

Planning and implementation of Key Stage 3 projects

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Statutory implementation for National Curriculum Technology Key Stage 3 for most of Surrey's secondary schools starts in September 1991. With this in mind we — a team of three advisory teachers, two from Design and Technology (HE and CDT) and one from Bus Ed — contacted all Surrey's secondary schools through the April Design and Technology (1990) Newsletter, offering our assistance with the planning of an experimental Key Stage 3 Design and Technology project. This would take place during the Summer term in preparation for implementation in September 1990, for which our support was also offered. Nine secondary schools responded to our invitation.

As advisory teachers our main aim in working alongside Design and Technology teachers in secondary schools was to function co-operatively as a team from different subject backgrounds, thereby encouraging teachers (also with different backgrounds) to work and plan together to achieve a common purpose — Design and Technology Capability.

During the Summer term we attended meetings in the respondent schools, with the intention of satisfying the aforementioned aim and some of our already agreed objectives (copy enclosed) which we anticipated would be useful as our guide in assisting teachers with their planning in readiness for September's implementation.

This article concentrates on our observations and our experiences of working alongside Design and Technology teachers at their planning sessions and during implementation, highlighting some of their responses and concerns in meeting this new challenge.

Of the nine schools who responded initially to our invitation, two schools that were having serious internal staffing problems were forced to drop out early on. As the term progressed three more schools were unable to continue with the project for similar reasons. At the end of that Summer term, then, there were four remaining schools that had successfully completed the term's planning (none of

these schools being entirely without staffing problems) in a state of readiness for implementation with their new Year 8 intake at the beginning of the Autumn term.

We wrote to the headteachers of these schools, asking for a member of the senior management team to attend the planning meetings (see objective 5). The headteachers accordingly named a manager with whom we could liaise and who also had been given responsibility for overseeing the development of Technology, as well as a co-ordinator responsible for Technology. We learned subsequently from these co-ordinators that it appeared as though their headteachers viewed this new responsibility as an extension of duties rather than as promotion. No analysis of the nature of this responsibility or further training was offered. Three of the four co-ordinators were heads of CDT and one was head of HE.

The Technology faculty meetings we went to were, in three of the schools, held at lunchtimes or after schooltime, usually on an irregular basis (slotted in between other meetings), and were attended initially by teachers from most or all of the five subject areas of Bus Ed, Art and Design, CDT, HE, and IT. The named members of the senior management team overseeing Technology also attended a few initial meetings at the beginning of the Summer Term. Although they did not attend subsequent meetings the co-ordinators kept them informed of events via agendas and minutes. Frequently, though less formally, departmental meetings were also held during the planning and the implementation terms to deal with developments and the day-to-day operation of the project. The dual partnership between CDT and HE teachers featured strongly both in these meetings, and in the planning and subsequent delivery in September.

Co-ordinators were forced to learn quickly how to structure their faculty meetings carefully, manage the

proceedings and use the time effectively. We attended a faculty meeting at one school which consisted of twelve teachers from the five subject areas plus a Deputy Head and three Advisory Teachers. For some Heads of Department, to chair such a meeting without the appropriate managerial skills was a daunting prospect.

Other skills and qualities required by the co-ordinators became apparent during faculty meetings. The nature of their role demanded of them the ability to create a cohesive team of teachers, many of whom were coming to these meetings from different autonomous subject backgrounds. Meeting, planning and possibly teaching with different teachers required some major changes from their normal pattern of operating, and sensitive handling by co-ordinators.

Apparent during the initial planning meetings was the positive attitude adopted by most teachers and their desire to make a success of the experiment. With the National Curriculum looming, these teachers appreciated both the need to change (although they did not always like this), and also having been invited to take part in the planning meeting. They were, in the main, enthusiastic about discussing how their subject specialism could make a contribution to the projects.

Coincidentally, all four schools suggested at some point during the meetings that contributory subject titles should be replaced by a single subject identity — 'Technology', the most common reason being likely confusion of the part of pupils, although one teacher observed that any move to secure parity between contributing subjects could also serve to pacify some teachers. Each of the schools also discussed methods of developing systems of colour coding, pass cards and/or badges for pupils to encourage common usage of the title 'Technology'. This was later held to be unnecessary when it was realised that the current Year 8 cohort of pupils would be following existing GCSE examination options. In relinquishing their individuality as specialists by contributing to

'Technology', some teachers then began to voice deeper concerns and feelings of insecurity during the meetings. They posed some difficult yet very sincere questions, usually to the co-ordinators who were not always in a position to respond positively and with authority.

Other teachers made reference to the dilemma they faced: while being prepared to make the necessary changes, they would thereby 'lose' (as they saw it) some of what they had always known and been used to, but were uncertain of what they were letting themselves in for in the future. Some said they felt a loss of identity, and that they were not too sure of their ground. As the planning progressed they also became acutely aware of the additional skills and qualities that this innovation would require of them.

