

Reducing CDT Teacher Supply Problems

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We print, with permission, excerpts from the preliminary report of *The CDT Support Through Change Project*.

The progress of CDT is being curtailed by teacher shortages of both a quantitative and qualitative nature. This report documents the first stage of a North West regional project set up to reduce this dual shortage in CDT, and to test a novel strategy for its potential in other shortage subjects, and regions.

The project's seeds were sown at a regional CDT conference in November 1985. This HMI-sponsored event focused on ways of supporting craft teachers in their adaptation to modern CDT practices. Colleges in the region had developed high quality one-term updating courses but were experiencing difficulties in attracting teachers. This problem turned on the shortage of specialist CDT supply teachers able to give pupils sound and relevant tuition whilst their CDT teachers were seconded to one-term updating courses.

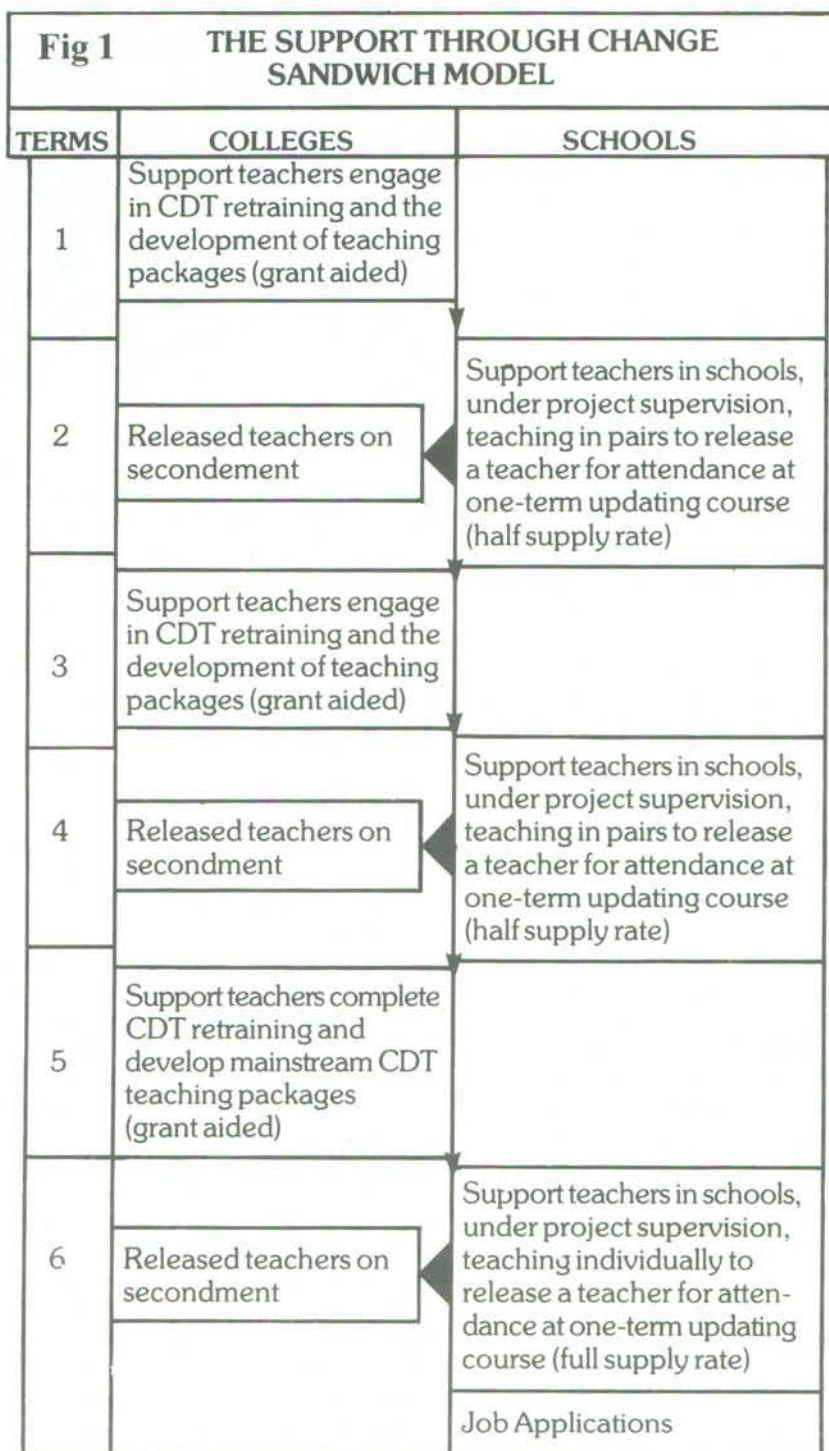
A corrective strategy emerged at the conference. It was proposed to recruit non-CDT supply teachers, develop 'support packages' to enable non-specialists to teach aspects of CDT and to train the supply teachers to use them. The idea was warmly received and a complex chain of negotiations quickly followed. These initially involved the Manchester LEA CDT Inspector, who later became the Project Officer, the North West TRIST Adviser and HMI; later, representatives of six other LEAs, three Colleges of Higher Education and a University were drawn in. This enlarged group came to form the North West CDT Support Through Change Consortium. It extended the original conference proposal to include the conversion of the supply teachers, over two years, into CDT teachers.

