REPORT
FROM THE
INSPECTORATE

Curriculum Area
Survey Report

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Construction

THE
FURTHER
EDUCATION
FUNDING
COUNCIL

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The Further Education Funding Council has a legal duty to make sure further education in England is properly assessed. The FEFC's inspectorate inspects and reports on each college of further education every four years. It also assesses and reports nationally on the curriculum, disseminates good practice and gives advice to the FEFC's quality assessment committee.

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SUMMARY

Further education colleges provide much of the training for the construction industry. The major companies, which employ less than 4 per cent of the workforce, undertake some in-house training, mainly to meet their own requirements. Most courses on offer in colleges meet the industry's current needs. Nationally, there is concern over a growing skills shortage at all levels in the industry. There are few modern apprenticeships in construction. Colleges are finding it difficult to plan strategically for an industry affected by continuous recession. Long-established partnerships with employers, the Construction Industry Training Board (CITB), JT Limited (JTL) and other specialist training bodies have weakened. Links with the CITB are stronger in the north of the country, where there is less subcontracting of construction work, than in the south. Construction has an unattractive public image and college departments work hard to overcome school-leavers' lack of interest in the subject area. The construction curriculum centre initiative is helping to dispel misconceptions about a career in the industry. Colleges have introduced flexible arrangements which allow students to enrol throughout the year. Many students enrolling on construction courses are low-achievers. Construction courses are failing to attract students from backgrounds where there has been little or no tradition of involvement in post-school education. Good support is provided for students with specific learning difficulties and/or disabilities.

Between 1989 and 1993, the number of students studying construction declined by 39 per cent. The number of part-time students fell by over 48 per cent, while the number of full-time students increased by 9 per cent. Between 1993 and 1996, the number of students has increased by about 8 per cent. There has been a noticeable shift from technician to craft training. Some 60 per cent of construction students are aged 19 and over, and almost 95 per cent are male. The two largest areas of

work in construction are construction crafts and mechanical services which represent 42 per cent and 22 per cent of the programme area, respectively.

The quality of teaching and learning is good. Students generally prefer practical work to theory and this is reflected by the higher standard achieved in workshops. Students are sufficiently challenged, are hard-working and display skills and understanding appropriate to their level of study. There has been a steady decline in the number of taught hours on courses and a heavier reliance on students working on their own, using resources designed for the purpose.

Most students, particularly adults, enjoy their course, display a strong commitment to their studies, and take pride in their work. Full-time students are keen to undertake work experience and educational visits, but opportunities for these are few. The continued recession in the industry has prevented many students from gaining the essential site experience necessary to extend the skills acquired in college. Many students do not have the opportunity to practise the levels of skill required for a full national vocational qualification (NVQ) award before completing their programme of training. Students often learn from each other in a constructive and supportive manner. Practical work is generally carried out competently and safely. Technician students develop good information technology skills. Portfolios of work compiled by students on general national vocational qualification (GNVQ) courses are often well presented. The achievements of students on GNVQ external assessments have improved considerably. Not all students take advantage of the support available to develop their key skills.

Poor timekeeping and high absenteeism is a feature of some courses. In 1995, 82 per cent of construction students completed their studies. This compares favourably with the average completion rate of approximately 70 per cent for vocational courses in the further education sector. However, pass rates for two-year construction courses

have declined significantly in the last three years. Data on students' achievements are often incomplete. Information on students' destinations is generally poor; the most detailed information is held informally by course teams.

Most staff are well qualified for the courses they teach, and have appropriate vocational and assessor qualifications. Many teachers possess several qualifications, including degrees in construction, and membership of professional bodies. Most have relevant industrial knowledge, but their recent experience of industry varies. Few teachers are seconded to industry. Technician staff provide good support for learning.

Workshops and laboratories are satisfactorily equipped. Much of the equipment is of industry standard. Some recent capital investment has helped many colleges to upgrade old machinery. The quality of accommodation is varied although in most colleges it is suitable for the courses offered. A few departments have excellent accommodation. Many construction departments have undertaken substantial refurbishment and adaptation of accommodation by themselves. The requirement for full-size work activity in order to develop and assess competence levels for NVQs has placed increased demands on the limited space available.

Many departments estimate their income using the cost-weighting factors of the Further Education Funding Council (FEFC) for allocation of budgets. Few departments analyse actual operating costs in detail. However, most colleges in the survey claim that present funding allocations are insufficient to meet the resource needs of competence-based provision. To reduce costs, some colleges are employing more flexible methods of learning, increasing the use of instructors, and accelerating the learning of the more able students. The proportion of total income generated from sources other than the FEFC varies widely between colleges.

CONTENTS

INTRODUCTION

1 Between September 1993 and August 1996, inspectors carried out 105 specialist inspections of construction in further education colleges as part of the quadrennial cycle of college inspections. The profile of grades awarded during these inspections is shown in annex A. During 1995-96, 46 colleges (annex G) were surveyed. Each completed a questionnaire relating to construction resources and students' achievements. Inspectors visited 44 of these colleges to complete a more detailed questionnaire on the key areas forming this report. The numerical and statistical data in the report are based primarily on information supplied by colleges in the survey, together with information from the Further Education Funding Council (FEFC) database. Inspectors also met representatives from organisations involved in, or with interests in, training and education in construction (annex F).

CONSTRUCTION INDUSTRY

2 The construction industry includes building, civil engineering and specialist contracting. Its contribution to the gross national product has fallen from 15 per cent in 1979 to a present-day figure of 8 per cent. During the recession, most United Kingdom construction companies have reduced in size and earnings relative to their international competitors. Nevertheless, the industry continues to be a major element of the national economy. In 1994, it had a turnover of £69.5 billion, based on the Department of the Environment's output figures[1]. This was equivalent to one third of all manufacturing output. In the same year, contractors won nearly £4 billion worth of overseas contracts. There are 1.627 million[2] people employed in the industry and so it is a major source of employment and is often quoted as a barometer of change in the economic activity of the United Kingdom. Construction output fell slightly in 1995, and the figures for 1996 are not encouraging, although an upturn is predicted for 1997.

3 During the last decade, there were significant developments in the use of technology in the industry. More buildings are designed to be simpler to construct and there is greater use of prefabrication. High-prestige projects, and the repair and maintenance of existing heritage buildings, continue to require highly skilled workers if projects are to be completed effectively. Construction lacks long-term, consistent planning strategies, standards of quality are variable, and the training of new and existing workers is limited. From 1989 to 1994, the number of craft operatives fell by 38 per cent from 583,000 to 361,000[3] and the number of new first-year trainees dropped by over 40 per cent, from about 35,000 to 20,000. The industry relies heavily on middle-aged craftspeople and their average age is rising. Even a small upturn in the industry's activity will lead to a major skills shortage. The industry is fragmented and often adversarial in its approach to working relationships. There is no consensus for developing a co-ordinated training strategy.

4 There is a wide range and diversity of jobs in construction. There are 15 main crafts; carpentry and joinery, plumbing, electrical work, painting and bricklaying being the major trades. Some 96 per cent of firms employ less than 10 people; 60 per cent of the total craft workforce are self-employed. The professional staff include architects, surveyors, civil engineers, buyers and construction managers who, in turn, are supported by various administrative, legal and clerical staff. Large numbers of suppliers and manufacturers deliver components and materials, the specifications of which are constantly being improved.

5 Major clients of the construction industry state that there is a shortfall in craft skills, management is poor and too many unskilled operatives are gaining employment. Few construction workers are taking national vocational qualifications (NVQs). As a consequence it is unlikely that the construction industry will contribute its share towards achieving one of the national targets for education and training, that 60 per cent of adults are qualified to NVQ level 3 by the year 2000.

Construction companies are providing apprenticeships for only 3 per cent of the workforce[4]. In July 1996, there were only 1,368 modern apprenticeships in the construction industry. This is insufficient to address the 15 per cent increase of skilled construction workers which the Department for Education and Employment (DfEE) predicted would be required between 1993 and 2001[5]. However, even in a period of stagnation, colleges in their strategic plans are predicting an average increase of 13 per cent in the number of students on construction courses over the three years from 1996-97 to 1998-99. Colleges have a poor record in achieving their predicted increases in student numbers on construction courses. Between 1993 and 1996, colleges predicted that the numbers of students would increase by about 20 per cent, whereas only 8 per cent growth was achieved (annex D).

6 Between 1989 and 1993, the number of students studying construction declined by 39 per cent. The number of those released by employers to study part time declined by about 48 per cent. Full-time students have increased by 9 per cent, and there was a noticeable shift from technician to craft training, particularly for part-time students (annexes B and C). A total of 60 per cent of construction students are aged 19 or over, and just under 95 per cent of them are male. The two largest subprogramme areas in construction are construction crafts, which claims 42 per cent of the students, and mechanical services, which claims 22 per cent. Both have declined in line with the programme area as a whole. In 1995-96 construction students represented 3 per cent of the further education sector (7 per cent in 1989). In 1995-96, there were 116,000 students of whom 25 per cent studied full time. A table showing the numbers of construction students by level of course and subprogramme area for 1995-96 is shown in annex E.

QUALIFICATIONS

7 The introduction of NVQs and general national vocational qualifications (GNVQs) over the last five years has led to major curriculum development and changes in most construction subjects. City and Guilds of London Institute (C&G) and regional examining bodies have progressively withdrawn their traditional end-of-course examination papers and assignments in construction craft studies and replaced them with unit-based NVQ qualifications. In technician studies over 75 per cent of students are on GNVQ courses. Some within industry and the further education sector believe that the intermediate GNVQ does not adequately prepare students for employment and that there should be sufficient suitable pathways for technicians before Business and Technology Education Council (BTEC) courses are phased out. The extent of this concern is indicated by the number of colleges who have not taken up GNVQs. About a quarter of colleges have retained the previous BTEC national programme, believing that students would be precluded from following a number of specialist pathways if it were not available.

8 Where colleges have opted fully for GNVQs the move has generally been well managed. However, NVQs and GNVQs developed through pilot schemes have rarely been fully tested before the schemes are finalised. Frequently, the development work has not been sequential. For example, the GNVQ foundation programme was piloted after the intermediate and advanced levels and in many construction trades the NVQ level 1 units were developed after the level 2 and 3 units. In the short life of NVQs, three editions of the construction crafts schemes of the Construction Industry Training Board (CITB) have been provided to colleges, colour coded blue, green and currently brown. The frequent changes have resulted in groups of students trying to achieve different objectives at different stages, with their individual action plans and learning agreements in a continuous state of flux. Most departments

offer NVQs from level 1 to level 3 and a few to level 4. Most of those who offer GNVQs in construction and the built environment do so usually at foundation, intermediate and advanced levels. The commitment to NVQs in the colleges surveyed is outlined in table 1.

