

The Shortage of Teachers of Craft, Design and Technology

While there are no figures available for the precise numbers of teachers of Craft, Design and Technology (CDT) in the schools of England and Wales, the Department of Education and Science estimates that there are approximately 18,600 of them, both qualified and non-qualified, constituting eight per cent of the total teaching force.¹ Of the 18,600, only four per cent are under 25 years of age, 57 per cent are aged between 25 and 45, and 39 per cent are more than 45 years old. The implications of this age profile of the CDT teaching force in terms of retirement over the next decade or two are clear and disturbing and, as we shall see, it is highly unlikely that an equivalent number of new entrants will replace those who retire or leave teaching for other jobs. At present, however, between one-fifth and one-quarter of those who can be regarded as teachers of CDT are wholly engaged in administrative and other non-teaching duties and thus probably only about 14,400 are classroom teachers of the subject.

For this and other reasons, there is a shortage of CDT teachers in our schools today, though estimates vary widely as to the precise number of teachers needed and probably nobody knows the exact position. However, a survey conducted by the Advisers' Association in 1976 estimated that there were about 1,000 vacancies for CDT teachers, of which about half were 'hidden' or frozen.² 'Hidden' posts are those which are no longer advertised because when schools are unable to obtain a CDT teacher, they frequently appoint a teacher with another subject specialism in order to bring staff numbers up to establishment. In some cases, school workshops have been closed or given over to other activities while, in others, schools have had to rely on unqualified instructors originally appointed to assist trained CDT teachers. The situation is unlikely to improve over the next few years as senior teachers of CDT, many of whom joined the profession as ex-servicemen just after the war, approach retirement. However, falling rolls in the secondary schools may help to mitigate the worst effects of this shortage.

In the meantime, the lack of qualified CDT teachers is having very deleterious effects on the schools. In some, the most able children are excluded from CDT, as headteachers are understandably reluctant to deny children of low ability the opportunity to benefit from the subject. However, as a consequence too few children of high ability are given the chance in their third and subsequent years in the secondary school to study the subject and carry it through to GCE 'O' and 'A' levels in order to make their careers in this field. A similar position obtains for students in the 16 to 18 years age group: many Sixth Form Colleges are neither staffed nor equipped properly to teach the subject at 'A' level and colleges of further education and technical colleges too rarely provide suitable courses.

Paradoxically, however, the opportunities for young people aged 16 to 18 years to study CDT,

principally in the secondary schools but also to some extent in the further education colleges, have never been greater or more varied. CDT has branched out and is now taken to include Design Studies, Technology, Silversmithing/Jewellery, Automobile Engineering and Graphic Communication. In particular, a number of GCE courses have been developed in the subject area in recent years, including 'O' and 'A' level Technology and 'A' level Design. Moreover, partly as a result of equal opportunities legislation, girls now have equal access with boys to CDT teaching and many schools are now giving boys and girls equal time. Unfortunately the shortage of CDT teachers often results in each individual receiving less tuition in the subject.

In many ways, therefore, the subject in the schools can be said to be thriving and is certainly as good as ever, and probably better. However, it suffers from the crippling disadvantage of too few able teachers and one reason for this is its very complexity. Many teachers who were quite capable of teaching handicraft or technical drawing need retraining in order to cope with the new design-and-technology-oriented syllabuses and many authorities cannot afford to send them on suitable courses.

The Reasons for the Shortage

A number of factors have contributed to the present grave shortage of CDT teachers, some of them long-standing, some of them relatively recent in origin. Of these, four major issues stand out. Firstly, perhaps the most all-pervasive and intractable problem facing CDT is its lack of status, which applies both to the country at large and also to the schools. Historically, practical subjects such as Design and Engineering have been regarded as carrying less value and cachet than 'pure' Science and Mathematics and are still too often seen in schools as being suitable only for the less able. The reasons for this state of affairs are very complex and deeply-rooted in our culture as an industrial nation and in our academic attitudes.

* This article is based on a paper prepared for the Annual Conference of the Universities Council for the Education of Teachers (UCET) held in Oxford on November 14th-16th, 1980.

