Technology Teacher Education: implementing Circular 9/92

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DFE Circular 9/92 has willed the end of a strengthened partnership between HEIs and schools but has it willed the means of achieving it? This article reviews the current situation at Brunel University and considers the problems to be faced in school-based initial teacher education

Teacher Education at Runnymede

The education of teachers of technology has been going on at Runnymede since World War II: first within Coopers Hill Training College, then within Shoreditch College and since 1980, within Brunel University. Those years have been marked both by changes — subject identity, for example — and by continuity of an excellence that is recognised internationally.

Initial teacher education (ITE) at Runnymede has always been founded on a partnership between the higher education institution (HEI) and schools. Students have undertaken school experiences including (but not only) teaching practice and to an unusual extent they have found themselves in the hands of school colleagues who themselves trained at Runnymede and continue to visit the university for INSET, MEd. courses, exhibitions and conferences. In recent years a growing number of such school colleagues have become associate tutors of the university, taking on most of the role of tutoring students in school and liaising with campus-based subject-application (professional studies) tutors.

Circular 9/92

Circular 9/92 outlines procedures and criteria for secondary ITE. Of chief importance in the present context are two requirements. The first (school based) is that schools should take over responsibility for training students to teach and for initiating and delivering on their premises the bulk of the non-subject work that formerly took place at the HEI. The second (competence based) is that the preparation of teachers should rest on the development of professional competences: subject knowledge, subject application, class management, assessment and recording of pupils' progress, and further professional development. In respect of the Runnymede tradition, the first requirement is truly innovative, while the second is not.

Implications of implementing the Circular

The first set of implications arises from the requirement for schools to take the lead in ITE, and successful implementation will depend on the extent of teachers' preparedness for new school-tutor roles. Preparedness here implies at least two things: a state of readiness (of having done the necessary preparation, and commanding sufficient resources of understanding, time, energy and support materials) and a sense of commitment.

It is the view of the Secretary of State that sufficient funding can be transferred from the HEIs to the schools to secure the latter's assumption of the leading role in ITE. Some (very few) schools are currently experimenting with such leadership roles with no recourse to any HEI. However, in the majority of cases the challenge seems to be to transfer sufficient funds without thereby causing the demise of the HEI.

A second implication concerns the relationship between general and (subject) specific school-based teacher education. Here the key notion is of subject application. If it can be assumed that student teachers know their subject (and in the case of postgraduate students this will sometimes be a reasonable assumption) then ITE will chiefly be concerned with how to teach that subject to pupils. However, there is much of importance to the student teacher that goes beyond subject, its extension and application. The relationships between such parts of the education of student teachers as well as between subject and general school tutors will need skilful management.

In addition to the 'school based' requirement, the technology specialism is, as so often, a special case. There are particular challenges in delivering school-based technology ITE (developing an unusually wide range of required skills, for example, or helping student teachers achieve safety certification), and these are especially acute in respect of PGCE students with diverse profiles of qualifications on entry.

First steps in implementation

The concurrent pursuit of degree subject study and teacher education has traditionally been considered valuable for the gradual, incremental progress it allowed in subject expertise and teacher competence. At Brunel we have adhered to the principle of student technology teachers working throughout their courses alongside industrial and product designers. This has been in spite of increasingly severe timetable problems in integrating the contributions of both education and subject departments, and has inevitably entailed compromises.

Circular 9/92 requires student teachers to be away from the HEI for much longer periods

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than before; hence, with its introduction, course-long concurrent study with design department students has become impossible. The decision to shift from a concurrent to a two plus two mode (i.e. two years of subject study followed by two years of teacher education) has been taken somewhat reluctantly for the reasons implied above and because it has meant the demise of the pioneering and popular three (extended) year BA programme. However, apart from the relief afforded to timetablers, gains are that the timing of teaching practice experiences within periods of school-based learning is now unconstrained, and that it should be possible to recruit into the second two (ITE) years students with HND qualifications or other appropriate prior learning.

A second Brunel response to 9/92 has been the delivery of (subject) training programmes for school tutors (mentors) — the first in July 1993. From this experience has arisen a number of implications of the implementation of Circular 9/92, discussed below.