9 Many colleges with construction provision have recognised, and stated through the British Association of Construction Heads, that there is a need to raise awareness in industry and within the community of the high standards required in certain construction work. The association believes that this is particularly relevant for repair and maintenance of all types of buildings. This sector of work is a substantial part of the industry and requires skills to master craftsman level. They identify that there will be a problem replacing this type of highly skilled person, who often has a craft background such as bricklaying, together with additional skills such as plastering, and an in-depth knowledge of construction. The focus of many of the NVQs is not appropriate to meet these challenges because NVQ criteria are based mainly on the construction of new commercial buildings and domestic dwellings.

10 There are 13 awarding bodies involved in construction qualifications. Colleges are dealing with many schemes which involve annual or biannual expenditure on centre accreditation fees. A corresponding army of specialist subject verifiers undertakes visits, sometimes two or three times each year, to check that standards are met. These visits are frequently time-consuming and often have inconsistent outcomes. The established portfolio of courses offered in colleges has been modified to meet the changing scene. Many employers, students and even some teaching staff find the new terminology and assessment criteria difficult to understand.

Table 1. Range of NVQs offered in the colleges surveyed

Craft area specialism	*Colleges offering provision %*	*Craft area specialism*	*Colleges offering provision %*
Bricklaying	90	Painting and decorating	66
Carpentry and joinery	93	Plastering	28
Electrical installation	52	Plumbing	86
Furniture trades	21	Wall and floor tiling	17
General operatives	28	Others*	24
Heating and ventilating	34		

** includes masonry; plant mechanics; roof slating and tiling; shopfitting and woodmachining; mastic asphalt and gas fitting*

11 Potential routes of progression for construction students are obscured by a lack of coherence between construction NVQs and GNVQs and their non-alignment with established industry employment structures. A uniform view among employers of where NVQs relate to an 'advanced craftsperson' has yet to emerge. Often there is neither parity nor clear pathways between various units on GNVQ and NVQ programmes of similar disciplines. There are difficulties of integrating craft and technician studies as the two areas were developed from different employment backgrounds. However, it is possible to deliver a few, selective units from GNVQs and NVQs to combined classes from both types of course. Some employers believe that for new craft trainees the current demonstration of competence required for NVQs is insufficient and that comprehensive testing of their ability to practise skills within a given time, and to a certain standard, should be part of the assessment process. It is difficult to compare NVQs with earlier

qualifications. Inspectors have concluded that NVQ students' skill levels are much the same although the range of individual skills is narrower. NVQs do not demand the same levels of knowledge and understanding as was previously the case, and this can hinder students' progression to higher studies.

12 Students wishing to progress from craft to supervisory roles are required to switch between different modes of study and different modes of assessment. Many students find this challenge difficult to cope with and the majority do not progress beyond NVQ level 2. The GNVQs in construction and the built environment, particularly at advanced level, are designed for full-time students seeking to become technicians or wishing to progress to higher education. They do not provide a suitable alternative framework for potential craftspeople in preparing them for employment. GNVQs also fail to provide adequately for the learning needs of students wishing to attend by day-release from employment, or in the evening, owing to the volume of work that has to be completed.

13 The industry is seeking to raise performance standards and awareness of health and safety issues through a construction skills certificate scheme administered for the industry by the CITB. The scheme was launched last year and aims to issue individual registration cards to competent craftspeople as proof to employers that they have the necessary skills. Registration on the scheme at NVQ level 2 or 3 is through present or past employer recommendation or by achieving an NVQ award. For people with no NVQs there is a limited period within which they can register with the CITB. So far the take-up has been limited.

> One college has registered all of its 150 craft students with the construction skills certificate scheme, to set an example of good practice and to help prepare them for future employment.

14 The opportunity for full-time and day-release students to study together is often no longer available owing to declining numbers on technician programmes and reduced choices of course. Generally, students are provided with few options as to which qualification to study. They are rarely able or willing to travel elsewhere to study on a preferred course although, in London, a recent closure of provision at one college was promptly covered by the offer of similar courses at another.

15 With no clear strategy to cover the interface between the higher national diploma and other technician courses, colleges are currently left in doubt about which route to take in their planning. A few specialist studies exist in site management practice leading to the award of an NVQ level 3 or 4, and an NVQ level 5 award in construction project management has been launched recently. Progression from NVQ studies to full membership of professional bodies is restricted as most of these bodies still require at least a higher national certificate/higher national diploma or a degree. The Chartered Institute of Building's NVQ level 4 in site management has only recently qualified the holder for entry to associate membership. Courses such as higher national certificates, unlike NVQs, are not competence based. There are limited opportunities for students to 'pick and mix' elements from other training courses or degrees to fit the NVQ requirements. This process of mixing qualification units is not always effective. Often, difficulty arises from the mismatch between the knowledge content demanded for the qualification and the demonstration of competence required by industry and the NVQ. The intellectual and technical gap between NVQ levels 3 and 4, which centres on the underpinning knowledge of construction technology and management, and the key skills of numeracy and literacy, is a problem for some students and institutions. It is widely accepted that assessment of the knowledge content is a complex area that needs further development to provide consistency and credibility in industry. Uncertainty associated with the new qualifications is

widespread in industry and the situation is exacerbated because the professional institutes are increasingly developing closer links with the higher education sector.

16 By July 1996 the CITB had recorded 1,368 starts for modern apprenticeship trainees in the construction industry in England. However, the involvement of colleges is variable and generally depends on whether a college has links with the training and enterprise councils (TECs) which piloted the scheme. TECs generally prefer using private training providers. Some colleges have three years' experience with training credits and those operating their own managing agencies have a more successful record of participating in such programmes. Most colleges are active partners with local employers and TECs in operating accredited schemes.

17 There are few formal entry qualifications for craft and technician courses. Students are interviewed to assess their abilities to cope with the demands of the programme and to discuss the benefits of the qualification to their careers. For NVQ level 3 craft courses, students should have achieved NVQ level 2 in the relevant subject. For GNVQ intermediate courses, most students have some general certificate of secondary education (GCSE) qualifications on entry. For GNVQ advanced levels, colleges require at least four appropriate GCSEs at a minimum of grade C. Students who enter programmes with good GCSE qualifications generally show better pass rates. Colleges will allow entry, exceptionally, especially for mature students on NVQ and GNVQ courses, following a successful interview with course teachers. There are few examples of colleges formally accrediting prior learning. Students' progress in such circumstances is carefully monitored.

18 The unit structure of NVQs and GNVQs has provided greater opportunity for institutions to develop unit-based programmes and to introduce flexible arrangements for enrolment and attendance, with students able to study topics as they require them. However, the

national targets set by central government and the FEFC's funding methodology relate to obtaining full qualifications, and colleges are disadvantaged financially if students do not achieve a full award.

19 The external tests set by the awarding bodies as a component of the final GNVQ award have been accepted as a means of achieving a national minimum standard. Early GNVQ external tests were flawed. Some had poor multi-choice questions which were often technically incorrect and ambiguous. This situation not only confused students and staff and reduced the effectiveness of the tests, but also undermined confidence in the qualification. Shortcomings have been addressed by the three awarding bodies and the current pattern of three series of tests each year is much improved. Some colleges enter their students for the tests prematurely, in order to give them experience of taking papers and this distorts the national statistics on students' achievements. Examiners' reports, which have become more comprehensive, are widely available from the awarding bodies and these provide helpful feedback to the centres.

MANAGEMENT

20 Of the colleges surveyed, 75 per cent have successfully recruited senior executives from the construction industry to their governing bodies. Most are from the contracting sector. Those colleges with more than one construction representative have generally recruited additional professional partners from private practice. Close links have often been established between the construction team and governors with an industrial background, leading to an improved reciprocal understanding of curriculum and management issues. Governors often serve on advisory panels within the curriculum area and on college subcommittees with special responsibility for the estate and for health and safety. Employers who are governors often recruit students from the full-time programmes or provide opportunities for work experience.

They also sponsor awards at prize days and support other college events.

21 Larger colleges often have consultative or advisory groups each concentrating on a particular area of the industry. Group members are drawn from companies and associations in the area and many are actively involved in the termly meetings of the groups. The most helpful members are those employers with trainees attending the college and those who have responsibility for recruitment, or represent trade associations.

22 The significant decline in student numbers has forced colleges to review their departmental structures. Generally, construction disciplines in the larger colleges have been merged and various specialisms in smaller colleges have been combined. Consequently, there are fewer specialist construction managers. Many now report to a member of the senior management team. Many are also required to teach and are, therefore, less able to undertake staff and curriculum development activities. A significant number of staff have taken advantage of early retirement packages over the last three years and college contact points are now more difficult to identify. Faculty offices are the main points of contact for most construction matters and enquiries are then channelled to the appropriate member of staff. This is a process that representatives of industry and members of the public often find irritating and slow.

23 In most departments there are regular meetings of course teams and minutes are sent to the academic board or to a similar body. Strategic planning generally derives from consultation with staff who increasingly have ownership of the commitments made. Strategic planning is difficult in a climate of economic recession and when there are uncertainties about the future, including inconsistent messages from industry. Colleges are developing strategies to help meet the aspirations of the local community through full-time provision while simultaneously consulting with a shrinking industrial base where more than half the

labour force is self-employed. There have been no reported total closures of construction provision in any college, but for 1996-97, out of 27 areas of work from which colleges plan to withdraw, 10 are in construction.

24 Construction staff from different colleges regularly meet to debate and review curriculum and management matters. There are several professional groups but the main forum for this activity is the British Association of Construction Heads, formed in 1983. It is a voluntary grouping of senior managers responsible for the construction curriculum in all types of institution. An annual national conference is held at venues around the country. The programme addresses current national issues and attracts national figures as key speakers. The conference papers form the basis of a widely-circulated annual report. A newsletter, *Interface*, is published regularly to inform members of current trends and activity. The association provides a national response to key consultation papers whenever possible and provides representatives to major committees and review groups. Regional meetings with representatives from each college are generally held termly although attendance at these varies considerably. Several subject groups meet at a local or regional level to discuss curricular issues. In London, a large group responsible for the delivery of electrical installation programmes meets termly.

25 The average size of construction classes is 10.5, rising to an average of 15 for practical sessions. Numbers are lower for some practical sessions on craft courses where there are high safety considerations. Consequently, numbers in the theoretical sessions which are linked to these are also low. For example, there are average class sizes of eight in wood machining and of 12 in electrical installation.

26 Most construction departments have not come to terms with the financial penalty involved where students fail to complete their courses

and few set targets for satisfactory completion within target times, preferring to allow students to progress at their own pace or to undertake to study units they wish. Local TECs and managing agents such as CITB have their own targets to meet and these are passed on to the college providers through various incentive schemes. Departments which have addressed the issue are generally working to guideline targets of 85 per cent for retention and between 65 and 80 per cent for successful achievement of qualifications within the target time. Some colleges have established regular and formal tutorials with students to review their progress and to judge whether they will achieve their targets within the expected period of time.

