

Design Technology in the National Curriculum*

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Let me begin with a health warning. I believe until Statutory Orders are published major changes in schools should not take place, it is a time for thinking, but not a time for decision making. Designers who design without understanding or knowing the parameters are ill advised. The Statutory Orders will be published in late February or early March and then you will know the knowledge, skills and values which must be taught.

I will focus on Design and Technology or to be more precise the profile component Design and Technology capability and address four areas:

1. Why Design Technology is in the National Curriculum?
2. To look at the aims of the National Curriculum.
3. To look at some key aspects of the Working Party report.
4. To look at methods and constraints on implementation.

The first two points are issues which are frequently being lost when developments are being suggested and novel solutions are being made. These will set the scene for the report and the major part of the lecture will look at implementation.

1. Why Design Technology in the National Curriculum?

There are a variety of reasons for the inclusion of technology in the National Curriculum, the working party suggests that it is the 'recognition that the capability to investigate, design, make and appraise is as important as the acquisition of knowledge'. (Para 1.1). This I am sure was a reason but there were undoubtedly others. I believe it was a combination of cultural, educational and economic reasons. I believe the cultural reasons are in the long term the most important as both the educational

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and economic can build on society's appreciation of technological capability. There is obviously the need to develop an enterprise culture in a country which still sees a key role in its economy for the generation of products and resources which can be sold. The enterprise culture is sometimes used to describe a culture that we used to call the technological culture or TECHNIC. I do believe they are the same, the need for a culture which not only develops technological capability in its citizens, but also places at least equal value on those who work in the field of technology, must be built into our education service and I believe government recognised this in putting technology into the National Curriculum. Finally, but no less important, the government also recognised the enormous developments which have taken place in this area of the curriculum during the last ten years, especially in CDT and IT. Both have been dynamic areas of the curriculum and this coupled with developments in enterprise schemes, business and economic awareness and work experience have generated a climate for Technology to enter the National Curriculum as a foundation subject. We should celebrate these achievements and build on them. Who would have thought Design and Technology at 'A' level would have achieved such high levels of acceptability, or that so many able pupils would study CDT throughout compulsory secondary education. That business studies should harness IT so productively or home economics would develop such broad area of work, from work related to the family and child care, and, at the other end of the spectrum exciting work of an investigational nature related to science. If this is something to celebrate then may I also suggest it is not the time to change the playing style, remember few successful teams change style overnight. What they do, if they are professional, is identify their strengths and weaknesses and then build on these strengths and work hard at correcting their weaknesses. The curriculum area of Design and Technology must use such strategies to develop pupils' capability to

investigate, design, make and appraise, while contributing to pupils' economic and careers awareness, stimulating originality encouraging enterprise and emphasising quality.

2. The aims of the National Curriculum

These were set out in the Consultation document July 1987. In summary they were as follows:-

1. Ensure all pupils regardless of sex, ethnic origin or geographical location has access to the same broad, balanced and relevant curriculum.
2. Pupils, parents and teachers have clear objectives of what should be taught and be able to identify progression.
3. Provide a means of checking progress towards the objectives and a means of identifying weaknesses.
4. To increase accountability of schools.
5. To ensure the curriculum offered in all maintained schools is sufficiently common to enable children to move from one area of the country to another with minimum disruption.

Points 1 and 5 are crucial to acceptance of this subject area by parents, industrialists and society at large. If we create Design and Technology as the Heinz 57 variety type of subject in the secondary sector than I believe dangers will occur, and much could be lost. That is not to suggest there is only one way or should be only one way, but it is a warning to stay within the thrust of the report and not try clever ways of interpreting the report so as to fit particular interest groups. I believe that if parents, children and employers don't clearly understand what Design and Technology is in rather simple terms then much of the current progress could be lost in the future. The educational experience will not be guaranteed, even with statutory orders, if the subject becomes over diversified.

3. Some key aspect of the Working Party Report.

In keeping with the spirit of the report I have begun by identifying the context, which I hope I have now very briefly done. We should now perhaps turn to the brief. With all due respect to the DES it became self-evident to me why we need Design and Technology *for all* in the National Curriculum, Peter Wilby in the Independent in May 1988 wrote 'Design fault in the curriculum brief' and in Education the editorial headline was 'Technology — Lift-off for new curriculum group — but where do they fly?' Whatever view you have, one can but congratulate Lady Parkes for producing a report which has been so well accepted by so many educationalists and industrialists. In the Primary sector, teachers like the approach, worry about the demands but see a means of interpreting the programmes of study into their topic work and are not worrying too much about the implementation. This may be simply because science, maths and English is more than enough to worry about at present. In secondary it has developed on one hand a close working together of a range of disciplines, on the other hand a series of fights for curriculum time, control and ownership, and a high degree of unease and concern, some of which I hope to address tonight.

