programmes or courses; and modularisation involves a *division* (or redivision) of the curriculum. If we applied these criteria stringently to the systems studied in the six countries, we might conclude that many were not modular. However it may be more helpful to think of these characteristics, less as criteria, than as dimensions along which modules or modular systems can vary:

Short: modules in the six countries range from 20 hours to one year in their average length; most are at the lower end of this range (eg 40 hours to 2 months), although there is variation within courses and countries as well as across them.

Self-contained: modules are sometimes planned or delivered in groups or clusters, restricting the sense in which each individual module is self-contained. In some systems only part of the assessment is separate for each module, as there are additional tests or examinations at the end of the course; some systems are working towards separate assessment but have not yet achieved it.

Combination: most modular systems allow some flexibility in the way that modules are combined, at least in principle. However the principles of combination vary. In different systems a module might be designed, respectively: for use in a given course only; for possible use in several different courses; to be self-sufficient; or as an 'add-on' to other courses (which might not be modular).

Division: some systems have broken courses down into modules; others have started with modules and built them up into courses. Some modules are defined primarily in terms of the outcomes of learning; others are defined primarily in terms of the processes or activities of learning.

Modular systems also vary in respect of:

Standardisation: only in Scotland and Spain are the length of each module and the principles of its design standard across the whole system.

Responsibility for designing modules: the roles of central authorities, and of education and industrial interests, vary. In some systems the design of modules is closely linked to the specification of occupational standards and qualifications; in others it is not.

Where modules are delivered: this could be at school, in the enterprise, jointly by schools and enterprises, or flexible (with the place of delivery not specified in the module descriptor).

6. OBJECTIVES OF MODULAR REFORMS

Despite the wide variation in the concept and design of modular systems, they share many objectives in common. Many of the modular reforms that we studied pursued several, if not all, of these seven objectives:

- (i) ***Economic responsiveness:*** to increase the system's responsiveness to changing skill needs. Modules are easier to revise and update than full courses; modules defined in terms of learning outcomes provide convenient units for planning vocational curricula.
- (ii) ***Pedagogical change.*** Modules based on projects or tasks are used to offer opportunities for self-regulated, and participative learning, and to develop 'transferable skills' such as personal autonomy, responsibility, decision-making and the ability to exercise initiative. Elsewhere, modules are used to provide greater flexibility in study methods, especially to allow disadvantaged students, and those who find it difficult to study by more 'conventional' methods, to work in their own way and at their own pace.
- (iii) ***Individual training routes:*** to cater for student diversity, especially among the disadvantaged, by providing combinations of modules to suit individual needs and circumstances.
- (iv) ***Integration:*** to integrate school-based and enterprise-based learning; to bring schools closer to the world of work and make them more 'businesslike';
- (v) ***Efficiency:*** to increase the efficiency of training by reducing the high cost of conventional training, by rationalising the curriculum and reducing duplication, and by increasing success rates and reducing dropout.
- (vi) ***Co-ordination:*** to promote the coherence and flexibility of the vocational training system, or of a part of it.
- (vii) ***Catalyst:*** to act as a catalyst for wider changes in VET that accompany modularisation, and to make the system more responsive to future reforms.

Two further objectives are of interest for more negative reasons: they have not been widely pursued though modularisation in initial VET in the six countries:

- (viii) ***Credit accumulation and transfer.*** Only in France and Scotland have modules sought to raise participation and attainment specifically through pursuing the principle of credit accumulation and transfer.
- (ix) ***Linking academic and vocational tracks,*** by providing flexible pathways between them and modular programmes combining the two, has not been a major objective of the modular reforms that we studied.

The design of modular systems partly reflects their objectives, but the relation between objectives and design is a weak one. Similar objectives are often pursued by very different concepts and designs of modular systems. Our study does not provide a full explanation of these differences.

7. STRATEGIES

Different objectives are combined in different ways, with different emphases, in different programmes of modular reform. The objectives of modular reforms vary over time, across sectors or reform programmes within a country, and even across different actors involved in the same programme of modularisation. However modular reforms may be classified in terms of their principal focus:

- (i) ***Focus on disadvantaged students:*** Several reforms have had as their main emphasis the support of disadvantaged students by providing more flexible learning methods and individualised training routes. These reforms aim to help students achieve the same results (qualifications) as mainstream courses, but by different means.
- (ii) ***Focus on skills:*** Other reforms have emphasised new skill demands: they have either tried

to enhance the responsiveness of the VET systems or they have encouraged the pedagogical approaches required to develop transferable skills.

- (iii) **Focus on the VET system:** The third emphasis is on the efficiency, coherence, flexibility and coordination of the VET system itself.

These three 'foci' are not mutually exclusive; moreover, the main emphasis of modular reforms in a country may change over time. Among the six countries studied we can observe a tendency for modularisation strategies to shift over time from (i) to (ii), or from (i) or (ii) to (iii).

8. ISSUES

Our research identified several conceptual and practical issues, including:

The concepts of module and modularisation: do we have sufficient agreement on these concepts for them to be useful tools for the policy-maker or researcher? Can one distinguish the effects of 'modularisation' from the effects of other reforms that typically accompany it?

Flexibility: Several systems have experienced difficulties in providing flexible training programmes for individual students. How can these difficulties be overcome? How desirable is flexibility in initial (rather than continuing) VET? What are the implications of flexibility for guidance?

Quality: modular training typically involves different methods of study and of assessment. How can it retain public confidence, and avoid becoming stigmatised as an 'easy' or 'cheap' option? What additional quality assurance procedures are required? Should separate end-tests and examinations be retained? Do modular curricula tend to be narrower and more task-oriented than traditional curricula? If so, how can this be avoided?

Organisations: what organisational changes are needed in schools and other centres offering modules? How can modular systems establish and maintain links between schools and enterprises?

Teachers and trainers: in all the systems studied modularisation has resulted in major changes in the roles of teachers and trainers. What in-service training, and other measures, are needed to support these changes? How can teachers' support for modular reforms be gained?

VET systems: where should responsibilities for modular reforms lie? How closely should the design of modular programmes be linked to the specification of occupational standards and qualifications? What other changes are needed if modular systems are to be responsive to changing skill needs? Can modules be used to link initial VET with continuing VET? Should modules be developed separately for different types of students and for different educational or occupational sectors, or can modules and modular systems be 'versatile' and cover all parts of a VET system?



OFFICE FOR OFFICIAL PUBLICATIONS
OF THE EUROPEAN COMMUNITIES

L-2985 Luxembourg

ISBN 92-826-7202-6