27 Many NVQ craft programmes are modular and the subject matter does not necessarily follow a set order. This has allowed some departments with declining numbers to combine different groups of students and to reorganise their teaching. Flexible points of entry to courses are offered and 'roll-on, roll-off' models of delivery mean that staff have to adjust to the different stages of development which students have reached at any one time. Workshops are increasingly becoming areas where students work on different tasks and the teacher acts as the supervisor of learning. On BTEC national courses, specialist groups sometimes combine for common theory studies.

28 External verifiers appointed by the awarding bodies exercise a positive influence on the sector, providing guidance and standardisation across several centres. Many of their reports are seen first by college principals who often require prompt responses from the curriculum area to deal with any problems identified. Verifiers' reports are usually widely distributed within colleges and they form an integral part of quality assurance in most colleges. Indirectly, they help in the dissemination of good practice which can influence course teams' methods of assessment. Commentary on resources has proved helpful.

29 Most departments are required to forecast activity for the coming year as part of the college's strategic planning and its funding application to the FEFC. Budget allocations are generally made by the senior management team based on the forecast of student numbers and these are finely tuned at a later date to take account of actual enrolments. Some colleges allocate funds based on the income generated by the programme area. Construction courses regularly require new materials and up-to-date hand and power tools to undertake full-size industry standard projects. The costs required for this are recognised by using a 2.0 weighting factor (from 1997-98) for funding NVQs in construction. The weighting includes an element for capital replacement. Capital investment funds are generally distributed on the basis of the bids made by departments. Many sector colleges contend that the weighting factor for construction fails to represent true capital and expenditure costs, but they have no figures to support this view.

30 To increase their income, many colleges have developed full-cost construction courses, particularly training courses designed to equip employees in the industry to respond effectively to new regulations such as those contained in the Gas Approved Code of Practice and the Institute of Electrical Engineers' handbook. Sometimes, those in the colleges responsible for delivery of the full-cost courses are not involved in the detail of contracts. Many providers, therefore, take inadequate account of issues such as the CITB's offer of directed study and the incentive payment for satisfactory completion of a course within target time. Income from full-cost provision is variously distributed. Some colleges prefer to retain excess income in a central fund; others apportion as much as 70 per cent to the curriculum area responsible.

In 1995-96, one construction department earned an additional £400,000 through full-cost work. It invested heavily in expanding 'real work environments' to improve training facilities for its students and the industry.

31 Few construction departments have attempted to analyse operating costs in detail. Most are provided with monthly data on staffing costs and expenditure on materials against budget and receive clear indications of any overspending. If student enrolments fail to match projected numbers, budgets are normally reduced to take account of this. Some colleges are experimenting with internal charges for the space allocated to a department. The imposition of such charges has often led to more efficient use of accommodation and the release of unwanted areas to other departments. Other efficiency gains have been achieved by introducing more flexible methods of learning, the increasing use of instructors and accelerated studies for more able students which enable them to gain their awards within a reduced period of time.

MARKETING INITIATIVES

32 Colleges work hard to market and promote construction provision, though the effectiveness of these activities is sometimes reduced when colleges centralise their marketing services. There is little labour market information available to colleges on the training needs of the construction industry, particularly the needs of small to medium size firms which provide the bulk of employment. The curriculum area advisory committees are often the most effective means of obtaining this information. Most construction teams update their information on courses annually. Prospectuses and course leaflets provide clear and concise descriptions of course content, entry requirements, progression routes and assessment methods, and identify the course leader whom

prospective students may contact for further information. Some promotional material is of high quality. For example, it includes pen portraits of construction students and photographs of students undertaking work in construction which help to raise public awareness of the variety of opportunities which exist in construction. Few departments can identify a marketing budget, and there has been little analysis of the outcomes of promotional activities.

33 Procedures to ensure equality of opportunity for students are regularly reviewed and their effectiveness monitored. Many colleges have strategies for attracting more female students and students from minority ethnic groups to their technology courses. For example, some colleges have established strong links with local women-only training organisations which have led to the provision of successful women-only craft courses in carpentry and joinery, painting and decorating. Elderly people often contract self-employed women as painters and decorators in preference to male contractors. Some college departments have an active policy of community liaison which includes sessions for unemployed people held in community premises. At one college, the construction department monitors the effect of publicity which is specifically designed to attract people from backgrounds where there has been little or no tradition of involvement in post-school education.

A construction department has developed full-time craft courses for both school-leavers and mature students unable to obtain employment. Unemployed students can attend practical sessions and use learning packages which enable them to study on their own at home or in the learning centres adjacent to the practical workshop areas. Mature students expressed particular appreciation of the efforts staff had made to encourage and support them through their studies.

A department arranged for students who had acquired brickwork skills at the college to be recruited as apprentices by a newly-established local building company. As part of the contract, the apprentices were given the task of constructing a bungalow. Finance for this arrangement was provided under a local regeneration project.

34 There has been a noticeable reduction in the number of preparatory courses that enable students with low levels of achievement to progress to award-bearing courses in construction. Recently, some colleges have established special partnerships with local schools, underwriting the cost of provision designed to attract and support low achievers.

35 Colleges have supported the CITB in establishing a network of successful college-based construction curriculum centres across the country. The centres are jointly financed by the CITB, local TECs and the colleges and are intended to:

- promote the image of the industry in schools and to relate aspects of the national curriculum to construction
- encourage primary school teachers to use construction as a context for learning
- improve the progression of school-leavers to the construction industry.

Many curriculum projects are organised through these centres and staff in the centres are involved in education and business partnerships.

In 1994-95, over 1,400 children from 75 local schools used a college's construction curriculum centre which was established with funds of £127,000 jointly provided by the CITB, the local TEC and the college.

The college also collaborates with two local universities, through a Regional Centre for the Built Environment, to offer a ladder of opportunity for school-leavers and other potential students. The advanced GNVQ in construction and the built environment is seen as a key element in this development. Some school pupils achieve NVQ level 1 units while still attending school.

One college arranged a special practical day for 60 pupils from a local primary school who were undertaking a national curriculum project entitled 'house and home'. At the end of the visit each pupil received a college certificate and a present to remind them of the occasion.

RESPONSIVENESS TO STUDENTS, EMPLOYERS AND INDUSTRY

36 Further education colleges are the main providers of high-quality training and assessment services to the construction industry. However, the industry is showing increasing concern that colleges might not meet the future educational and training needs of the local employers for a variety of reasons:

- reduced demand for training has led to the closure of college courses
- few school-leavers are showing interest in construction as a career and this is limiting the quality of students recruited by construction departments

- full-time students lack adequate work experience
- the work-based elements of NVQs are limited
- industry-based NVQ training and assessment are difficult for colleges to manage and resource
- many of the trainees entering employment do not have sufficiently developed key skills and job knowledge.

37 Industry has reduced training owing to the fall in demand for its services. Some students sponsored by companies have had their support withdrawn during the training agreement. However, college staff continue to support and guide students through their full-time programmes in the hope that job prospects will improve. The lack of opportunities for work experience presents difficulties, but colleges have been innovative in creating simulated work environments in which students can develop an understanding of the real environments in which they might be expected to operate. Some students have found work experience in small companies not involved in training with the CITB or through involvement with enterprises run by family or friends.

38 Departments have responded to the needs of adults over the past three years, particularly in updating existing skills. Adults often join classes designed for youth training. They gain extensive craft practice in the workshops and work on their own in the college learning centres, or at home, using high-quality learning packages to improve their knowledge and understanding. Problems relating to provision for adults include:

- tensions within the industry over the training of adults as firms prefer to employ 16 year olds
- the lack of employment opportunities for successful students
- the limits on the number of class hours an unemployed person can undertake without losing their social security benefit.

All these create obstacles to learning and achievement. Some adult training programmes are in partnership initiatives such as City Challenge and other urban regeneration schemes that benefit the community and the participant. These initiatives increase access to education and training, involve employers in new ways of working and contribute to local economic regeneration. However, the schemes are short term and no model of good practice has been established.

39 People with learning difficulties and/or disabilities often benefit from construction-related activity. Basic tasks assist them in developing their co-ordination skills and they often blossom in workshop environments, particularly when working alongside adults and craft trainees, with additional help from specialist staff.

40 Full-cost recovery training is available on demand in most colleges for over 46 weeks a year, although there is little call for such provision. Some departments deliver franchised job knowledge and key skills for private training organisations but quality assurance arrangements for the overall provision are often inadequate. Many colleges have created open learning centres to attract more students by making it easier for them to study in ways which suit them. One large construction department estimated that 30 per cent of its FEFC-funded provision was accessible to those wishing to study through open learning. There is little demand for distance learning in construction although some programmes for builders' merchants attract large numbers of students.

41 Most construction departments have links with colleges in European countries and increasingly with others further afield. Some projects involve students undertaking work experience on an employer's premises abroad. Occasionally, staff deliver training programmes in the partner country. Colleges have secured funds, including grants from the European Community, to support travel, childcare and other costs associated with these links. One construction department secured over

£70,000 for one of its projects. Many colleges include the study of a European language in full-time technician courses. Joint initiatives with other European countries include work on:

- European land surveying practices
- housing administration and land valuations in Eastern European countries
- developing awareness of European codes of practice in construction.

One college has links with most European countries and named contacts provide fruitful information. Another college has used European funds to support a partnership to develop and publish learning packages in computer-aided design. The English version is translated into German, Greek, Italian, Portuguese and Spanish.

EXTERNAL FACTORS

42 Staff in most construction departments have long-standing links with local schools, social security offices and industry. They are often asked to provide guidance on career pathways to those leaving school and increasingly to unemployed people who wish to change the direction of their career. Construction has a poor image in the minds of many schoolchildren, and college staff attending careers events and open days work hard to dispel misapprehensions and create an attractive picture of work within this industry.

For careers events a construction department has developed purpose-made demountable rigs that enable school pupils and the public to experience joinery, paper hanging, plastering and wall and floor tiling activities. They can also participate in surveying activities using up-to-date laser levelling equipment.

In times of recession, industry accords a low priority to college work and the colleges are left largely to fend for themselves. The number of employees on part-time day and evening courses is in serious decline and the introduction of part-time degrees in the higher education sector has led to the closure of many professional day-release Royal Institution of Chartered Surveyors and Chartered Institute of Building membership courses. Departments have replaced many low-recruiting courses with others that attract larger numbers. Courses for minority trades are generally in decline although some centres are capitalising on this by establishing regional provision for one or more of these crafts.

43 External managing agencies continue to influence the provision in colleges although their impact varies across the country. The major managing agency for construction crafts, the CITB, has reduced its training by one-third over the last few years and CITB-sponsored work has disappeared from some centres. The long-established links with employers through the CITB and other specialist training bodies have become more fragmented. Since the establishment of the CITB in 1964, colleges have collaborated closely to support the construction industry nationally. Many colleges, particularly in the north, have a harmonious working relationship with regional CITB officers. This is especially strong where construction curriculum centres are established and in specialisms such as wall and floor tiling, shopfitting, construction plant and equipment and masonry. In some southern areas of the country, however, relationships with local CITB offices have become more tenuous and the demand for training and the availability of work experience have decreased. There has been limited success with the

CITB bursary scheme, designed to encourage firms to provide support, including work experience, for students on full-time craft courses.