I read with concern a plethora of documents such as 'How to prepare for Design and Technology through your Home Economics teaching' 'Design and Technology and Business Education'. Equally people ask questions like, Design and Technology, can it be all delivered through CDT or Home Economics or Business Education? The answer is hopefully no but the answer lies in the interpretation of the statutory orders, remember the government can only prescribe the attainment targets, programmes of study and assessment arrangements. Many criticised the report for not defining Design and Technology. In fact it has in a most comprehensive manner defined Design and Technology through the very detailed 10 levels of Programmes of Study. The Programmes of Study set out the skills, knowledge and values which are the *minimum* resource required by pupils and they also established the types and nature of the activities which should give a broad balanced Design and Technology activity. Many argue that you can not define the parameter of Design and Technology, so knowledge should not have been defined. I totally disagree, we have not tried to define the parameters, merely a minimum

to serve as a resource for Design and Technology. The Secretary of State suggested the programmes of study offer a sound and comprehensive coverage of the *essential* content pupils will need to tackle. However, I would now add that it is essential that no more is added unless a significant increase in time is allocated. Knowledge outside the prescribed will be distinct to specific pupils and the task they are engaged on. It is important to recognise there is a legal requirement to teach the programmes of study. Frequently teachers are looking at the Attainment Targets in isolation and saying we cover this. I see the programme of study and attainment targets are very closely linked and that is one of the reasons why I support the 10 levels of Programme of Study. Those of us who have been working out in the field with the science programmes of study know the difficulties of referencing and linking with attainment targets.

Briefly let us look at some of the constraints

Para 1.5

In our work on attainment targets and programmes of study we have aimed to ensure that they provide the means by which pupils develop the ability:

- to intervene *purposefully* to bring about and control change;
- to speculate on possibilities for modified or new artifacts, systems and environments;
- to *model* what is required, symbolically, graphically and in 3-dimensional forms;
- to plan *effective ways* of preceding and to organise appropriate resources;
- to *appraise artifacts, systems and environments created by others*;
- to understand the significance of Design and Technology *in the economy* and to *the quality of life*.

Para 1.6

We have been particularly concerned to formulate a curriculum which meets the requirements of the 21st Century. It must contribute to pupils' economic and careers awareness, but *it must avoid narrow vocationalism*. It must stimulate originality, encourage enterprise and emphasise quality.

Para 1.7

Pupils' design and technological activities should be undertaken in a suitably *broad and balanced range of contexts*, covering home, school,

community, business and industry. The *activities* should be *carefully chosen and linked to extend pupils' capability progressively and enhance their confidence in it*.

Para 1.8

Our Terms of Reference described Design and Technology as "*an activity which goes 'across the curriculum', drawing on and linking in with a wide range of subjects*". In the letter conveying his response to the Interim Report, the Secretary of State emphasised the importance of "*a framework within which schools will be able to co-ordinate the range of design and technological activity that is currently undertaken within separate subject specialisms, particularly CDT*". Our attainment targets and programmes of study have been constructed to fulfil this requirement. They are intended to assist and encourage the co-ordination of the knowledge, skills and values necessary for design and technological activities and to be found at present in art and design, business studies, CDT, home economics and information technology. *Teachers of these subjects in secondary schools will need to collaborate in identifying those aspects of the programmes of study which they can cover*, in organising its delivery and in the assessments of pupils.

Para 1.10

Design and Technology has a special relationship with science and mathematics.

In Para 1.12 clear reference to the role of English in developing communication skills in Design and Technology is made and in Para 1.13 there will also be occasions when pupils will undertake design and technological activity which draws on the specialist knowledge and skills of other foundation subjects, particularly History, Geography and Art.