Secondly, in recent years the restructuring of our secondary schools along comprehensive lines has resulted in a number of experienced, senior teachers being promoted to administrative and pastoral posts in the schools and being lost to the subject. As we have seen, over 4,000 potential CDT teachers come into this category and, although the same is true of other subjects, CDT has been less able to afford the drain from the classroom of these mature teachers. At the same time, many of the newly-established comprehensive schools have been concerned to establish sound academic reputations and, in some cases, they have encouraged able pupils to concentrate on 'pure science' rather than CDT in the belief that these subjects carry more prestige. In such circumstances, it is hardly surprising if some CDT teachers exhibit a lack of confidence in their subject which is all too easily conveyed to their pupils. These teachers feel that their colleagues have too low a regard for their work and that their career prospects are limited; as a result, they are reluctant to encourage able pupils to enter the field.

Thirdly, the broadening of the content and scope of CDT courses in recent years has, paradoxically, contributed to the shortage of teachers in the subject. On the one hand, it has resulted in less clearly-defined career prospects than in the past and, on the other, it has made pupils aware of a wide range of other career opportunities in related fields.

Finally, the attitude of the higher education institutions has not always been helpful; for example, technological subjects sometimes carry less prestige than pure science and senior academics in technological departments in some universities and polytechnics do not look with favour upon CDT as a school subject. Unfortunately, if the Finniston Report's failure to recognise the existence of 'A' level courses in Design and Technology is anything to go by, the situation does not look like changing much in the immediate future.

Present Teacher Training Provision

The reorganisation of public sector higher education in recent years and the resulting diversification of courses in the new Colleges and Institutes of Higher Education have reduced the overall number of CDT teacher training places. This may, in turn, have adversely affected recruitment; however, the plain fact is that for the coming 1981-82 academic year there are plenty of places available on CDT teacher-training courses and a shortage of suitable applicants.

Present provision falls into two main categories: (1) three and four year undergraduate programmes, and (2) one-year Certificate courses.

1. *Undergraduate Courses:* These are available in both the university and maintained sectors; indeed, the former is the main provider, at Loughborough and Brunel Universities which offer four-year CDT courses leading to an honours degree and a Certificate in Education. Together, they recruited only about 65 students in the academic year

1980-81 which, certainly in the case of Brunel, is well short of the numbers their newly-formed Department of Design Technology has hoped to attract. In the public sector institutions, recruiting for Bachelor of Education courses in CDT is well down in the academic year 1980-81, largely because of the requirement of two 'A' level subjects, together with 'O' level English Language and Mathematics. Strangely, perhaps, the requirement that they pass 'O' level English Language seems to pose would-be CDT students with a greater problem than that of Mathematics. However, one brave venture is the new BEd (Honours) course to be offered by Trent Polytechnic starting in the academic session 1981-82; this course will include a separate Craft, Design and Technology 'strand' for which it is hoped to recruit 10 students annually.

2. *One-year Certificate Courses:* These comprise the traditional Post-Graduate Certificate of Education (PGCE) course for graduates and the Certificate in Education Course for non-graduates with industrial experience and qualifications such as the Higher National Certificate or City and Guilds Full Technological Certificate, and are available both in University Departments and Schools of Education and in public sector institutions. In twelve of these establishments, the DES has provided special grants to recruits from industry who wish to 'retrain' on a one-year course to become teachers of CDT. For the 1980-81 academic year, all the higher education institutions together offering CDT on their PGCE courses recruited only 60 students, made up of 52 men and 8 women.³ However, these numbers were augmented by students on the non-graduate Certificate in Education courses who were probably more numerous than those on PGCE courses. Although no precise figures of the latter are available, probably fewer than 100 applications were received compared with nearly 200 places nationally available.⁴ At present, the output from the two courses, including students on the DES-funded retraining programme, provide just over fifty per cent of new entrants to the profession. However, as some of the 'retrained' teachers are likely to move out of CDT teaching into their original preferred choice of subject when the opportunity presents itself, it would be unwise to rely too heavily on the one-year courses to supply CDT teachers. In any case, the non-graduate Certificate in Education course will cease after 1983.

Overall, therefore, the situation is deteriorating and although, because of the recession, there is likely to be a continuing number of would-be CDT teachers coming forward from industry during the next few years, they will meet only a fraction of the demand.