> Three years ago the CITB provided one college with two groups of first-year trainees and two groups of second-year trainees, each group having 16 students. This year the same college has just three students in training.

44 Electrical installation programmes are managed through a specialist training organisation, JT Limited (JTL), but rarely are there enough students to make up self-sufficient groups and colleges introduce other students to ensure that classes are viable. Mechanical services classes are supported by Building Engineering Services and Training and by British Plumbers Employers Council (Training) Limited, but the numbers of students recruited from these sources are generally low. Local managing agents and specialist training groups provide good liaison with the colleges and some colleges act as their own managing agents. Colleges have been as flexible as possible in dealing with the various external organisations concerned with construction in order to limit the decline in the number of students they are attracting.

STUDENT RECRUITMENT, GUIDANCE AND SUPPORT

45 Students can enrol on most NVQ craft courses throughout the year and the adult returners and unemployed students particularly make use of this opportunity. Students are generally only able to join technician courses during the first term of study although a few colleges offer September and January points of entry for full-time GNVQ groups. Departments also offer a wide variety of attendance modes, to suit part-time students whose availability for study may alter during the year: for example to cope with changes relating to their employment.

Semester patterns that complement future higher education courses help students on access and GNVQ programmes.

46 All full-time and most part-time construction students undertake a formal induction to their courses. Health and safety regulations are usually covered either in the college charter, or in the students' handbook, or in both of these documents. Most students receive detailed course handbooks, setting out the specific requirements for coursework and assessment. Students are usually required to sign that they will comply with all college requirements including necessary safety procedures.

47 In the early stages of their studies, students can often transfer between craft subjects and be credited with units that are common to both courses. A positive feature of craft provision is that NVQ students can advance to the next level of their studies at any time during the year. Very few students transfer between GNVQ and NVQ courses. However, transfers from one mode of study to another within the same programme are relatively common; for example, where full-time students obtain employment, or part-time students are made redundant.

48 In most departments there is at least one member of staff qualified to assess students' need for additional learning support.

> In one college, construction staff had been trained to administer the Basic Skills Agency tests and one member was qualified to administer and evaluate a series of vocationally-specific psychometric tests.

Most full-time students have their basic skills assessed when they begin their studies. In a few colleges, this also applies to part-time students. Support in developing skills, particularly numeracy and communication skills, is usually provided through teaching workshops. Not all students take up the offer of extra support.

In one department, support is provided to individuals and small groups in the learning centres located alongside the craft workshops. There is a high participation rate on the part of both full-time and part-time students. They appreciate being able to work on high-quality construction-related materials.

Construction departments normally provide good support for students with specific learning difficulties and/or disabilities. Students with hearing or visual impairment and those with physical disabilities are frequently helped by tutors qualified to provide the assistance they require.

49 Teachers are often available in the workshops to give extra guidance and support. Students can also receive support from the learning support teachers who are available during the week in the resource areas. Adults, in particular, speak highly of the support provided. Some classes for women only are offered on a flexible timetable to take account of arrangements for childcare. However, inadequate crèche facilities in many colleges are an obstacle to increasing the number of adults wishing to study.

50 Bridging programmes are organised with special schools to help students with learning difficulties and/or disabilities in their transition to college. Although students undertake diagnostic tests before their studies begin, teachers of mainstream classes are not always fully briefed on individual students' needs. Staff sometimes find out by chance that students are suffering from dyslexia or other disabilities. Certain disabilities make it difficult for some young people to participate in aspects of construction work. For instance, colour perception deficiencies hinder careers in painting and decorating and electrical installation, and a fear of heights restricts access to many crafts on construction sites.

In one class, an unemployed craftsman with a hearing impairment received one-to-one sign language support from a specialist helper when developing job knowledge and theoretical aspects of the course.

51 Most colleges promote the use of records of achievement and, when available, they are usually reviewed during a full-time student's initial interview. However, colleges are inconsistent in the extent to which they ensure that these records are maintained. In some cases, students are encouraged to update them regularly, using computer software. Sometimes on NVQ craft programmes they are used in conjunction with awarding body documentation to help students draw up their action plans for learning. Comprehensive accreditation of prior learning procedures are available in most colleges but few students make use of these. Instead, students receive accreditation for the job knowledge and skills they demonstrate during their training programmes. Little accreditation of prior learning takes place in technician programmes unless students can produce evidence showing that they have been awarded credits for BTEC units. Some innovative accreditation practices have been developed where colleges have strong links with their TEC and construction employers.

One NVQ co-ordinator was seconded as an accreditation of prior learning development officer through the TEC's 'NVQs for business' initiative. Links were established with two local construction companies. The project involved college staff accrediting in the workplace the previous experience of unqualified workers. This initiative contributed to the companies' success in achieving the status of 'Investors in People'.

52 Tutorials are included as a timetabled activity on most full-time and block-release courses. Students are generally entitled to a weekly

one-hour tutorial which includes one-to-one interviews and assessments. In the better tutorial sessions, there are week-by-week timetables of activities including work on records of achievement, the development of key skills, personal and social education, and careers. However, many tutorial sessions are poorly organised and there are few meetings of programme teams to address tutorial issues. Formal tutorials have yet to be included in most part-time courses although students frequently receive advice and guidance, which is of variable quality, during lessons. Increasingly students are referred to student services for counselling and welfare issues. Careers guidance for full-time technician students is usually provided by departmental staff. It often involves effective liaison with local higher education institutions. Students value the support given by teachers in helping them prepare for entry to higher education. Guidance on career development for part-time and mature students is less systematically organised than for full-time students.

53 Construction tutors are thorough in monitoring students' attendance and finding out the reasons for absence. The subject is a regular agenda item for course team meetings and is frequently the topic of staff room conversation. Nevertheless, poor timekeeping and high absenteeism is a feature of some courses. At one college where punctuality for lessons was poor staff accepted the situation without comment. At another college, there were no class registers and one teacher agreed with the students to delay the start of the lesson by 15 minutes without making up the time later in the day. Departments send absence reports to employers and/or parents. One department has even adopted a policy of faxing employers the names of absent day-release students. Remedial action is of mixed efficacy. Parents and employers are provided with many opportunities to gain information on students' progress. In some departments, written progress reports are issued twice a year. The parents of full-time students are usually invited to an open evening during the year and staff encourage contact with the college throughout a student's period of study.

TEACHING AND THE PROMOTION OF LEARNING

54 Inspectors observed 2,136 teaching sessions in construction during the period September 1993 to July 1996. Of these, 60 per cent had strengths which clearly outweighed weaknesses (inspection grades 1 and 2), which is slightly below the national average of 62 per cent for the 10 programme areas based on the data in *Quality and Standards in Further Education: The chief inspector's annual report 1995-96*. Weaknesses outweighed the strengths (grades 4 and 5) in 8 per cent of sessions. The average rate of attendance at the sessions inspected was 77 per cent and each class had an average of 10.5 students. Table 2 summarises the grades awarded to the sessions inspected.

Table 2. Inspection grades for teaching sessions in construction, September 1993 to July 1996

Sessions	*Grade 1*	*Grade 2*	*Grade 3*	*Grade 4*	*Grade 5*	*Total*
No.	251	1,032	699	140	14	2,136
%	12	48	33	6	1	100

55 Staff have been innovative in developing learning packages which enable students to arrange their studies more flexibly. Learning packs allow students to work on their own at their own pace, often within the framework of a learning agreement negotiated with staff. Increasingly, teachers are becoming managers of the learning process and students are taking greater responsibility for organising their own work. Most colleges have developed detailed schemes of work. These set out clearly the objectives, tasks and resources to be used for each element of activity. Careful planning has led to economy in the use of some specialist facilities; for example, students often work on tasks in rotation. The progress of each student is monitored carefully and

recorded on charts modelled by the CITB. Their achievements are sometimes displayed on departmental noticeboards. Many craft students are encouraged to develop their job knowledge by working on their own, using resources specially designed for the purpose.

A mature student was attending college for two days a week to obtain both level 2 and level 3 qualifications. He used the learning centre to study the regulations applicable to level 3 practical work, while the rest of his group were completing their level 2 assessments.

56 Teachers employ different methods of teaching and organise work in a variety of ways. The quality of teaching and learning is generally good; work is pitched at an appropriate standard and students display skills and understanding appropriate to their level of study. Lessons are well managed: the pace of work takes account of students' abilities; key points are summarised at regular intervals; and students are helped to learn by reviewing what has been covered in previous lessons. Many teachers share the objectives of lessons with their students. They praise good work and constantly question or test students to check their levels of understanding. Where required, appropriate action is taken to improve performance. There are effective records of students' work and progress.

In one electrical installation session, students' understanding was regularly tested. Students were encouraged to engage in discussion. At intervals they were required to work on their own to solve problems which consolidated the work covered. The more able students were invited to describe their work to the rest of the class. Not only did this give these students a sense of achievement but it offered other students alternative approaches to those used by the teacher.

57 Students are generally satisfied with their learning experience. Teachers often place the work in an industrial context which helps students to learn and broadens their knowledge of the construction industry. They effectively use students' own site experiences to strengthen and develop their understanding. Mature students following housing studies programmes are able to contribute experiences from all aspects of this type of work. Craft teachers display pride in their trade and are quick to correct poor practice where it exists. In some colleges, team teaching is used effectively on technician courses. The industrial experience of each of the teachers, for example in economics, building regulations, land surveying, and environmental science, is shared with the students.

58 Teaching and learning schemes are clear, thoroughly prepared and take account of students' needs and abilities. Each lesson is well planned and good use is made of resources such as handouts, learning packs, overhead projector slides, videos and trade literature. Where students work in pairs and small groups they often develop increased awareness of their own and others' academic standard and of what it means to be an effective member of a team. Often in these situations students are required to monitor and review their own performance. Educational visits to large construction projects and manufacturers are usefully combined with delivery of aspects of the curriculum.

59 A common problem in many of the weaker lessons was that teachers misjudged their own contribution to the lesson. Sometimes they talked for too long a period and students became bored. Sometimes they were unable or unwilling to get students to think for themselves, express their own ideas or practise their skills. Sometimes they showed little concern to discover whether students understood the point they were making. On occasions, students did not know where the lesson was leading or could not see how it related to their overall programme of studies. Some lessons were too long and this problem was compounded when the same teacher was used throughout the day.

At times, the activities in which students were engaged were not demanding enough for the level at which they were supposed to be operating. Generally, in these weaker sessions, teachers did not give enough attention to developing students' study skills.

60 Workshop activities are usually related to qualification tasks and supported by comprehensive worksheets. A description of the methods of assessment and assessment criteria, and learning packs that include references to further reading and questions to test students' knowledge and understanding, are generally provided. Most students respond more effectively to workshop activities than to classroom-based activities. Their motivation is higher and they display a greater sense of achievement. This is partially because the outcomes of practical work are more tangible and because students perceive workshop activities to be more directly relevant to their future careers. It is also a reflection of the quality of teaching, which is generally better in practical sessions than in lessons devoted to more theoretical work.