In looking at the attainment targets let me stress two points, firstly they are carefully written with a variety of strands which have been carefully woven together, and secondly that in keeping with the report they should be looked at in a holistic manner. If you look at the summary at the bottom of page eight of the report and then look at the combination of all three you can see they fit well together in a holistic framework. However I believe the key to successful implementation of Design and Technology are the programmes of study. These form the

framework, however it remains for teachers to plan appropriate schemes of work in the light of their particular circumstances and knowledge of their pupils. (Para 2.10) The report stresses that it is the integration of knowledge, skills and values through activities which leads to design and technological capability. The programmes of study are cumulative, in the sense that a higher level programme assumes possession by pupils of the matters, skills and processes in lower level programmes. Where specific aspects of a lower level programme are repeated in similar form in a higher level programme, greater depth of treatment is expected. (Para 2.16) This is an important point which can be easily lost when working in a totally cross-curricular mode. How such delivery methods plan to safeguard such concepts will be interesting to see.

Finally in the annex Para 10 and 11 advice is given on organisation. There is one powerful statement that *all engaged in managing Design and Technology should not forget* 'We do not recommend rotational courses as an appropriate pattern of organisation'. Schools that try such schemes will be devaluing the subject, losing progression and continuity, and be offering an inefficient and ineffective form of curriculum. Such methods look attractive as planning tools, but evidence clearly shows the lack of effectiveness.

4. Methods of implementation, strategies and possible strategies.

I have hopefully already offered some ground rules and significant points from the report. At this stage let me reiterate that first and foremost wait for statutory orders. That by the way isn't a coded message that changes are on the way. I have no idea what NCC is suggesting, all I can say is that I hope NCC do not put more material into the programmes of study without removing some, and perhaps some, and perhaps they have given more thought to key stage 4 which I the working party report found most difficulty with, as may I add will other working groups.

I believe there are seven phases to implementation in key stage 3:

1. Strategic school planning.
2. Curriculum audit of contributory subjects.
3. Curriculum matching to Programmes of Study and Attainment Targets.
4. Decision on the contribution of subjects to Design and Technology and other subjects areas.

5. Organisational structure.
6. Pupil planning charts.
7. Evaluation when up and running.

These seven phases are interrelated but I would argue that 1, 2 and 3 can work together, but should not be narrowly focused. Phase 4 should be isolated from 1, 2 and 3 because it can distort decision making in 1, 2 and 3. Phase 5 is too frequently the issue senior management gets carried away with, and I believe it requires sensitive and clear answers in phase 1, 2, 3 and 4, before action is taken. At the start of the whole exercise Heads must build in an annual review process, not only because the mode may be experimental but also to give teachers unhappy with the new structure a feeling this isn't the last time it will be looked at.

Phase 1. Let me look at strategic school planning.

Primary — There seems to be two possible strategies one is to have stand alone Design and Technology and the second is to integrate Design and Technology as part of the class teachers topic, project or theme work. There is in my mind only one sensible strategy in this field that is one of integration as part of topic work. The opportunities which exist where you are designing and making models of air-raid shelters as part of a topic on the 2nd World War, designing and making lifting and transporting devices as part of a project on the great plague, designing and making display units to advertise sweets or shops etc. In primary I would advocate very close links with science. Firstly because I believe there is a very close relationship and secondly much of the training will need to come from experienced primary ESG Science and Technology advisory teachers. It may interest you to know that the vast majority of primary schools in Lincolnshire are currently formulating their topic work with a view to securing science attainment targets, this I believe reflects teachers initial concern about science. Design and Technology should build from the contexts of these topics, good educational experience for children. It should not be necessary to establish specific topics just for Design and Technology. There are dangers in advocating the close working together through training of Science and Design and Technology. Many ESG Science and Technology projects are naturally scientifically bias, it is essential that when training teachers that they do not fall into the trap that Design and Technology is merely problem solving. In

primary the major challenge will be to harmonise methodology (it is more than that rather jargonised phrase 'good primary practice') with the content requirements in a realistic relevant manner as part of on going topic/theme work. It is easy to glibly say all primary teachers merely need to be trained in the areas of knowledge in which they are deficient. I believe it is essential that training must be almost always process led. The INSET requirement in this field are immense and costly, however it is feasible to deliver and primary teachers who have studied the document welcome the opportunities it offers. Its resource implications are significant, but not beyond the capability of most schools. I read with interest the NUT's views on delaying its implementation, I would disagree, if delayed for one year I would argue much of the curriculum could be lost.

In looking at secondary the strategic school planning needs to address the following questions before doing anything else. These questions should be addressed against a backdrop of LMS (local management of schools) and the cost effectiveness and educational value of Design and Technology in relationship to the whole curriculum.