Aims and Strategy

After seven months of intensive planning, the project began operations in June 1986 with TRIST funding. It aimed to:

- recruit qualified teachers from non-CDT backgrounds, and retrain and employ them as specialist supply teachers to cover the one-term secondments of CDT teachers;
- develop innovative college courses which would build upon the diverse experiences of the recruits to retrain them;
- stimulate curriculum development in participating schools;
- determine the potential of the project's strategy for other regions and shortage subjects.

The two year multiple sandwich model shown in Fig. 1 was devised to achieve these aims.



PROGRESS

Administration

The City of Manchester LEA acts as the host organisation for the receipt and distribution of funding. It has seconded four teachers to form the project team, and its CDT Inspector is the Project Officer.

The project is overseen by a Consultative Committee, chaired by the Dean of the Faculty of Engineering at the University of Salford. Its membership includes CDT advisers from the participating LEAs, Heads of CDT Department from the three Colleges, the project team, representatives of the University and two HMI observers. The Committee aims to:

- advise, support and promote the scheme through professional contacts;
- oversee and maintain quality of operations;
- consider the future potential of the scheme;
- oversee evaluation.

Its more detailed tasks include to:

- contribute to the recruitment of support teachers;
- liaise with, support and advise the Project Director;
- contribute to the development of teaching packages;
- contribute to the training programmes and monitoring of school practice.

The Project Director's role includes to:

- organise, maintain and administer operations;
- oversee recruitment of support teachers;
- induct and lead teacher advisers;
- liaise with all participants from a communications centre at the University of Salford;
- contribute substantially to the training and supervision of support teachers;
- monitor finances;
- disseminate findings.

The team is supported by a full-time secretary who runs the communications centre.

A teacher adviser is based at each of the three Colleges and has oversight of project operations in one area of the consortium. This role includes contributing to:

- support teacher recruitment;
- the development of curriculum packages;
- planning, liaising, troubleshooting;
- the training and supervision of support teachers.

Recruitment

The Director took up appointment in June, established a communications centre in the University's Department of Electronic and Electrical Engineering, and designed a recruitment strategy. The teacher advisers and secretary were then appointed and the project had to develop extremely rapidly: in each of the Colleges, June/July were very late for course design and student recruitment. Accordingly, publicity and student recruitment were largely carried out from the communications centre.

Between thirty-six and forty-five support teachers were sought, to be distributed evenly amongst the three colleges. Originally, it was assumed that the consortium LEA supply lists would reveal potential recruits. As the project got off the ground, however, the supply lists had been denuded by other schemes, notably TVEI.

Publicity was fairly extensive. Advertisements were lodged in North West newspapers by an advertising consultant. National advertisements were also placed, job centres were notified, a mail shot was run, and LEAs were asked to publicise the scheme in their national bulletins.

This publicity, together with intensive telephone counselling, led to the recruitment of 43 support teachers. This figure dwindled to 36 by September as 7 candidates found they could not afford to live on the surprisingly low grant aid offered.