61 Over the past three years, there has been a steady reduction in the number of taught hours for each programme and a heavier reliance on the use of specially designed resources which enable students to work on their own. The development of these resources has involved a considerable amount of staff time and the costs of reproduction have accounted for a large proportion of departmental budgets. Table 3 shows the pattern of learning on craft and technician courses within the colleges in the survey. The pattern is broadly similar for full-time and part-time students, although full-time students receive more tutorial time and spend more time working on their own.

Table 3. Average time in hours spent each week on different learning activities in the colleges surveyed

Type of course	*Practical work*	*Theory*	*Key skills development*	*Students working alone using specially designed resources*	*Tutorial*	*Other*	*Total*
Craft full time	10.4 (48%)	4.8 (22%)	1.4 (7%)	4.1 (19%)	0.7 (3%)	0.2 (1%)	21.6 (100%)
Craft part time	4.1 (55%)	2.1 (28%)	0.3 (4%)	0.9 (12%)	0.1 (1%)	– (0%)	7.5 (100%)
Technician full time	2.2 (10%)	12.7 (60%)	1.8 (9%)	2.3 (11%)	0.9 (4%)	1.3 (6%)	21.2 (100%)

62 Some colleges have yet to introduce methods of learning which enable students to work on their own using resources designed for the purpose. In these colleges, most full-time students are timetabled for up to 25 hours a week, 19 hours of which are spent with the teacher, and the remainder working on their own. Part-time students are taught for an average of over seven hours a week, six hours of which are spent in the classroom or workshop and the remainder working alone on specially designed resources. Students on CITB-sponsored courses are taught, whilst in college, for an average of 24 hours a week and spend the remaining eight hours working on their own using resources prepared for this purpose.

63 Many students are keen to obtain their qualification as quickly as possible. Mature students, in particular, display a strong commitment to, and pride in, their work and they often help to motivate younger students in the same class. Experienced mature students frequently

complete their practical activities quickly and are able to spend extra time in the learning centre gaining knowledge of the theoretical aspects of their craft.

64 With few exceptions, practical work is carried out competently and safely. Students are aware of the need to comply with health and safety legislation and make use of protective clothing and equipment, where appropriate. In a few classes, brickwork students were observed cutting bricks without using eye protectors or the required footwear.

65 Full-time students, on craft and technician courses, gain considerable benefit from work experience and educational visits, and full-time and part-time students often work on real-life projects for the college or the local community. They respond well to such opportunities and good levels of practical skill are developed.

A Midlands college used a railway trust property for students to develop advanced brickwork and other construction skills. The students who were interviewed expressed commitment to the activity and greatly valued the opportunity to work on a real project.

Project work which draws on the skills of various trades is a good feature of the best craft provision.

Students with learning difficulties were involved in the design and construction of a birdwatching hide to be presented to a local nursery school. As part of the activity, they had to plan the construction of the hide and liaise with the school to ensure it met its requirements. The hide was constructed to a high standard.

A full-scale detached house was built by students of a northern college in partnership with a private developer, using materials donated by a local building society and a range of suppliers. The proceeds from the sale of the house were donated to a children's health facility.

In the South West, a major building project involving the construction of five bungalows provided good opportunities for the training and assessment of a range of NVQ students.

66 Some full-time NVQ craft students undertake GNVQ foundation units to broaden their understanding of the construction industry and to improve their key skills, and full-time GNVQ students are sometimes encouraged to select NVQ units to develop their understanding of practical construction skills. Elements common to NVQ and GNVQ such as safety, access and scaffolding, are often delivered to combined classes. Some craft students have difficulty with the study of GNVQ written units. They have unhappy memories of their school experience, lack personal confidence and prefer the practical aspects of NVQ. Several colleges find it better to introduce theoretical aspects of work to their practically orientated students by means other than lessons which are dedicated to theory. For example, theory is often taught in a workshop environment and related directly to practical work.

67 Generally, GNVQ students are provided with good opportunities to develop their key skills. A few colleges encourage them to undertake the BTEC unit on information technology applications, or the computer literacy and information technology award, to help develop their information technology skills.

Key skills tutors in one college work with plumbing students to help them write letters and prepare curricula vitae. Not all students take advantage of the support available.

In a college in the South West, students working towards an NVQ level 2 in carpentry, and also following GNVQ foundation units, were able to develop key skills as part of the integrated learning programme for both qualifications.

Some full-time NVQ craft students, who are timetabled to take foundation GNVQ units to support their studies, find the additional work too demanding and/or irrelevant to their main studies. Craft students often develop good problem-solving and graphical communication skills, but there is little use of information technology because it is not an NVQ requirement. Technician students frequently demonstrate a high level of competence in information technology, but often they fail to apply the skills they have acquired in their assignments. GNVQ students sometimes fail to develop an action plan as part of the process of constructing a portfolio of work.

68 The ability to work effectively with others is an important ingredient of work in the construction industry and most students have good opportunities to develop their team skills by working together in small groups. A few technician students do not readily participate in group or class discussion but the majority of students were learning to work together in a constructive and supportive manner.

Two groups of female students, following courses in interior decoration and higher technician studies, had worked on a collaborative project for the redesign of a contractor's head office. The project gained the *Women As Role Models* achievement award.

In one college, a computer in the resource room next to the workshop allows NVQ level 2 plumbing students to work as a group in checking their understanding of the topic, using a series of multi-choice questions devised by the teacher.

69 Where colleges had well-organised resources, designed to enable students to study on their own, the more able students could press ahead with work at their own pace. Where these resources were lacking, able students were sometimes held back. Those students who had been helped to develop the appropriate study skills worked more effectively on their own. Younger students often lacked the required self-discipline to work alone and, in most colleges, this method of working proved unsuitable for students with learning difficulties. Sometimes, the resources intended for students to study were poorly designed or teachers subsequently failed to check what students had done. Knowledge of the job for which students were training was not effectively linked to the development of practical skills and the failure to mark and correct students' notes helped to reinforce the prejudice that 'job knowledge' is unimportant.

70 Assessment takes a variety of forms. Many staff have followed the lead of colleges which have developed standard assessments for NVQ programmes, considering that these help to avoid subjectivity. A strength of craft provision is that students are often encouraged to assess their own performance in practical work before it is formally assessed by the teacher. They value this opportunity for self-assessment and are able and willing to relate their achievements to the stated criteria.

A group of 'brickwork' students were undertaking various tasks using a workshop manual that contained details of different types of walling. During the activity, they regularly checked their work against the assessment criteria in the manual. Subsequently, they were able to discuss with the teacher whether the completed work was within the tolerance laid down in the specification and to offer an assessment grade.

The continuation of national certificate programmes alongside GNVQ has created difficulties for staff teaching classes containing full-time and day-release students studying for these qualifications because the assessment criteria and unit content are different. There has been a considerable increase in the related paperwork for the different assessment criteria.

71 The achievements of individual students are increasingly being assessed by the use of photographic and other documentary evidence and by on-site assessment. NVQ awards frequently encourage oral questioning as a technique for assessing students' underpinning job knowledge. Oral tests, conducted on a one-to-one basis, enable tutors to assess candidates' knowledge and understanding with some degree of accuracy. However, there remains a danger that such oral tests could lead to a devaluing of students' ability to express themselves clearly in writing. In some colleges, multi-choice questions are used with short written responses to a series of questions consolidating the essential job knowledge for the particular unit of study.

72 Assignment briefs for technician courses sometimes lack clear assessment criteria. Students generally respond effectively to well-designed assignments, and able students often research beyond the levels expected of them. Weaker work shows students' inability to organise ideas and the spelling of technical words is frequently poor. Many teachers provide students with good oral feedback, but written

comments are generally sparse and there is little correction of the errors on scripts. The late submission of assignments is tolerated in many colleges. Most work folders and portfolios contain appropriate material and are well presented.

RESOURCES

Staffing

73 The number of construction teaching and technician staff in the colleges surveyed has fallen during the last three years (table 4). The most significant change is the 17 per cent reduction in the number of full-time teachers.

Table 4. Percentage change in numbers of staff in the colleges surveyed, 1993 to 1996

Staff	*College year*		
	1993-94 to 1994-95 % change	*1994-95 to 1995-96 % change*	*1993-94 to 1995-96 % change*
Full-time teachers	-7	-11	-17
Part-time teachers	-4	-10	-14
Technicians	-3	-7	-10
Construction administration staff	+1	+2	+4
Central administration staff	+22	+4	+27

74 The amount of taught time that students receive has reduced by 16 per cent over the last three years (table 5).

Table 5. Changes in teaching contact hours in the colleges surveyed, 1993 to 1996

Teaching contact hours	*College year*		
	1993-94 to 1994-95 % change	*1994-95 to 1995-96 % change*	*1993-94 to 1995-96 % change*
Total contact hours	-5	-12	-16
Full-time teachers	-7	-16	-22
Part-time teachers	+1	+2	+2
Instructor/demonstrators	+13	+16	+31

The reduction in contact time between students and teaching staff closely mirrors the fall in pass rates.

Full-time teachers' contact hours have fallen by 22 per cent whereas part-time teachers' contact hours have increased slightly. Students have benefited from the large increase in the use of instructor and/or demonstrators for supervising practical activities in the craft areas.

75 The vast majority of construction teachers are male. Only 2 per cent of full-time teachers and 7 per cent of part-time teachers in the colleges surveyed were women. Most are well qualified for the courses they teach (table 6). Frequently, they possess several qualifications. For example, in one college all the craft teachers have advanced craft qualifications and a teaching qualification. The majority of teachers have relevant industrial experience but it is not always recent. Few

colleges have mechanisms for ensuring that teachers' industrial experience is systematically updated. Teachers on technician courses generally possess one or more professional qualification, degree or BTEC higher national award. Some construction teachers have limited information technology skills.

One college has a partnership agreement with a local employer that enables employees of the firm to be used as temporary specialist teachers.

Table 6. Qualifications held by construction staff in the colleges surveyed

Type of qualification	*Full-time teachers* *%*	*Part-time teachers* *%*
Professional qualifications in construction	22	20
Degrees relating to construction	15	11
BTEC higher national diplomas/ higher national certificates	33	17
BTEC national diplomas/ national certificates	23	12
C&G advanced craft	68	32
Bachelor of Education/ PGCE/Certificate of Education	69	24
C&G 730	15	9
Training and development lead body 32/33	62	18
Training and development lead body 34	16	2
Training and development lead body 36	3	1
No formal qualifications in construction	1	2

76 Reliance on part-time teachers is increasing. In one craft section, 42 per cent of the staff were part time, and this made it difficult to co-ordinate work effectively and maintain standards. Part-time teachers often contribute valuable up-to-date experience of industry but many of

them need to improve their teaching skills. Their attendance at course team meetings is often voluntary although some colleges lay down a minimum level of attendance at such meetings within the contracts they issue. There is a close working relationship between staff and students created by a desire to gain high-level skills that benefit both the student and the industry.