Issues of Implementation

Aims

Early in our first training programme, school colleagues attending were asked to identify what they considered to be the aims of ITE in general, and of technology teacher education in particular, without reference to either Circular 9/2 or the statement of programme aims built into the Brunel courses. The importance of partners from schools and HEI negotiating common aims for teacher education scarcely needs stating. However, what emerged as an unintended by-product of this exercise was the close identity which emerged between the aims formulated collaboratively by school colleagues with those of the HEI:

> It was noted (1) that the purposes participants identified tended to emphasise generic preparation for teaching rather than a narrower, specific focus on preparation for teaching *technology*. Also that (2) there was strong correspondence with the purposes (expressed as course aims and objectives) of the Brunel initial technology teacher education programmes.[1]

As the school HEI partnership enters a new phase, discovery of this common vision is encouraging, especially for student teachers whose proper nurturing will depend on commonality of purpose within the partnership. Of further significance is that it tends to explode the myth that HEIs peddle various brands of irrelevant theory (often identified as of 1960s origin) whereas schools would take a no-nonsense, feet-on-the-ground, back to basics approach. There is no space here to take up the implied theory issues beyond noting that any approach to teaching and learning rests on one theory or another, and hence it is important to make that theory explicit so it can be interrogated; that, as Kurt Lewin once put it, there is nothing so practical as good theory[2] and that, to echo Barry Hugill's maxim, 'Spare the theory, spoil the teacher'.[3]

Competence-based teacher education

The implications of a competence-based approach to teacher education (CBTE) have been much examined in recent years, especially since the publication of Circular 9/92. Issues include:

- the meaning of 'competence'
- how competence relates to 'performance' and the knowledge, understanding and attitudes that underpin it
- how far general competence is merely (or more than) the sum of a number of particular competences
- the lack of relationship between different (e.g. person-related and task-related) types of competence
- the problem of generating an agreed list of competences for a profession that is part art, part craft, part professional activity and yes, part labour[4]
- the danger of CBTE encouraging an excessive emphasis on observable, measurable teacher skills and a correspondingly narrow view of what constitutes teacher competence
- the challenges in view of all the foregoing of appropriately assessing competence.[5]

In our recent experience, school colleagues have tended to stress that whilst competence in the workshop teaching of technology is a vital — indeed, the core part of the teacher's contribution — nevertheless there is a great deal more to being a teacher than this alone. The commonly expressed view is that teachers must be prepared to contribute to the running of the school generally; to take part in

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whatever form of pastoral system is in place; to interact effectively with parents[6], and to take part in professional development work in school and in professional debates in subject associations and beyond.

Given all this, and given also the indications that resources for in-service teacher education once provided by the majority of LEAs have been reduced as their powers have been stripped away, so ITE has increasingly to set teachers up for life! Hence, beyond short-term, instrumental emphases, helping student teachers develop sound understanding and defensible philosophies of teaching and learning (underpinned by an understanding of how children learn and an appreciation of the social context in which they do so) is ever more important. (There are already suggestions[7] that the greater emphasis (in an earlier wave of teacher education reform) on student teachers' own academic studies at the expense of study of child development is producing teachers whose understanding of the latter is so poor that they are unable to control children in the classroom.)

Schools taking the lead

There is scant evidence that this is happening in genuine partnership arrangements although there are cases where special funding is available, or where schools have urgent (e.g. falling roll) needs to broaden their portfolio of activity in a bid to secure their own position.

Our own consultations with subject heads of department show clearly that whilst they are willing to continue to co-operate with HEIs as they have done for many years, the prospect of them taking the lead is a chimera. As they struggle to bring themselves and their colleagues into line with every new challenge of the National Curriculum and its assessment, to cope with teacher appraisal, records of achievement and the implications of LMS or GMS, and to play their part in marketing their schools in increasingly cut-throat competition for pupils with all this, they simply do not have time. What schools are telling us is that it is *we* who must take the lead in providing the academic aspects of detailed planning, assignments and assessment arrangements; that the most we can expect from schools is that they will join with us in their mediation to student teachers. It is on this basis that we are having to develop our programmes to meet the criteria of Circular 9/2.

For all this to take place it is of course vital to assert the importance of partnership. Our training days have demonstrated this. The frustration of knowing that funding is unlikely to allow this on a regular basis is clear, but both school and HEI staff have pronounced the experience invaluable. Partnership had pre-dated Circular 9/92 at Brunel: for more than five years we had had a growing number of 'associate tutors' who not only acted as consultants but carried out duties in their own schools which reduced to a minimum the need for visits by HEI tutors.

The duties of the school co-ordinating tutors involve:

- liaising with the HEI on a regular basis
- liaising between subject and general school tutors in setting up suitable timetables for students and monitoring progress
- arranging for groups of students to be able to carry out school-based learning: that is, *in school* to investigate, shadow, observe and otherwise learn about their subject and its application, and about education generally what, traditionally, they would have learned on campus
- expending time and effort on tutorial help, lesson observation and assessment.

One estimate is that this will need to involve at least an hour per week per student, and the sums suggest that the cost of more time devoted to the job would have to be covered by the schools own budget. In our PGCE distance-learning course arrangements, schools are contracted to provide half a day per week, or equivalent. Just how demanding the job is if done properly may be inferred from the decision of Harrow School to withdraw from the London Institute of Education scheme and the warning from the Institute's director that several schools are expressing similar reservations.[8]

The relationship between general and subject-specific mentoring

In this respect technology — like science — represents a special case. Arguably, the classroom-based subjects, whilst having their own teaching and learning characteristics, nevertheless share a good deal in terms of class management and teaching technique. Some of this carries over into workshop teaching, but

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much does not. The workshop, when expertly run, can offer a less formal learning environment while remaining under firm control. Informality must be firmly distinguished from licence.