Two hundred and thirty two enquiries were processed. Given the late advertising campaign, this was taken to indicate that a substantial amount of interest in retraining exists in the North West. A questionnaire aimed at the 166 people who enquired but did not apply, drew a response of 90 (54%). 51 of these were female, 39 male. The responses suggested that:

- there is a significant number of qualified teachers in the North West, many of them women, who are interested in retraining for CDT in this way;

- whilst the three terms of intensively supervised school experience would be valued by many, particularly by people who had been out of teaching for some years, for some, two years was too long a commitment to make without a guaranteed job at the end;
- financial assistance via means-tested discretionary grants was inadequate to attract a large number, particularly single people or people whose spouses were not wage earners;
- domestic circumstances discouraged some interested people; more flexible arrangements including part-time attendance and partial correspondence study would have been attractive to significant numbers particularly women.

The success of this intensive recruitment activity was made possible by good secretarial support and maintenance of interviewing and counseling procedures right through from July to September. Although the scheme has recruited well, many of the support teachers are dissatisfied with the poor financial support they receive. Many are currently studying with a partial discretionary grant, no mature student allowance and no travel allowance for school experience. Moreover, some recruits never joined the scheme. One of the keenest and ablest of these withdrew days before the course began when she learned that her grant offer of £240 per term was not even sufficient to pay for a childminder!

The Support Teachers

Forty-two per cent of these are women. Despite their lack of CDT background, many are of a high intellectual calibre, have a variety of experiences pertinent to designing and fulfilling human needs, and are well motivated towards a full-time CDT career. They welcome the three terms of heavily supervised school teaching as a way of bridging the gap from their background to CDT.

The Retraining Courses

Each of the three Colleges had long and successful experience of retraining non-CDT teachers to teach CDT via one-year courses. Any new course developed with the Colleges clearly had to receive appropriate accreditation. Given that

courses at two of the three Colleges would be accredited by universities, and that developments needed many months to be considered by the various committees, existing one-year course frameworks had to form the basis of the retraining courses. At one of the Colleges, however, where a college rather than a university certificate is awarded, more scope was available for course development.

Each course had to balance the retraining aim with the need to develop and prepare teaching packages for subsequent school supply experience. Despite the rapidity of development, an encouraging balance has been struck between tried and tested College course units and new ones tailored to the needs of the support teachers.

Some problems did surface in term one, however. Particularly, there was felt to be an overloading of content, as school-based curriculum development was added to an already full course and some CDT project work of an open ended nature was set on the assumption that the support teachers had a deeper repertoire of 'pre-project skills' than they actually possessed.

The diversity of the support teachers' background created the sort of teaching problems often associated with mixed ability school teaching conducted without appropriately sophisticated resourcing and classroom management. A consultant has recently been appointed to one of the Colleges, on an MSC sponsored contract, to:

- develop tools for the diagnosis of support teacher learning needs; and
- suggest modified strategies for the acquisition of skills by teachers from such diverse backgrounds.

The courses began with a common conference hosted by the University. This aimed to boost the support teachers' self-confidence by:

- creating a limelight atmosphere;
- deliberately emphasising the strengths and experiences the support teachers would bring to CDT's focus on human needs;
- packing it with exciting presentations chosen to reveal the rich complexity of CDT.

Following this, support teachers started their college courses.

School Based Curriculum Development

Initially, the support teachers lacked skills. The project assumed, however, that major elements of CDT can be taught using non-resistant materials and 'low technology'. To facilitate this, support packages are a major feature of the project model.

Members of the Consultative Committee were originally to have played a prominent part in this. Given the speed of development needed, however, this proved to be difficult during the first term. As a substitute, a group of Heads of Department from the host LEA were brought together to engage in a major brainstorming activity. From the ideas generated, the project team developed school based 'packages' in areas such as: 'Movement Incorporated', 'Futuristic City 2020 AD', 'Environment Games', 'The Power of the Image', 'Logos', 'Packaging', 'Powering Vehicles', 'Structures', 'Pop-up Mechanisms'.

Insufficient time was available to develop these as originally envisaged, but they were offered to support teachers in term one in such a way as to enable them to perform satisfactorily in schools during term two. Signals from the majority of schools indicate that the support teachers' range of ideas, ease of implementing projects and general teaching competence are being warmly received by Headteachers and Heads of Department. Curriculum innovation is thus being stimulated in participating schools.