1. What time allocation can be given to pupils studying Design and Technology? It is vital to note that design and technological activities do need time. Pupils must be given time to explore, experiment and have failure in their work, because it is frequently such experiences which leads to increased understanding. Equally teachers must get to know their pupils so advice and guidance appropriate to the pupils capability can be given. It is essential the Design and Technology does not become a rushed systemised experience of project work with little qualitative experience. Such sterile systems could easily occur with little opportunity for innovation or creativity.
2. If you are to set up a co-ordinated, confederated system, what time can be allocated for co-ordinating activities, meetings etc. If all five subjects are to work together time will need to be set aside. Can it be afforded, remembering the group size problems. Can staff move easily between disciplines, with then health and safety requirements in home economics and CDT? Can pupils move between specialist rooms, when that may mean across sites.

3. What other areas of the curriculum are these subjects also contributing towards. For instance:

3a What role does Home Economics play towards serving P.S.E. and science? Surely as perhaps the most cross-curriculum of all traditional subjects it must work with science and with health education and preparation for citizenship. Is all Home Economics design and technological? I believe it isn't and frankly vital aspects could be lost it tries make the whole subject become design and technological.

3b What is the role of Art and Design and Technology and how does this fit within its role as a foundation subject in the National Curriculum? Surely art is much more than part of an amalgam of subjects contributing to Design and Technology. So how does it function in the dual role? How does its role with the creative arts fit.

3c What is the role of Business Education in relation to Design and Technology, but also in its role to IT and keyboard skills, and economic and industrial awareness as a cross-curricular theme? Should it totally fall under Design and Technology umbrella, could that narrow the contribution, especially if time allocation is very limited?

3d What is the role of IT in Design and Technology compared with its role as a specific attainment target and its service to all other curriculum areas? Are there dangers of IT being seen to be in one subject area group of a faculty?

4. How do other subjects such as Science, Maths, History etc contribute to Design and Technology? The generation of faculty type structure can lead to closing of such important inputs, so mechanisms must exist for input and collaboration.

5. If there is such a thing as an average school with average departments in the five areas do all contribute equal amounts to Design and Technology. I would argue no they don't and that never was the Secretary of States intention. I might argue that they all contribute equally to children's education, clearly some subject areas lend themselves more readily to Design Technology than others. I will return to this later when I look at models.

It would be possible to raise other issues as part of the schools plans, like suitability and proximity of resources, teaching spaces etc.

Phase 2 and 3, I will deal with together although I see them as two separate activities with one leading naturally from the other. The curriculum audit of contributory subjects MUST be an audit of what is currently done, starting with current schemes of work. If this is actually a current record then it will have credibility with colleagues, if it is a statement of what that subject could be doing it could lack credibility — we are all good at saying what we could be doing rather than what we are doing. Such an audit should cover the five closely linked subjects mentioned in the report, but also science and maths, and should give the opportunity for other subjects to take part if they wish. Science and Maths should have already done this as part of their planning for K.S.3 implementation. It would be wise to do each for Y7, Y8 and Y9. Having carried out this to an agreed format a matching exercise with the programmes of study should follow. The mapping for K.S.3 should cover Level 3 to Level 7 inclusive as a minimum. This will illustrate where multiples coverage takes place and where weakness exists, and most importantly whether the progression in the programme of study is the same as in your school work. This leads within phase 3 to three further activities. One, what aspects of subjects currently taught in years 7 to 9 are not part of Design and Technology and have value, in childrens' education. The second relates to design and technological vocabulary and is much harder for professionals to discuss, but must be professionally debated. What do we mean by terms like, systems, mechanism, making, appraisal? Thirdly there must be the expression of where different subject areas want to develop and where they should develop. If the answer is I want to move in this direction because I can fill that weakness, or support this or broaden the context, that is fine, thus enhancing Design and Technology and childrens' educational experience. If however it is merely to save oneself from reduced timetable then no. The co-ordinated, confederated, combined, collaborative, collegiate, or whatever approach to Design and Technology is used, one thing is certain there is not room for passengers, effective use of time will be crucial.

Phase 4 will require decision based on the previous analysis and just like designing it should be interactive and may need to return to phase 1 to reassess the decision there.