HEI tutors (whether or not they are technology specialists), with long experience of visiting school workshops will be well aware of various workshop management styles, pitfalls and opportunities. Given its open-endedness, there are particular issues — those concerning structure and differentiation, for example — that are peculiar to technology teaching. Not all visiting tutors from other curriculum specialisms will understand this; nor will all *school* tutors with only classroom (as opposed to workshop) experience. Hence there is a need for student teachers to be visited by specialists as well as by generalists: to establish what is (or is not) going on, and to decide what needs to happen. For a student to be given confusing — or worse, contradictory — advice will be unacceptable. Similarly, specialist input will be essential to the proper assessment of students.

Clearly, there are aspects of the formation of a professional teacher that are in no way subject specific. Teachers will need understanding of the pastoral system in schools; they will normally be expected to involve themselves from Day 1 of their salaried career in this work. Furthermore, given the integration of many children with special educational needs into mainstream classes, there will be a need for considerable understanding in respect of them. Any serving teacher could add a dozen further examples.

It is in such important work that generalist mentors will play a key role. They will often be people who, through training and experience, will be the right persons to offer guidance, information and support. However, none of the foregoing is meant to suggest that there can be a neat division of labour. Matters like student teachers' class discipline will need to conform

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with school policies and there will be issues where absolute consistency is needed — be they related to playground, classroom or workshop.

The training needs of school tutors

HEIs (the awarding bodies) need to be confident that selected school tutors are effective teachers with experience of school management — if not as heads of department or faculty, then at least in the context of responsibility for work beyond their own teaching. Appropriate personal qualities and skill in working with adult learners will be similarly essential. Thorough familiarity with the prevailing National Curriculum Technology, experience with existing and new GCSE syllabuses (and in some cases, with A level, A/S level and GNVQ) — all these will be important. Furthermore, school tutors will need to have mastered the processes of assessing NC Technology as these are proscribed at any particular time. Finally, the school tutor must be no stranger to the issues of Information Technology — at least as these pertain to NC Technology.

As if this were not enough, those venturing into teacher education need to be not only effective practitioners in their own right, but also to have analysed the nature of classroom and workshop practices. They need to know why they do the things they do and how to make that understanding available to student teachers. They need to be able to predict what would happen, for instance in terms of classroom management, if alternative courses of action were adopted. They need understanding of how far pupils' learning experiences need to be structured or left open and how mixed-ability challenges may be met in the potentially hazardous workshop environment.

At Brunel, we recognised the need to involve school tutors in two full days of discussion, emphasising that this was two-way traffic. However, it was equally clear that the job had been started rather than completed: further visits will be needed to develop the dialogue, and there is a need for further, extended sessions on campus. Much can be accomplished through high-quality paperwork, drafted and redrafted in the light of continuing professional dialogue.

Transfer of funding

The viability of education departments to continue ITE work represents a considerable challenge. On the one hand, the extent to which any education department can earn its living through in-service training for teachers and offering higher degree programmes is increasingly limited in these times of dwindling resources. On the other, the cash available for distribution among contributing schools is simply insufficient for the job to be economically attractive to schools.

The placement of students

The development sessions at Brunel indicated that about an hour a week of school tutor time would be released per student, and whilst this would be feasible if a critical mass of students were to be gathered together, it would be insufficient in a given subject area.

At the time of writing, we at Brunel have recently completed a marathon telephoning operation. Three hundred calls requesting school places have been made on behalf of 150 student technology teachers (undergraduates and postgraduates), all of whom must now spend longer in schools. Fortunately, most schools are still willing to help, though chiefly in traditional rather than 9/92 ways.

A major concern of HEIs is the possibility that too few schools will agree to provide 9/92 places for all students already on course. For those institutions operating two plus two courses and thus thinking forward to autumn 1996 this is something of a time-bomb. It is difficult, to say the least, to be sure of the policy and circumstances and even the secure existence of schools two years ahead, and this presents dilemmas in terms of recruiting.

Achieving a cost-effective mass of students

Althought the issue of student-staff ratio is central to school-based ITE, it appears to have been largely overlooked in the drafting of 9/92. HEI tutors teach 1520 students in workshops, perhaps 2040 in seminars and sometimes over 100 in lecture rooms. It is difficult to imagine any responsible school management team or governing body accepting into their schools groups of our students of this size *in a particular subject.* On the other hand, there are general topics that can be handled in schools with larger groups of students drawn from different subject specialisms, with considerable

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profit accruing from the different subject perspectives of such students.