77 Full-time staff, and often part-time staff, have good opportunities for staff development, which include opportunities for curriculum development and technical updating. In several colleges, staff are allocated a personal staff development budget. For example, one college makes an annual allocation of £200 for each person for staff development. Colleges in the survey had different methods of inducting newly-appointed staff. Where new staff were provided with a mentor their effectiveness was much improved.

78 There are generally enough technicians to provide effective support for teaching and practical work in construction. Some colleges are well resourced, having a teacher to technician ratio of 2:1. In others, there were shortcomings in the support available on technician courses, in specialist construction crafts such as building services, and in evening cover. In one example of poor practice, a department has 12 full-time and 10 part-time teachers working on two sites sharing only one technician. Clerical support available to departments is generally satisfactory. However, there are cases where teachers spend an excessive number of hours on administration.

Equipment

79 Construction equipment provision is generally adequate to meet existing learning needs and much of it is comparable to that used in industry. Recent capital allowances from the FEFC have helped many colleges to upgrade their old machinery.

After waiting for more than 10 years a department recently replaced a 35 year-old concrete testing machine with a new one which met current standards.

80 Only a few colleges have a central policy for replacing equipment. Departments bidding for capital investment are required to justify their bids in terms of existing and potential enrolments and curricular requirements. Despite the recession there are many instances of employers donating modern equipment such as central heating systems and scientific apparatus, which help to create a realistic working experience for students. The quality and quantity of equipment are most varied in the disciplines of construction science, woodworking machinery, land surveying and building services. In recent years, there has been considerable investment in information technology facilities for technician courses in order to bring hardware and software up to industry standards. The ratio of computers to students is generally satisfactory. Several sections have impressive computer-aided design suites that service a wide range of design and general building courses including degrees. Some construction departments, however, have no dedicated information technology facilities; they have to use the college's central resources which invariably have a limited range of software for construction. Information technology facilities for craft students are limited.

81 Most departments have an adequate supply of appropriate handtools although some of the small powered handtools need replacing. The maintenance and sharpening of tools is a concern in a number of instances where technician support is inadequate. Most classrooms have good aids for teaching and learning such as whiteboards, noticeboards, overhead projectors and screens. The siting of some whiteboards could be improved: they are often difficult to read owing to the glare from sunlight and not all classrooms have suitable window blinds. The quality of furniture varies from good to very poor.

82 In most sections there are adequate supplies of materials and these are well managed by staff. Students are generally required to complete detailed requisition orders in order to obtain materials and equipment from stores. Staff are often able to gain donations of materials and other consumables from manufacturers and builders' merchants and there is strong co-operation with local companies to obtain preferential prices on materials.

Two West Midlands colleges collaborated to share the cost of transporting cheap wall coverings from a company in Kent.

83 Many staff have been innovative in the development of practical projects. The practical tasks set for craft students enable the same material to be used several times over. Much of the wood trades assessment projects require full-size construction, and staff design the training tasks to exploit fully the repeated use of materials. Although the definition and quality of work usually deteriorates the more materials are used, with care, bricks can be used six or more times. Copper pipe, sheet lead and electrical wiring have scrap value and technician staff are usually diligent in ensuring that the department gains from this. In trades such as painting and decorating, plastering and glazing there is limited potential for the re-use of materials and practical work is accordingly more expensive to resource. Where possible, staff endeavour to find permanent projects for students so that waste can be minimised.

84 In the better resourced libraries, there is an appropriate range of books and technical publications which covers all construction specialisms. Resources are reviewed regularly and outdated material is replaced after appropriate consultation. Some of the poorly resourced libraries contain old and outdated texts and have few construction periodicals. Library stock is less than adequate especially for the specialist higher technician courses. Not all college sites have library

facilities. In such limiting circumstances, books and technical journals are usually held by course teams or placed in learning centres. Students are reluctant to travel to other sites in search of resources.

85 The development of methods of learning in construction which involve students working on their own using specially designed resources, has led many departments to establish their own learning centres for students to work in. Some of these centres have been created through self-help projects and consist of screened-off workshops or adjoining rooms which are adapted for the purpose. Many students are expected to spend as much as a quarter of their study time working in learning centres with teachers available to offer assistance if it is required. Good learning centres are now a familiar feature of most construction departments. They have extensive study areas and often incorporate a well-stocked library of books and other learning materials which are easily available to students during their studies. Supplementary learning aids include computers with industrial standard software, compact disk read-only memory (CD-ROM) databases, manuals of codes of practice, models, trade literature and technical catalogue systems. Some centres allow students to borrow lap-top computers for use at home. Students gain considerable benefit when learning centres are close to workshops and classrooms. Over recent years, the quality of the packs of learning material developed by course teams and consortia have steadily improved. The materials take account of the varying abilities of students, and are well presented. Often they are designed by graphic designers from the college.

Accommodation

86 Accommodation for construction varies in quality but, in general, it meets the needs of the curriculum. A few colleges have excellent accommodation. A few suffer from poor classroom accommodation, cramped workshops, inadequate accommodation for staff or learning centres which are too small or poorly resourced. Many college

construction departments operate on separate sites and therefore require additional staff and other resources. Material delivery costs are also higher than for departments based on a single campus. Most colleges have responded well to the requirements of NVQs by providing realistic site environments in which students can work and be assessed.

87 Many departments are aiming to make better use of the space available to them by improving the layout of workshops and classrooms and by introducing computerised management of the facilities. Considerable refurbishment has been accomplished through self-help projects involving departmental staff and students. Students frequently undertake the design and estimation of this building work as learning tasks. Estates management staff usually help by obtaining statutory approval for the work and liaising with appropriate officials. Most colleges are eager to take advantage of the construction department's skills in helping to achieve their own building programme. Occasionally local employers and suppliers help in sponsoring or providing materials for such projects.

A challenging self-help project involved students designing and building a kitchen in an area where the walls, ceiling and floor were neither square nor level.

88 Most workshop accommodation is adequate to enable full-sized project work to be carried out. It is also designed to provide students with the opportunity to gain realistic experience and test their competence. In general, workshops are designed to provide the flexibility required to accommodate different crafts and different types of project. Specialist areas or laboratories are often available for construction science. Concrete technology facilities are not always available for technician courses. Storage areas for building materials are often too small and the repeated delivery of small loads leads to increased wastage and higher costs.

89 Access for construction students with restricted mobility is usually satisfactory although occasionally limited to ground floors. Construction staff mount displays of wall posters, maps, scale models and building components which help to stimulate learning and to forge a subject identity for construction within the college. In most departments, rooms are finished to a satisfactory standard. Work areas are well illuminated and have comfortable temperature control. In some other departments, the buildings are poorly maintained and drab in appearance. Most areas are kept clean.

90 In the colleges surveyed, 10 per cent of construction departments had been given special priority in the college's accommodation strategy. Some rearrangement and refurbishment of accommodation was taking place as a result of the rationalisation of college sites and relocation to new accommodation was leaving some departments with less space than they had previously enjoyed. The contraction in student numbers has also resulted in some departments giving up floor area to other growing programme areas.

STUDENTS' ACHIEVEMENTS

91 Students' achievements are measured in several ways. Completion rates relate to the number of students on the course when it ends as a percentage of the number of students who started the course. These are presented in paragraphs 92 to 94 and in table 7. Success rates relate to the percentage of students enrolled at the start of the course who obtain their intended qualification at some time. Success rates are addressed in paragraphs 95 and 96 and in table 8. Pass rates relate to the number of students who achieve the qualification as a percentage of the number of students who complete the course. Pass rates are discussed in paragraphs 97 and 98 and in table 9.

92 The average completion rate for construction courses in 1994-95 was 82 per cent compared with a figure of approximately 70 per cent for

all vocational courses in the further education sector. Table 7 indicates a deteriorating performance on some one-year courses. However, the flexible manner in which construction departments offer the opportunity for students to enrol throughout the year may well disguise the true situation. The survey recorded the number of students enrolled in November and the number who were still enrolled at the end of the year. Inspectors were often unable to find out from college data how many of those recorded as enrolled in November had been replaced by further enrolments during the year, and how many had subsequently withdrawn. Many colleges do not yet fully consider the use of cohort success as a performance indicator. Most merely use a year-by-year comparison, which does not necessarily present a true picture of withdrawals from courses.

Table 7. Student completion rates by type of course in the colleges surveyed, 1992 to 1995

Course type	*1992-93* %	*1993-94* %	*1994-95* %
One-year, full-time intermediate level	96	77	77
One-year, part-time foundation level	96	97	88
One-year, part-time intermediate level	100	100	100
One-year, part-time advanced level	100	98	100
One-year, part-time higher education	100	100	100
Average for one-year courses	99	96	92
Two-year, full-time advanced level	68	84	83
Two-year, part-time intermediate level	75	73	73
Two-year, part-time advanced level	91	85	83
Two-year, part-time higher education	82	92	90
Average for two-year courses	79	78	77
Average (all courses)	**84**	**83**	**82**

Note: completion rates relate to the number of students on the course when it ends as a percentage of the number of students enrolled on the course on 1 November

93 There has been little change in recent years in the completion rates for most construction courses. Over the three-year period, the numbers of students completing the GNVQ have been consistently lower than for the corresponding BTEC diplomas. This can be attributed to craftspeople finding difficulty with the different modes of study and assessment (paragraph 12) and other students finding the demands of maintaining portfolios too burdensome. However, the total enrolments for the GNVQ foundation course are much higher than those for the previous first diploma owing to the inclusion of craft NVQ students.

Advanced two-year part-time courses also show a decline in completion rates, mainly on craft electrical and plumbing courses. The average completion rates for the two-year full-time courses are very similar to those of the equivalent part-time courses. Two-year part-time intermediate courses are predominantly for those studying craft qualifications at NVQ level 2. Frequently students on these courses are either adults or funded by training agencies. Many of these adults attend college for up to 16 hours a week, while being registered as unemployed. However, some find it difficult to continue their studies due either to the requirement that they should be available for work or because of the need to attend job preparation courses and interviews. In recent years, training agencies have found it difficult to recruit students of the appropriate standard. Many of those recruited are unable to cope with the demands of NVQ level 2 study, often lacking basic skills in numeracy and literacy.

94 Many colleges have improved retention by:

- offering a wide range of courses at each level, allowing students to choose a course that is most suited to their needs. For instance, some students switch from one level of NVQ to another during the year as they complete a programme or find a more appropriate level
- closely monitoring the attendance of part-time students and regularly following up absences with employers
- persuading students that they need to obtain qualifications if they are to gain employment in the industry
- developing close links with feeder schools, establishing construction curriculum centres, and providing 'taster' days and work shadowing or experience for prospective students. Such initiatives often result in more able students being recruited

- diagnosing the need for additional support in basic skills at the start of the course and providing appropriate support alongside vocational studies
- providing structured tutorial support systems which ensure regular contact between tutor and student
- establishing good working relationships between staff and students, which help to encourage open discussion between tutors and students, and enable tutors to provide the support that individuals may require.