For the future, the project team has developed a two stage development process for the school based packages. Stage one is aimed at the support teachers. It is intended to:

- outline the nature of the theme;
- take support teachers through the materials and activities at appropriate levels;
- identify teacher skills needed to teach it and efficient ways of learning those skills;
- evaluate the theme's potential for school teaching, identifying problems, possible extensions, relationships with the rest of the course and school curriculum.
- promote brainstorming and course preparation for stage two.

Stage two is aimed at school pupils. For each theme it will include:

- tested classroom support kits;
- a thorough outline of the 'package's' aims, objectives, strategies and evaluation, and particularly how these can be adapted and developed to suit specific schools, classes and teachers.
- appropriate stimulus materials, teaching aids, data and skills information, aids to pupil self-assessment, alternative routes through the theme, lists of resources needed and suggestions for pupil activity.

Both the project team and College staff would like to see greater collaboration in future developments. Certainly, collaboration between the team and host LEA personnel has paid dividends. Detailed plans have been laid to extend formal collaboration between one College and the project staff. It is hoped to draw advisers into this collaborative endeavour. This kind of development should significantly embrace the productive, but nevertheless ad hoc, collaboration of the project's first term.

School Placements

There are some parallels between College teaching practice and placements, but the latter is much more complex. Firstly, schools are identified by LEA advisers primarily on the basis of which teachers in their authority, would most benefit from a one-term updating course. This choice is partly determined by the general secondment negotiating machinery within LEAs: this varies in practice and in the time of year at which decisions are made. The choice is also determined by the in-service training needs of the school as identified by the Headteacher and the Head of CDT Department, by the school's degree of timetabling flexibility, and also by the professional and domestic circumstances of the potential seconded.

Secondly, support teachers have to assume responsibility for, and to teach, classes effectively, whereas student teachers are largely under the supervision of the school's teachers. The placement of support teachers was therefore very much influenced by the extent to which their particular skills could be dovetailed into particular

schools. Minimising travel distance was also a fundamental consideration.

Thirdly, if the placement falls through during term, the school loses its specialist CDT cover and support teachers lose their income.

It can be seen, therefore, that school placement is a complex and sensitive issue within the scheme, and perhaps more than any other aspect, has been a major consumer of project team time.

Advisers in the consortium LEAs, plus Lancashire and Tameside (who are grant aiding a number of support teachers), were asked to identify schools. The project team then negotiated placements. By the end of term one, these had been finalised satisfactorily, and the following problems had been overcome:

- a small number of teachers refused secondment because they felt the support teachers could not cope with examination classes this early in the scheme;
- three support teachers dropped out for financial reasons at the end of term leaving some schools with a single teacher rather than a pair;
- in schools where falling rolls had reduced the size of CDT departments, the released teacher was occasionally teaching other than CDT subjects.

It is too early to gauge the effectiveness of the support teachers in schools. Some consortium advisers have visited Headteachers and observed lessons, and are quietly impressed. Teacher advisers are effectively supporting the teachers with help from College tutors. Many pupils are responding well to exciting CDT activities, which, in some schools, contrast sharply with their routine diets of metalwork, technical drawing and woodwork. The general impression to date is one of success.

ISSUES

Collaboration

The project strategy is radical to tackle intractable problems of CDT teacher supply and updating. Normally, the institutions within the consortium work separately or even in competition, although collaboration frequently occurs. The project consortium has drawn the institutions together into a powerful regional collaborative

framework. It has achieved a 'multiplier' effect from this unity as the consortium is able to achieve more than the sum of its parts.

The project was set up to precipitate and maintain collaboration. This has been achieved. The mechanism was partly designed and has partly evolved pragmatically as events and groundrules have changed.

Bringing about such collaboration has been time consuming and has been a major task for the Project Director. Given that each institution has its own pressing needs, negotiation and compromise have been essential. Difficulties have arisen where changes created by the project, e.g. course redesign in the Colleges or awarding of discretionary grants to teachers already qualified, in some LEAs, have necessitated energetic orchestration through complex committee structures. Also, regional or nationally perceived needs, such as updating the CDT teaching body, do not always coincide with locally perceived needs. In times of economic restraint and the harsh prioritisation of spending, some of the goals of the project have been necessarily curtailed. In particular, the confusing transition from TRIST to GRIST funding has clouded many issues within the consortium, but as GRIST procedures become clearer, so do these issues.