Phase 5 is then to look at organisation structures. The most convenient for many

Heads is the faculty. Firstly Heads should not create a faculty for Design and Technology if the rest of the school does not have a faculty structure. If the faculty is the amalgam of the five subjects (Fig. 1), a series of questions must be asked. Is forced encampment a sound strategy, does it lead to resentment? As I have already mentioned what is the relationship with other areas? Is the responsibility of art in the National Curriculum going to be the responsibility of the D and T faculty, what about the relationship of the creative arts in the school? I could go on, the question is how do the other subjects contribute to a programmed way and how do those in the faculty contribute outside the faculty? If all subjects do not provide the same portions of contribution to Design and Technology how do you staff them? The timetabling of this could be a nightmare, with too many decisions been made to fit staff availability than needs of pupils. It is essential that Heads do not just throw staff together and leave them to resolve the problems. Will it inevitably lead to rotational courses or staff having to teach in areas where they are unqualified. In the right place I am sure such structures have value, but I remain unconvinced of their universal implementation.

The second model is what I call the sputnik or satellite model (Fig. 2) perhaps better known as the cross-curricular model. This model suggests all subjects contribute to Design and Technology and out of the combined efforts of all subjects design and technological capability appears. There are many people who support this model and I believe in some way it is more in spirit with the concept of Design and Technology in the report than the faculty structure, sadly cross-curricular successes are very hard to find across a wide range of secondary schools in the English education system and I have little confidence in the success of this model. Its major weaknesses is its control mechanism to generate a constant outcome of design and technological capability and the lack of ownership over a long period of time.

The third model is the new discipline model (Fig 3). Here on one day all five subjects cease and a new discipline appears. Bill Walton CEO from Sheffield wrote in the Education 22 September "Design and Technology is a new area, formed from the others with each making a unique contribution to the whole. In the best practice, pupils and teachers will not be able to identify the individual parts". This reads well until you look a little harder, 'unique' 'not able to identify the

individual parts' these are surely in conflict. I don't want to bore you with the problems of teaching in special areas, or in understanding the complexities the vast range of techniques in the differing specialisms. No one involved closely with Design and Technology would suggest such levels of 'de-skilling' or may I suggest such levels of transfer. Are we to reduce it to a paper, pencil, card and computer simulation activity so all can participate. I believe it is feasible to have Bill Walton's model if I was building the CTC from scratch with money no object and new staff could be appointed. However I would suggest the facilities and environments are far from ideal in the vast majority of English and Welsh schools. I understand from an adviser to CTC that in fact they are finding it difficult to balance their staffing requirements for a new CTC to reflect the reports recommendations.

I believe the way forward is to meet the challenge through an evolutionary model of small steps at a time. (Fig 4)

Stage 1. — start the curriculum audit as suggested earlier. This should evolve the identification of most elements of Design and Technology. Stage 2 has CDT at the centre because frankly I see no aspect of CDT which is worth teaching that isn't part of Design and Technology and if parts of the subject in the audit have no relevance then I cast it aside. The same can not be said for any of the other subjects unless they choose to cast everything else away. Thus they can move in or out further as they develop. This is not to say that CDT should lead or control, what I do say is that CDT has an important role to play in Design and Technology. Phase 3 show CDT has disappeared under Design and Technology. By phase 4 other subjects like Maths and Science may have joined to contribute. The pace of evolving to such a position may be 1 year but is more likely 3 or 4 years. Why do I suggest a slow transition. Firstly I believe all these subjects areas clearly make a significant contribution and the balancing of Design and Technology with contributions to cross-curricular themes and other subjects will take time and if a revolutionary approach is suggested much of the work that got Design and Technology to where it is today could be lost. Until we know about Art and other curriculum issues, how can we make firm and lasting decisions.

However there are more worrying aspects which LEA's need to look at. The first concerns of buildings, and the capital to modify existing rooms, I wouldn't

suggest it was insurmountable, but it requires a significant amount of additional finance. Equally worrying is the long term capital to put teaching spaces together or at least in close proximity. Certainly if the new discipline approach is to be adopted fluid movement of pupils and possibly staff will be required and this isn't possible I would argue across campuses. There are no signs yet of specific ESG grants for Design and Technology in either phase. What about National Curriculum Training money through LEATGS (Local Educational Authority Grants Scheme). My current estimate with reallocation of part of the appraisal national priority to National Curriculum Training in Lincolnshire would still lead to less than £95,000 for Design and Technology in both phases. This compares with 1986/7 when CDT had £67,000 for use mainly in secondary CDT. Thus in a country like Lincolnshire we would allocate probably £50,000 to £55,000 to primary and £40,000 to £45,000 to secondary. The funds roughly one day of INSET per teacher working in the secondary sector, and less in primary. We all know that training for process based skills takes time, especially if staff have little empathy with the concept of designing, making and appraising. Schools will need training in many aspects, including specialist training for Headteachers and co-ordinators.