95 Most students have learning agreements with their college which include the dates by which they expect to achieve their qualifications. One indicator of the success of a course is the proportion of those enrolled who achieve the award at some stage. Table 8 shows the success rates by course type for the colleges included in the survey who use this indicator of success. Historical information is not available on students achieving the award within the expected time and the first two columns of table 8 include successful retakes. Data for retakes were not available for inclusion in the 1994-95 column. In many cases, on both the one-year and two-year courses, there has been an overall decline in success rates over the three-year period. The decline does not always correspond with changes in completion rates. For example, the introduction of GNVQ at foundation level has enabled colleges to offer such provision to students who would previously have had to follow an intermediate level course. Consequently, there has been an overall increase in success at foundation level. Often, such students gain the necessary confidence and skills to obtain the foundation level qualification and subsequently transfer to intermediate provision during the year. Even after taking all these factors into account the success rates on construction programmes are poor compared with other programme areas. Also it is clear that a significant proportion of construction students resit examinations in order to achieve a full qualification.

Table 8. Success rates for the colleges surveyed, 1992 to 1995

Course type	*Year of completion*		
	1992-93	*1993-94*	*1994-95*
	%	*%*	*%*
One-year, full-time intermediate level	50	41	30
One-year, part-time foundation level	23	42	51
One-year, part-time intermediate level	59	52	52
One-year, part-time advanced level	57	60	59
One-year, part-time higher education	72	62	58
Average for one-year courses	56	53	51
Two-year, full-time advanced level	57	69	58
Two-year, part-time intermediate level	57	49	31
Two-year, part-time advanced level	77	71	52
Two-year, part-time higher education	64	71	45
Average for two-year courses	63	58	39
Average (all courses)	**62**	**57**	**42**

Note: success rates relate to the percentage of students enrolled on the course, on 1 November who obtained their intended qualification at some time; the 1994-95 column shows the percentage who attained their intended qualification within one year (for one-year courses) or two years (for two-year courses)

96 Increasingly, part-time students enrol with the intention of completing only a partial NVQ qualification. However, many see the NVQ structure as enabling them to gain sufficient skills to be able to obtain casual employment. Pressures on employed students to attend work sometimes conflict with the need to attend their course and their attendance at college can therefore be erratic. Many colleges consider it an unrealistic aim for part-time students to complete an NVQ level 2 competence-based qualification in construction crafts within two years.

The situation is exacerbated by the limited opportunity for individual students to gain the necessary industrial experience. Part-time technician courses at both advanced and higher levels have also seen a decline in success rates. Many classes include unemployed students who lack the relevant industrial experience to support their studies.

97 The commonly-quoted indicator of success is the pass rate; that is, the proportion of students who, having completed the course, achieve the qualification for which they are aiming at some stage. The average pass rate for students on all vocational courses in the further education sector is 77.5 per cent. Table 9 shows the pass rates for construction courses in the colleges included in the survey over the three-year period ending in 1995. The overall decline in these rates is clear and the reasons are similar to those for the falling completion rates on some courses. Two-year part-time intermediate courses have been particularly affected as many students are unable to gain the site experience necessary to attain the competence levels required by the NVQs. Although some colleges have successfully introduced foundation level courses, many students are still sent to colleges by training agencies to follow an intermediate level course which is too demanding for them.

Table 9. Pass rates of those students completing the course in the colleges surveyed, 1992 to 1995

Course type	*1992-93 %*	*1993-94 %*	*1994-95 %*
One-year, full-time intermediate level	57	56	38
One-year, part-time foundation level	57	52	58
One-year, part-time intermediate level	69	52	52
One-year, part-time advanced level	63	72	65
One-year, part-time higher education	80	68	66
Average for one-year courses	64	64	58
Two-year, full-time advanced level	79	74	60
Two-year, part-time intermediate level	76	75	44
Two-year, part-time advanced level	84	81	65
Two-year, part-time higher education	68	73	44
Average for two-year courses	78	76	50
Average (all courses)	**74**	**73**	**52**

Note: pass rates relate to the percentage of students who completed their course and who achieved their qualification; the 1994-95 column shows the percentage who obtained the target qualification by 1 September of the year of completion

98 A major factor that contributes to the low pass rates is the number of individual assessments that a student must pass to qualify for a full award. For example, a student following an NVQ craft course may well have to pass a dozen individual element assessments before being credited with a unit and 10 units may be needed before the full award is achieved. Pass rates for individual units are often high. There is little analysis of outcome data, either by course teams or departmental managers to try and identify the reasons for and to address poor

performance. Few construction teams make use of value-added analysis. The overall decline in pass rates over the last three years must be considered carefully by colleges if they are to develop strategies for improving their students' chances of success. During the survey, colleges made no reference to reduced contact hours influencing pass rates although there is a statistical correlation between the two sets of figures.

99 Some departments have achieved consistently good recruitment rates, retention rates and examination results across their courses. Characteristically they have been active in ensuring the support of local industry, seeking new markets and providing appropriate support for students from backgrounds not normally associated with post-school education. Successful courses are often characterised by:

- well-organised and well-integrated work experience for full-time students
- careful monitoring and frequent review of students' progress by the course team
- the department's readiness to seek out the reasons for unusual or poor performance and to take appropriate action
- the provision of resources which allow students to demonstrate the range and standard of work required to meet awarding bodies' standards.

100 Table 10 shows the destinations of craft and technician students after leaving the final year of their course or programme in the colleges surveyed. In both groups, the numbers progressing to other further education courses or to higher education have increased during the last three years while progression to employment has fallen. Approximately 80 per cent of advanced level full-time technician students go on to higher education. Information on craft students' destinations is limited largely to the courses they next follow. Progression of NVQ level 3 craft

students to higher levels of study is rare. Opportunities are limited because the underpinning knowledge required for NVQ craft courses does not sufficiently prepare students for continued studies. In most of the colleges inspected, but not part of the survey, the information on students' destinations obtained during inspections was often incomplete.

Table 10. Construction students' destinations in the colleges surveyed, 1992 to 1995

Type of course	*Year*	*Destinations %*			
		Employment	*Further education*	*Higher education*	*Other*
Second-year craft	1992-93	80	14	1	5
	1993-94	72	15	1	12
	1994-95	67	24	<1	9
Second-year technician	1992-93	62	9	24	5
	1993-94	55	12	28	5
	1994-95	52	15	28	5
Total construction second year	1992-93	72	12	12	4
	1993-94	65	14	12	9
	1994-95	60	20	13	7

101 The excellence of construction craft skills is displayed at the skillbuild competitions where difficult tasks, unknown to the competitors in advance, are set to be completed in a limited time and to exacting standards providing a benchmark for craftsmanship.

The skillbuild competition in 1995 had 12 participating trades and more than 800 trainees, aged 21 or under, entered regional heats from which 157 finalists were selected to compete nationally in a three-day event. The winners in the eight trades of: bricklaying, cabinet making, carpentry, joinery, plastering, painting and decorating, stonemasonry and wall and floor tiling, will receive additional training and subsequently represent the United Kingdom at the International Youth Skills 'Olympics' to take place in Switzerland during July 1997.

The test pieces are devised by the relevant trade, guild and teacher associations reporting to a technical committee. These associations also provide the panel of judges. The events are sponsored by many representatives of industry, the CITB and the DfEE to promote the training and development of highly qualified and skilled craftspeople. Considerable preparation and support is given by colleges to trainees entering the competition. Colleges and employers often need to be prompted by the organisers to provide enough qualified entries and a database is being developed to co-ordinate future events. The opportunity to celebrate excellence in the public eye has been achieved at these events, most of the entrants having already gained the appropriate NVQ at level 2 and nearly half at level 3.

FUTURE TRENDS AND INFLUENCES

102 Most of the colleges in the survey are planning for advancement and growth by developing courses to meet the changing needs of students and industry. Some departments see opportunities in offering the higher level NVQs at levels 4 and 5 in construction technology and management which have recently being approved by the National Council for Vocational Qualifications. Opportunities for students to select units from modular programmes to suit their needs, or those of their

employers, are growing. A quarter of the colleges surveyed intended to provide more short courses, for which industry would bear the full cost, in areas such as health and safety, and internal decorative finishings. Colleges are aware that 96 per cent of the construction industry comprises companies which employ fewer than 10 employees and which often lack the resources required to provide adequate training for improving the skills of their workforce. Some colleges wish to develop even stronger links with employers in order to meet their changing demands for higher order skills. Most departments are actively seeking additional franchise arrangements with schools and universities. With schools, the provision is for foundation GNVQs and with universities for access courses, and degree or higher level full-time BTEC courses.

103 Some colleges are seeking to improve students' support and guidance through structured interviewing, screening and tutorial support in order to help students meet their specific learning needs. The accreditation of students' prior achievements, especially those of adult students is yet to be effectively developed in many colleges. A college in the North West is currently developing a series of fast-track courses to allow the more able student to progress quickly from further to higher education. Many departments are developing flexible patterns of learning to meet the needs of students, such as those on shift work or those required to work away from home. Part of this process involves the design of resources which enable students to study effectively on their own, in the classroom, in the college's learning centres, in the workplace or at home. It also involves improving the quality of students' personal action plans and the conduct of regular tutorials to review their progress. Interactive video is being used to develop skills and knowledge but this is still in the early stages of development.

104 Construction departments set a high priority on improving the image of construction at every level of society. In attracting students they have to:

- find effective ways of presenting the career prospects which accrue to the many specialisms within the construction industry
- overcome worries about reduced opportunities for employment resulting from the economic recession
- face increasing competition from neighbouring colleges and other training providers.

105 The pressure on capital funding in colleges is seen as a major threat to the effective delivery of NVQs because of the high cost of NVQ materials, including those required to enable students to demonstrate their competence on full-sized projects. To help offset such problems several departments are seeking to assist companies by providing work-based assessments on site or in the office. These assessments include arrangements for accrediting prior learning, which allow experienced workers to gain their awards in a shorter than normal time span. Further 'on-the-job' training is being developed to help companies to meet their actual training needs.

106 In July 1994, a report entitled *Constructing the Team*[6], by Sir Michael Latham, sought to address some of the difficulties the industry faces. The report's recommendations which have been accepted by the industry, its clients and the government, include the need for clients to be the driving force for change within industry, demanding more efficient on-site performance and greater productivity, improvements in quality and a substantial reduction in real construction costs. There would also be fairer construction contracts and payment practices, underpinned by legislation. These changes will have a considerable influence on education and training needs in the sector for both craft and technician students.