On the positive side, collaboration in the North West consortium has:

- raised the profile of CDT at senior office level in some LEAs and enabled advisers to draw modern practice to their attention;
- created a limelight atmosphere which has stimulated some Headteachers and CDT teachers;
- enabled Colleges of Higher Education to pool ideas to enhance their own courses and school based curriculum development;
- strengthened communication between LEA CDT Advisers and College CDT Heads of Department;
- enabled a complex placement of supply teachers in schools in ten LEAs to proceed relatively smoothly;
- and not least, attracted good calibre teachers to retrain for CDT, 42% of them being women.

Collaboration within the project was heavily dependent initially on the 'product champion' (Project Officer) who managed the early formulation of the project. Thereafter, the project team has constantly intervened to enhance and maintain communications. Success in the collaborative venture depends on the extent to which the team can recognise and come to terms with the ambience of each participating institution, and the goals of its members; work to minimise hindrance to the achievement of the goals, or even enhance this achievement, whilst propelling the wider goals of the project.

The CDT Teacher Shortage

The project was set up to (a) facilitate the updating of existing teachers and (b) tackle CDT teacher shortage. Since its inception, however, there has been some confusion about the precise nature of this shortage.

CDT advisers in the North West generally accept that there is a 'qualitative' shortage, particularly as CDT has changed rapidly in the last decade, leaving behind many teachers who need to be updated. Some advisers also have teacher vacancies. Some currently have no vacancies, but are concerned that some job advertisements only attract one or two applicants. Major national initiatives such as TVEI are creating some uncertainty about future manpower requirements. It is also believed that a wave of retirements from CDT is about to hit parts of the region.

Accordingly, the project is poised to conduct a manpower analysis and forecast exercise with a number of LEAs. This is intended to provide hard evidence for recruitment to teacher training courses.

Retraining

Five of the original thirty-six support teachers have left the scheme, largely because of extreme financial hardship. Two of these, however, also felt unable to make the transition to CDT teaching.

The Colleges have adapted their methods to match the diverse backgrounds of the support teachers. The teachers welcome the three terms of heavily supervised school teaching as a way of bridging the gap from their background to CDT. Despite the loss of two teachers mentioned above, the

assumption that non-CDT teachers can be retrained for CDT has proved valid.

Women and CDT

The percentage of women on this project (42%) is greater than the national percentage of female CDT teachers by a factor of ten. Many of the women have raised children, and now wish to return full time to teaching. They are highly committed to a future career. They also bring a richness of experience and sharpness of perception which makes them very competent in dealing with design as a means to fulfil human needs. Parenthood and primary teaching experience are important in this enrichment. It is clear that this cohort of women, and future cohorts, will enhance the CDT experience of schoolgirls and contribute to the development of a school curriculum which militates against gender bias.

Curriculum Innovation

The support teachers are now (Spring Term 1987) working in 19 schools in 10 LEAs. Most are releasing teachers for secondment; a few, however, are filling temporary vacancies or replacing teachers who have been withdrawn for

curriculum development. Advisers, Headteachers and Heads of Department are generally impressed with their range of ideas and the competence with which they are implemented. Many pupils are responding well to exciting CDT activities. The project has demonstrated that good CDT experiences can be given to children without recourse to heavy workshop equipment. It also supports the view that schoolteachers can be receptive to curriculum innovation when it can be demonstrated to work in the classroom with their own pupils.

Financial Support for Retrainees

This has been a severe problem throughout. Discretionary grants have been available and have proved to be inadequate to induce a number of able candidates to accept places offered, and to prevent a drop out, due to severe financial hardship, of one sixth of the retrainees who started courses in September 1986. If CDT, and other subjects, actually suffer from teacher shortage, and retraining is a desirable strategy to reduce this shortage, the experience of this project would suggest that a more attractive, and if necessary, differential level of financial support is needed.

The Future

Despite early teething problems, the project has shown that its major aims are achievable. Accordingly, two of the Colleges of Higher Education in the consortium are developing the retraining model for a further intake in 1987. Whereas six LEAs formed the original consortium, almost all of the seventeen North West LEAs are interested in participating in the new schemes. The schemes will not be directed centrally, but a new consortium is emerging which will provide continuing liaison. The University of Salford has offered to continue to provide a focus for liaison between participants in future developments.

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