Possible solutions

Many CDT teachers feel that only a concerted effort by the DES with government backing and appropriate funds can hope to make much of an impact upon the present grave situation. As part of such an overall programme, a number of specific

suggestions have been put forward.⁵ Firstly, the DES should encourage the schools to offer a more balanced curriculum for all students which includes a creative subject. This would result in more able children undertaking CDT courses at 'O' and 'A' level and going on to study the subject in higher education.

Secondly, the prestige of CDT should be improved by awarding honours degrees in the subject. These are presently offered at Loughborough University, will shortly become available at Brunel, and there are proposals for a CNAA degree course at Newcastle Polytechnic and a University of Wales validated one at Gwent College of Higher Education. Able students in the sixth forms should be given every encouragement to apply for these courses. As a way of attracting more students into initial training courses in CDT, the then Advisory Council on the Supply and Training of Teachers (ACSTT) recommended in 1977 that consideration should be given to the introduction of one-year preparatory courses, similar to the foundation courses in Art, which would lead into first degree courses in CDT. This suggestion, which has not been taken up, might well be reconsidered by the ACSTT's recently-reconstituted successor, the Advisory Council on the Supply and Education of Teachers (ACSET).

Thirdly, centres of excellence in CDT teaching should be set up in specific Sixth Form Colleges and schools with large sixth forms, and a national advertising campaign should be sponsored by the DES to advertise both these centres and also teacher training courses in higher education institutions. In addition, HMIs and LEA advisers should urge headteachers to encourage their able pupils to undertake CDT courses.

Fourthly, every effort should be made to attract more girls onto CDT courses, both at school and subsequently in higher education. Although, as we have seen, an increasing number of girls is taking some CDT at school, very few of them study the subject in higher education institutions, partly because it is regarded both by schools and parents as a male preserve. Yet those who do often do extremely well at the subject and girls represent a considerable untapped source of able CDT students.

Fifthly, the retraining schemes for CDT teachers offered by 12 establishments have been an important innovation and in the three years from 1977-78, when they began, until 1980-81 they trained over 450 teachers. When the scheme comes to an end, in 1983-84 at the latest, an alternative should be found for non-graduates and the most promising suggestion is the introduction of two-year courses leading to an ordinary degree and a teaching qualification. However, if such courses are to be successful in recruiting viable numbers of students, they must offer sufficient financial inducement in the form of special grants. Indeed, the whole question of financial incentives is one that might, with profit, be more fully explored. One suggestion that has been put forward, for example, is the award of extra increments to students who successfully

complete courses in shortage subjects.⁶ In this context, the recent recommendation by the DES that a pilot scheme of National Scholarships for teachers of shortage subjects be introduced in Autumn 1981, designed to attract high quality students onto PGCE courses, is significant.

At the time of writing, however, the draft outline scheme applies only to teachers of Mathematics and Physical Science and it is to be hoped that it will be extended to CDT.

Finally, there is an urgent need to provide more, and more effective, in-service courses for traditional Craft teachers, to enable them successfully to teach the newer, more varied CDT courses in schools. Too often, the CDT teacher's knowledge of technology, in particular, is trivial or non-existent and the need for local in-service courses to remedy this deficit is pressing.

Conclusion

It is clear both that the shortage of CDT teachers is very serious and also that the position is unlikely to improve without concerted action. Although there is a number of schools in which the subject thrives and, indeed, is probably better than ever, there are too few able teachers of the subject available for their effects to be as widespread and beneficial as is desirable. The reasons for this situation are manifold and deeprooted and improvements can only be effected by a national programme of action by the DES, the LEAs and the teacher training institutions.

References

1. I am indebted to DES Staff Inspector J.L. Swain for this information, provided in a letter dated 22 September 1980.
2. These figures roughly accord with those cited by Hazel Shaw, 'Silence in the workshops', *Guardian*, 13 October, 1979, and with DES estimates of real and hidden vacancies.
3. These figures were supplied by the Graduate Teacher Training Register.
4. Information supplied by the DES in July 1980.
5. See, for example, the publications of the Standing Conference on Schools', Science and Technology (SCSST).
6. 'Teacher Recruitment in Shortage Subjects', a paper prepared by Norman Payne, Principal, Bath College of Higher Education, for the 1980 UCET Annual Conference, referred to above.