PUBLISHED GRADES FROM INSPECTIONS OF CONSTRUCTION, 1993 TO 1996

Grade	***1***	***2***	***3***	***4***	***5***	***Total***
No.	1	62	39	3	0	105

Source: FEFC inspectorate published reports, 1993 to 1996

Grade Descriptors

Grade 1 *Provision which has many strengths and very few weaknesses*

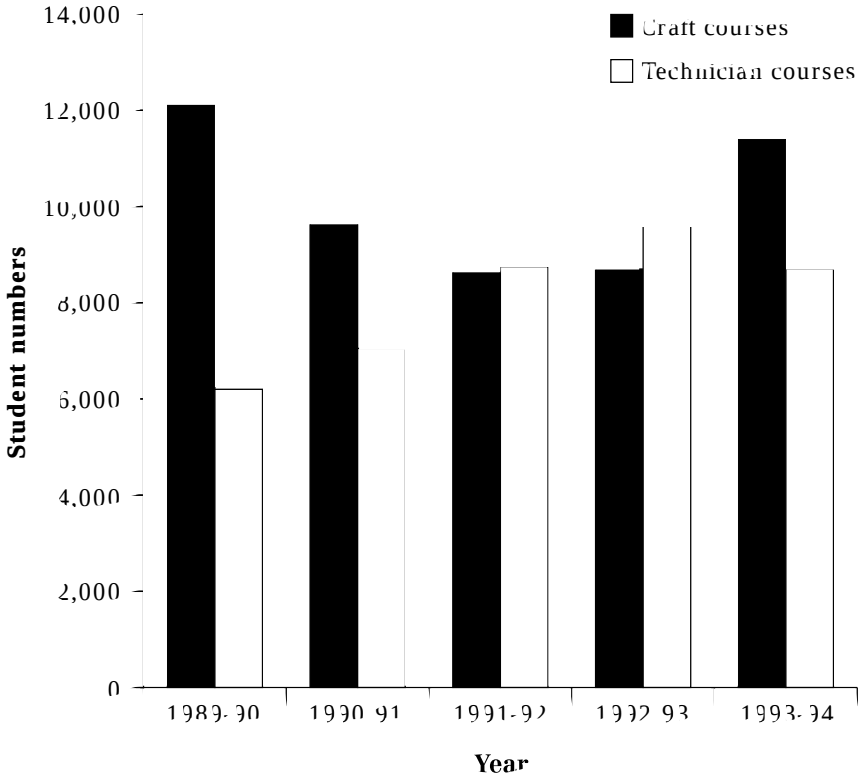
Grade 2 *Provision in which the strengths clearly outweigh the weaknesses*

Grade 3 *Provision with a balance of strengths and weaknesses*

Grade 4 *Provision in which the weaknesses clearly outweigh the strengths*

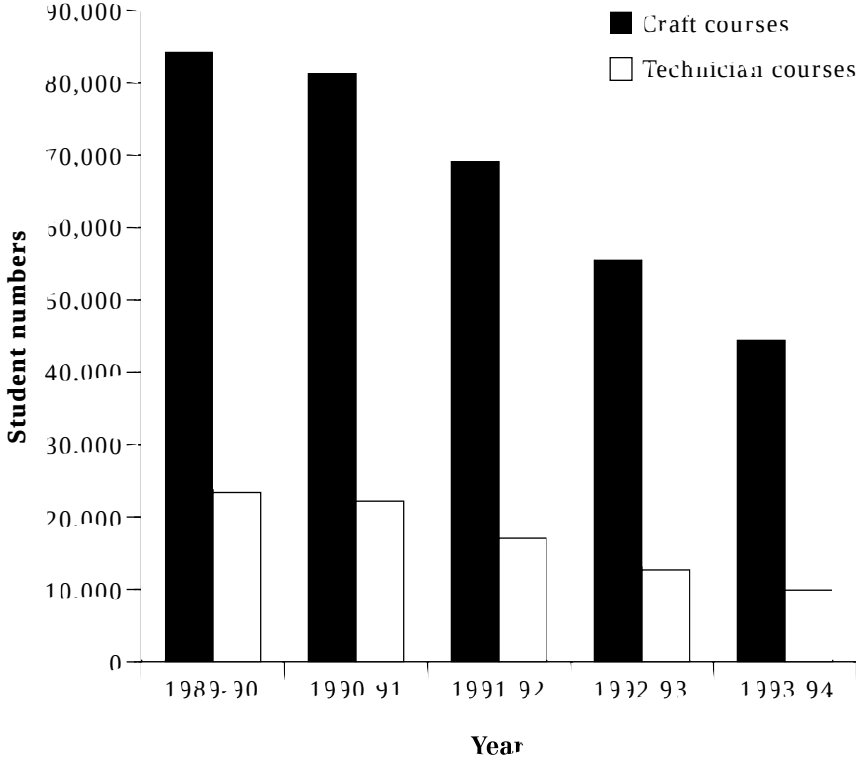
Grade 5 *Provision which has many weaknesses and very few strengths.*

STUDENT NUMBERS ON FULL-TIME CRAFT AND TECHNICIAN COURSES, 1989 TO 1993



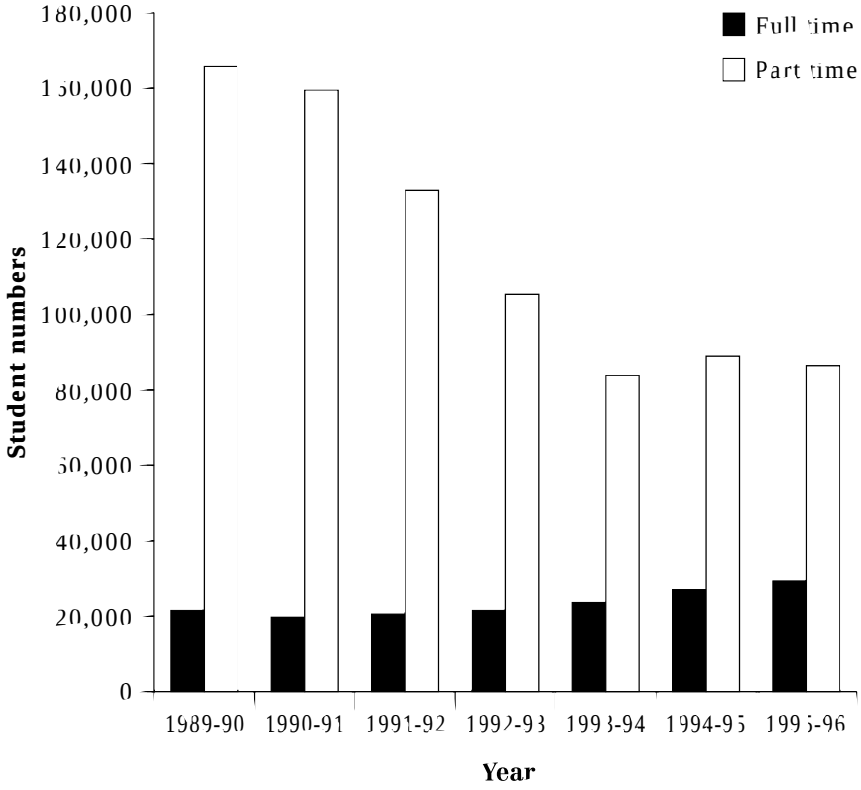
Note: Student numbers as at 1 November
Source: Further Education Statistical Record, 1989 to 1993

STUDENT NUMBERS ON PART-TIME CRAFT AND TECHNICIAN COURSES, 1989 TO 1993



Note: Student numbers as at 1 November
Source: Further Education Statistical Record, 1989 to 1993

STUDENT NUMBERS ON CONSTRUCTION COURSES, 1989 TO 1996



Source: Further Education Statistical Record, 1989 to 1996

NUMBER OF STUDENTS ENROLLED ON COURSES IN CONSTRUCTION BY AREA OF WORK AND LEVEL OF QUALIFICATION, JULY 1995

Area of work	*Entry level*	*NVQ level 1*	*NVQ level 2*	*NVQ level 3*
Environmental technologies	0	119	23	1,445
Construction crafts	111	10,459	28,771	8,614
Construction technology	0	228	2,054	8,235
Civil engineering	0	893	872	1,510
Mechanical services	0	648	11,761	3,845
Other construction	0	46	153	166
Qualifications not individually listed	0	0	0	0
Construction total	**111**	**12,393**	**43,634**	**23,815**
% of all qualifications of known level	**0**	**14**	**48**	**26**

Source: Further Education Statistical Record, 1989 to 1996

Higher education (level 4 and 5)	*Not known and mixed levels*	*Total 1994-95*	*% of provision*
802	69	2,458	2
13	239	48,207	42
5,411	1,073	17,001	15
1,994	796	6,065	5
2,741	6,722	25,717	22
0	0	365	< 1
0	16,167	16,167	14
10,961	**25,066**	**115,980**	
12	**—**	**—**	

ORGANISATIONS CONSULTED DURING THE SURVEY

The FEFC acknowledges the information and assistance given by members of the following organisations in preparing this survey report:

British Association of Construction Heads (BACH)

Building Employers Confederation (BEC)

Business and Technology Education Council (BTEC)

Chartered Institute of Building (CIOB)

City and Guilds of London Institute (C&G)

Construction Industry Standing Conference (CISC)

Construction Industry Training Board (CITB)

Department for Education and Employment (DfEE)

Department of the Environment (Construction Sponsorship Directorate) (DOE)

Engineering Construction Industry Training Board (ECITB)

Federation of Master Builders (FMB)

Federation of Civil Engineering Contractors (FCEC)

Joint Accreditation Panel (JAP)

National Council for Vocational Qualifications (NCVQ)

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Bolton College

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Bradford and Ilkley Community College

Cleveland Tertiary College (The)

College of North West London (The)

Croydon College

Doncaster College

Dudley College of Technology

Ealing Tertiary College

East Berkshire College

Eastleigh College

Exeter College

Furness College

Hackney Community College

Hammersmith and West London College

Huddersfield Technical College

Leeds College of Building

Leicester South Fields College
Manchester College of Arts and Technology
Mid-Cheshire College of Further Education
New College, Durham
Newcastle College
Newham College of Further Education
North Warwickshire College of Technology and Arts
North West Kent College of Technology
Oaklands College
Plymouth College of Further Education
Salford College
Salisbury College
Sheffield College (The)
Somerset College of Arts and Technology
South Kent College
Southampton City College
Stafford College
Stockport College of Further and Higher Education
Stoke-on-Trent College
Stroud College of Further Education
Walsall College of Arts and Technology
West Cheshire College
Wirral Metropolitan College

ENDNOTES

1 Information on the industry's workload in *The State of the Construction Industry*, Issue No. 5, Construction Sponsorship Directorate, Department of the Environment, February 1996

2 Information supplied by the CITB Training Committee, April 1996

3 *Housing and Construction Statistics 1984–1994 Great Britain*, London, HMSO

4 Lucy Ward, 'Building trade hit by serious skills slump', *The Times Educational Supplement*, 24 May 1996. Article based on the findings of the Construction Industry Round Table Survey in May 1996

5 *Labour Market and Skills Trends 1995-96*, Department of Employment, 1994

6 *Constructing the Team: The Latham Report*, July 1994

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