The early planning meetings consisted mainly of teachers examining methods for developing project ideas and activities, followed by detailed analysis of selected ideas, individual subject contribution and teachers' concerns. In three of the schools a good deal of discussion subsequently took place on the logistics of running the experiment when faced with the ubiquitous restrictive timetable arrangements accompanied usually by the additional problems of room location and appropriate resources; or, as one teacher vividly described it, 'attempting to deliver Technology with one hand tied behind your back'.

The curriculum development position adopted by Surrey's Inspector for D&T, and one with which we concurred and which we communicated at the meetings, was to suggest to D&T teachers that they aim to identify their individual and/or department's existing strengths and practices and build on them gradually. We were not aware of any of the schools completing a comprehensive audit of schemes of work, although the message regarding the 'steady as she goes' approach was considered to be very sensible and was generally accepted.

Having agreed on a context and a framework for an activity, a common strategy for detailed planning adopted by the teachers was to select an area from the Programmes of Study, match these statements with current individual subject schemes of work, and then concentrate on the mechanism for delivery. The teachers generally agreed that although this approach appeared to be somewhat mechanical, resulting in a contrivance of planned activities, they still preferred to try this having heard through the Technology grapevine of alternative 'less controlled' models for delivery. As the meetings and the accompanying clarity of the planned corporate D&T activities progressed, however, so it seemed did the confidence and ambitions of some teachers with regard to the delivery style of their activities and the expectations of themselves and their pupils.

The concept — 'integration' — entered the discussion at meetings around this time, used as a term to describe teachers' collective D&T activity plans. We gained a strong impression that some teachers had a misconception that 'integration' was the measure against which D&T planning could be set to account for success, although identifying more precisely just what was being integrated never became a topic for discussion at meetings.

It is not my intention to go into detail describing each one of the four schools' planned models of delivery. In each case CDT and HE evolved as the main contributors to the D&T activity. The Bus Ed and IT contribution, where it was included, tended to be vested in the same teacher who concentrated mostly on word processing skills. A simple business plan was successfully developed by one Bus Ed teacher (pupils completion of worksheets indicated a high level of understanding) and accepted enthusiastically by the other teachers. Art teachers in two schools made useful contributions to the activity, teaching basic drawing and graphic skills. Each of the schools had 10% timetable time,

usually 2 x 2 double periods at different times of the week. One of the four schools was fortunate in having a committed member of the senior management team who attended planning meetings regularly. He made the appropriate arrangements to have four periods blocked together on the timetable and for teachers to meet and plan during normal timetable time.

The four schools each adopted the procedure for implementation by assembling all pupils for initial input, which, it was agreed beforehand by the teachers despite the hard work involved, it was essential to carry out well in order to stimulate as many pupils as possible. Things did not always go smoothly: one school went to great lengths organising visitors and a visiting speaker, and were left trying to find an alternative when they were let down with little time to spare. Pupils were then divided up into as many groups as teachers and bases available; it was intended that individual teachers should monitor the progress of each of their groups of pupils, although any evidence as to the success of this notion was patchy. At the successful completion of the experiments which were planned mostly on a termly basis, the teachers from the four schools organised and assembled displays of pupils' individual work.

Common Features Arising From The Pilot projects

In addition to our observations and information gained during the planning and the implementation stages, I interviewed and spoke to several teachers individually, including three of the co-ordinators shortly after the completion of the projects. Among the most pronounced features common to the experiments were these:

1. Despite the intensive planning all four schools experienced time slippage during the projects. This problem generated much discussion at the meetings during the implementation term, particularly where the

renegotiation of teachers' original targets and expectations was concerned.

2. Some teachers in different working areas expressed their unhappiness with the repeated amounts of unfinished work on the part of some pupils — usually practical work. They argued for more time to be devoted to preparing pupils before (or during) projects for partially teacher-identified outcomes, by teaching the appropriate and necessary skills.
3. The teachers identified the difficulties with time and with keeping control of the activities and the learning as arising in part from their prematurely increased expectations of pupils in that they allowed them too much freedom with their choice of projects. This was initially deemed to be necessary to satisfy AT1: Satisfying needs and opportunities; on reflection possibilities were recognised of providing tighter structures for pupils to focus learning for future projects while still providing opportunities for some pupils choice, thereby satisfying AT1.
4. We concluded that the experiments would probably not have been completed successfully without the extremely hard work and total commitment by most of the teachers involved — particularly the co-ordinators. As one co-ordinator said to me during the implementation, 'If this is what it's like with Year 8, I dread to think how we can cope with Years 7, 8 and 9 all running concurrently!'
5. With the exception of one school the commitment and interest shown by senior management was sporadic. Their contribution towards the successful completion of the project was considered to be negligible by those teachers interviewed. In one of the schools where a member of senior management was committed to the experiment from the outset, blocked timetabling was arranged to

accommodate increased flexibility, as was the allocation of time during the day for teachers to meet and plan.