I realise that the evolutionary model could be described as a traditional way forward. *I suggest this simply because I know that Design Technology can be delivered in most schools through such a strategy*, it isn't the ideal, but I believe the report does build on good practice and that good practice usually, but not always, is well founded in the root of subjects. CDT with contributions from Home Economics, Business Education, Art and IT as well as Science can provide an exciting and valuable experience worthy of being called Design and Technology in the National Curriculum. From September 1990 this will be a statutory subject in Key Stage 1, 2 and 3 it would be wise to move steadily forward, experimentation with elaborate schemes which may not be sustainable in funding terms under LMS are not the way forward. It will be vital to carry parents and employers forward in this new initiative. Some of you may also be surprised that I am suggesting the only subject that gets destroyed is CDT. This is not because my books are out of print, it is because it is at the heart of Design and Technology where it is taught well. However I would also argue that where it

is poorly taught it has no divine right to continue. My analysis is shared by SEAC who have a committee for Design and Technology, one for Art, one for Business Studies and Economics, one for Computer Studies and one for Home Economics, these later three are interim committees, but not one for CDT. So despite the excellent work in CDT over the last decade it no longer has an examination committee, whereas all other subjects have. Recently an excellent CDT Head of Department said "we have all worked so hard to get a viable subject only for you (meaning me as a member of the working party) to have destroyed it, everyone in this school during the last six months seems to be claiming to teach Design and Technology as well as contributing to other areas, should I retire". I recognise the apprehension, but would argue that the government do not intend the educational experiences in CDT to be lost, quite the opposite. They see it as the centre upon which to give Design and Technology a firm root in the curriculum of our schools. But equally one must recognise that Design and Technology is more than CDT when working at its full potential.

Finally let me turn to phase 6 which is concerned with planning children's experiences. This is a complex matter and I think it is appropriate that we take up this challenge. Chris Fowler my colleague in Lincolnshire has produced one matrix and from that I have created a revised model. This isn't as yet field trialled, but exploring its use you may find it summarises my view on Design and Technology. You will note it is not subject focused and it is designed with the programme of study at the centre. It combines planning and progression with assessment, and it links context and activity to knowledge, skills and values. It gives opportunities to show links with core and other foundation subjects. This will be part of two major publications of Design and Technology implementation for K.S.1 and 2 and K.S.3 available late May from County Offices, Newland, Lincoln. Attention A.M.Breckon, Senior Inspector.

Conclusion

I began by suggesting that here is a foundation subject in the National Curriculum which offer opportunities and challenges. The opportunities are clearly present to educate future generations in a manner which should develop a design and technological culture. The statutory requirements will give an entitlement which must not be lost through over experimentation, stretching the

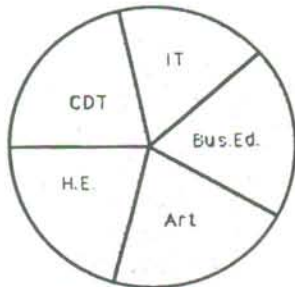


Fig 1. Faculty Model

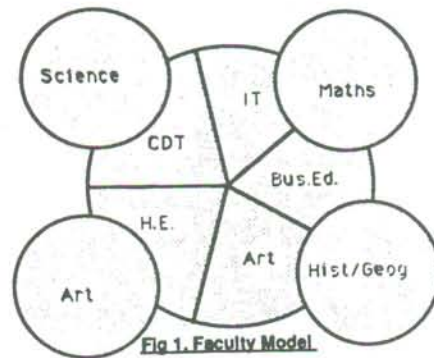


Fig 1. Faculty Model

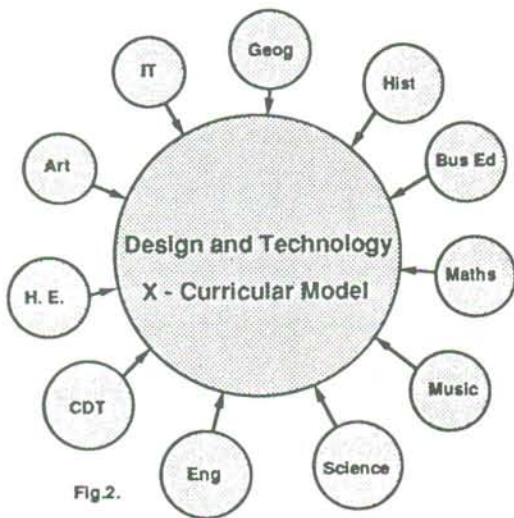


Fig 2.