'Clustering'

It would clearly be highly desirable to cluster teacher practice schools, so that on occasions students could be collected together in a particular school to receive subject-specific information and training. However, there will be logistic challenges here. There will be the problem of what the students are missing while they are away from the school on such occasions, and there will be travel difficulties where students lack their own transport. At Brunel, for the moment we have agreed to circulate to all technology experience schools details of where *all* our students are in schools. Teachers have agreed to explore what might be feasible for clustering. It would, however, be more logical to have them back on campus where all this could be done more efficiently, with staff and equipment developed over many years for just such a purpose.

Accreditation

In the foreseeable future, HEIs will continue to be responsible for the quality of the teaching and learning in ITE programmes, in partnership with schools. However, it will be the reputations of the HEIs that are tied to the validation of the eventual qualification. Within a university, this is not a matter for any one department alone. Universities work through corporate management: joint responsibility is vested in senates, degrees committees and faculty boards, and external examiners of experience and academic authority are appointed to check quality through a sampling process. As teacher education work becomes more decentralised, this will become increasingly complicated, necessarily involving more and more visits by experts from various centres to collaborate with experts in schools in order to arrive at workable forms of quality assurance. Such travelling and visits are expensive.

Travel and accommodation

Many student teachers need accommodation on the university campus in order to follow their courses. Where an HEI is located in a major conurbation such as London, with good public transport, it will often be feasible not to offer living accommodation and to require students to use public transport to get to schools. However, away from the conurbations it is less

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simple. All HEIs are short of residential accommodation as a result of central government pressure to get more students into higher education. It is at least imaginable that the senior management of HEIs will decide to give low priority to students who are on campus for but a small proportion of their time, and where most of the cash to teach them is diverted elsewhere.

HEIs have the responsibility to meet at least some of the students' travel costs for school experience, whether public or private transport is used. As student numbers increase, the area over which students are spread enlarges and inevitably, transport costs grow. Furthermore, as students spend more time in schools, transport costs increase in proportion. In fact, the sums will come to more than the total money available. The situation is fast approaching where it may be more sensible for students to live near their current school-experience schools, and travel to the HEIs instead.

Technology skills training

Whilst all PGCE technology students recruited by Brunel have valuable aspects of technology in their background, very few indeed have a first degree which gives them the *whole* of the subject range represented even by CDT, together with the required IT elements. It is vital, as the students insist each year, to augment their subject knowledge by filling the gaps. Given that there is statutory safety training for workshop teachers, the time students may remain on campus is quickly used up.

Loss of industrial placements

When the fundamental design of the current undergraduate courses was settled in 1980, education tutors were generally sceptical of the value of industrial placements in such courses, arguing that school experience was the appropriate kind of industrial placement for intending teachers and should count as meeting the absolute sandwich requirement of all Brunel's undergraduate courses at that time. However, the placement programme has been popular with student teachers and their subsequent employers and has brought a greater awareness of the world of industry into student teachers' technology teaching, into their reflective essays on education topics and, sometimes through sponsorship, into their (sometimes award-winning) major project work. It is to be particularly regretted that under 9/92, industrial placements will no longer be feasible in our BSc programmes.

Conclusion

Circular 9/92 has willed the *ends* of strengthened HEI school partnership and improved standards in ITE and of greater precision in gauging student-teachers' competences. However, in leaving it optional for schools to participate in the provision of far more school-based learning than heretofore, and in leaving HEIs with reduced power yet undiminished responsibility for the achievement of improved competence among beginning teachers, the circular has scarcely willed the *means*.

Concern about the policy expressed in Circular 9/92 which inaugurates practices of undemonstrated and unresearched effectiveness has been voiced by a succession of professional organisations and by many teachers, as we know from contact with our partner schools. A trawl of the growing 9/92 literature suggests that HEI colleagues tend to be less than enthusiastic about the prospects for implementing 9/92. Even some who at the outset expressed enthusiasm for the new approach to teacher education appear now to have modified their views. For their part, some schools have voiced the fear that their contributions will not be sufficiently recognised. They fear that HEIs will have merely to use them and will be unable to provide the necessary level of support.

Whether 9/92 will prove minimally feasible i.e. whether sufficient school-based weeks will be made available for all the student teachers who must have them (leaving aside the question of the *quality* of the experience) is at present a matter of uncertainty. OFSTED's work in monitoring the quality of ITE under the new arrangements will be vital, and it is not inconceivable that a Dearing-type review will be needed, sooner rather than later.

What is not in doubt, however, is the determination of HEI and school colleagues to make the system work as well as possible for those who offer themselves for training and whose quality has so impressed us in the current round of recruitment. The long technology teacher education tradition associated with Runnymede and the generations of teachers and their pupils who have benefited from it demand no less.

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