Conclusions

From the experience of four secondary schools in their planning and implementation of pilot Key Stage 3 projects a number of conclusions emerge:

1. Even the most committed teachers of D&T are unlikely to be able to continue to plan and work together throughout the Key Stage 3 pupil age-range in such an intense time- and energy-sapping manner as we witnessed. It is unreasonable to expect teachers faced with an ever-increasing workload to have to arrange for themselves planning meetings on an 'ad-hoc' basis. Crucial to the future success of co-ordinated D&T is the opportunity for regular timetabled planning meetings, preferably organised and attended by senior management.
2. D&T teachers do not need to be so ambitious in what they are trying to achieve in the short term. It would be time well spent if a group of D&T teachers led by a co-ordinator were to analyse very carefully the particular situation and circumstances in their schools and then plan for D&T accordingly. D&T can only progress as far as the school's resources and structures allow. An investment of time is also necessary for planning and forecasting the future direction and requirements of D&T in the schools (say, at yearly stages, preferably with the involvement of senior management). Then a case must be put and a suitable response sought from the senior management.
3. One element that appears to be crucial to the whole success of a project is that D&T teachers work for and with each other. This co-operative climate can be fostered by building up individual and team confidence, in part by reminding teachers of A&D, Bus Ed, CDT, IT and HE that a

perception of Technology as a combination of these five areas is incorrect. Technological capability should be achieved by utilising the unique contributions of their individual specialists' areas.

Teamwork should be viewed as a useful method for doing this, not as a way of producing generalist teachers.

4. Even at this early stage in their D&T experience pupils need to be taught certain design and make skills and knowledge to enable them to complete their activities successfully, on time, and to the high standards set by the teacher.
5. Notwithstanding the varying degrees of success experienced by these teachers progress towards achieving capability might be improved if teachers dedicated more thinking time to pupils' learning and understanding of the skills and knowledge associated with designing and making rather than concerning themselves over external constraints like fitting activities into contexts, satisfying all of the term's artefacts, systems and environments, or worrying about the style of the delivery model — at least until they have debated and agreed interpretations or definitions of these ideas and concepts.
6. Teachers' reactions to these curriculum development trials differed. Some spoke of their increased confidence and willingness to build on their experiences for future activities. Others were less positive about the perceived amount of change required without the necessary clarity and support as to the future direction of Technology. One thing is for certain: teachers in the classroom are the only ones that can implement changes. Without their understanding and commitment to the task Technology for many of our pupils will not be the educational experience described in the National Curriculum documents.

SURREY DESIGN and TECHNOLOGY PILOT

Planning and Preparation

Aim

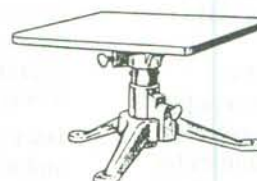
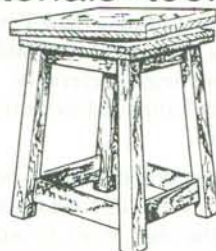
To help facilitate the 'innovation and change' which may be required in Secondary Schools in Surrey as they introduce the Design and Technology capability profile component of the National Curriculum subject Technology.

Objectives of Design and Technology Advisory Teachers

1. To provide information concerning the statutory Orders and their interpretation as regards design and technology capability.
2. To provide support, assistance and advice as requested by teachers of Design and Technology during their preparation and planning for implementation.
3. To assist teachers in planning a pilot/experimental project during Autumn term 1990.
4. To encourage teachers to plan jointly and in detail for the introduction of the pilot project.
5. To act as a catalyst between the Senior Management Team, Co-ordinators and Design and Technology teachers in the preliminary stages or organising and planning.
6. To assist teachers with the production of relevant student work sheets. It is anticipated that a bank of worksheets and 'files' stored on computer disk (using Word) will become available to all Surrey teachers.
7. To disseminate and share information and ideas related to pilot projects between schools.
8. To liaise with other Advisory Teachers or specialists when and where appropriate, but especially:
 - a. ITISS to ensure that Information Technology input to Design and Technology reflects County policy.
 - b. Core NC subjects, — Science, English and Maths
 - c. Cross-curricular themes and directives indicated by National Curriculum Council.
 - d. Industry Links
 - e. Special Needs
9. To supplement development in individual institutions with 'external' information, ideas and views.
10. To provide strategies for monitoring and evaluating projects.

SCULPTORS'

materials~tools~studio equipment



woodcarving & stonecarving tools, arkansas slips & stones, pyrography, clay modelling tools, modelling & carving stands, square aluminium wire, armatures, waxes, clays, plasters, metal modelling tools, ciment fondu, mod-roc, newclay, newplast, polyester & urethane resins, silicone rubber, alginate, latex, vinamold, glassfibre, metal fillers, pewter, low melt metals (for casting into silicone rubber), swann morton, CENTRICAST centrifugal casting & mouldmaking machines



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