Fig 3. New Subject Model

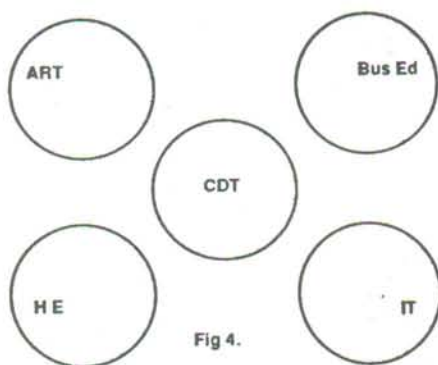


Fig 4.

Evolutionary model for Design and Technology Stage 1.

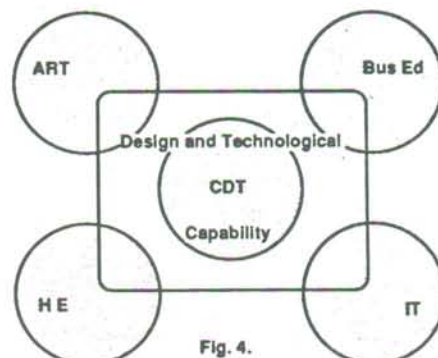


Fig. 4.

Evolutionary model for Design and Technology Stage 2.

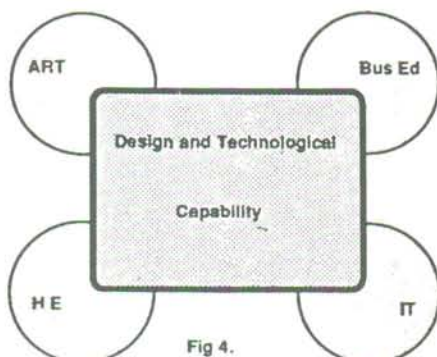


Fig 4.

Evolutionary model for Design and Technology Stage 3

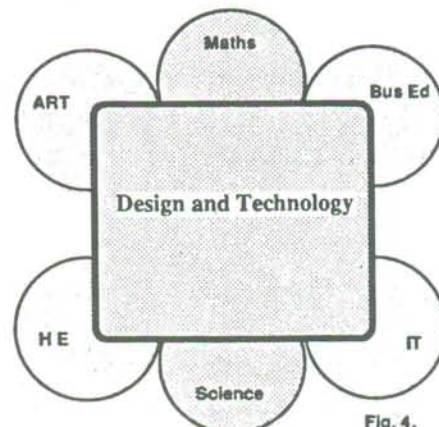


Fig. 4.

Evolutionary model for Design and Technology Stage 4.

interpretation in a manner which leads to loss of identity or meaning to the public at large.

Statutory orders bring with them responsibility and the need for professional integrity, let us use this opportunity to develop Design and Technology in a professional and realistic manner.

The challenges are plentiful but I would suggest five to concentrate on:

1. To create mutual trust between all staff in school so that expertise can be shared.
2. To work hard at continuity between phases.
3. To create environments in schools which are design and technological and conducive to learning.
4. To learn to resource children without over teaching them, and give them

time to develop through designing and making, without merely creating a project treadmill approach to the subject.

5. To be more effective and efficient in how and what we teach.
6. To think hard and constructively about the best way forward for key stage 4.
7. To comment constructively on SATs when they appear, they are not going to be easy, but ensure they reflect good practice in Design and Technology.

I hope I have given some food for thought, if I have given you the solution please think again because I don't know your schools and colleagues and therefore don't know your context. If you currently teach CDT do not be complacent, equally colleagues whatever field you work in be

constructive, be positive, be designedly in your approach, but don't confuse style and fashion with fundamentals. All subject have roots and values to give to young children, build on these roots, do not narrow pupils opportunities, and build on the opportunities in this report in such a manner that the young people of tomorrow have even better opportunities than those of today.

Let us celebrate the arrival of Design and Technology in the curriculum of all pupils and don't let us fail in the responsibilities that gives.

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