

Design in Schools – Consensus or Confusion?

Is work in design and in craft one and the same thing – or at least congruent? Or is it a distinct and separate activity?

F. Ashton

Rawlins Upper School and Community College, Leicestershire

Any department of any school is subject to influences and pressures which have little to do with the nature of what is taught, but which affect it because they impose administrative and organisational constraints. A Design Department is no exception and hence its courses, organisation, equipment etc. may very easily be substantially affected by school policy decisions. For instance streaming or mixed ability groups, moving towards C.S.E. from G.C.E. 'O' level, single sex or mixed, straight-through comprehensive or two-tier system, Grammar or Secondary Modern school, all will affect every department including the Design Dept. Over these the individual teacher, and even Heads of Departments, have little, often no influence, but this is not an excuse for planning departments and their activities at a shallower level than if one had a completely free hand. One must decide one's aims, objectives, priorities in theoretical terms before curtailing or modifying them in the light of practical difficulties. The article which follows deals mostly with principles for without clarifying any teacher must be working 'blind'. Since I do work in a school with the normal range of views I must also add that the views expressed in the article are not necessarily those of my Headmaster or of my colleagues.

It has struck me many times how many teachers in the design field fail to see or refuse to see that the primary aims of Craft and Design Departments are distinctly different. This is not to say that a Craft Dept. doesn't concern itself with design or that a Design Dept. doesn't concern itself with skills, simply that their emphases differ. Much confusion stems from unclear definitions and muddled use of terms, and even if one adopts a personal interpretation of terms it should at least be fairly exact. In my view defining terms properly or to one's own satisfaction allows one to clarify aims. I have taken a central, related group of terms in this field and offer crude but workable definitions of them in an attempt to clarify and highlight a framework within which to consider design in schools. I don't ask for acceptance, merely that they be used for discussion.

Design is a concept which embodies the idea of problem-solving. It consists of two main divisions – the Design Process and Design Realisation, the latter being produced from the design process as in the case of a table being made, a print, an office system etc. The design process is basically similar whatever the area of application, and can be adapted for specific Design Objectives. Within this context, Design Objectives for Art concern exploration, refinement, manipulation and communication of ideas based on aesthetic responses to all kinds of experiences, and aim at expressing or evoking ideas and emotional responses. However, Craft Design Objectives concern solution of problems arising from part of, a stage of or the whole of some production process. Each contains elements of the other but they are essentially different.

It may be claimed that one attempts Art design in Craft courses through woodcarving, silverwork etc. This is perfectly true but the inclusion of more aesthetically biased work in a Craft course does not convert major objectives. For me Design Education is about increasing the individual's awareness of the universality of the design concept, the crudities and subtleties of realised designs, the appreciation of the variety of limitations and governing factors in applying the design process and engaging sensibilities and abilities in doing all of this. One must define departments as well as courses in terms of their aims and not in terms of the difficulties of various materials, skills, tools and techniques.

Now arises the question of Design Departments. It surprises me how many schools (and teachers for that matter) exhibit the 'bandwagon syndrome'. Both 'reorganised' Craft departments and newly constituted departments are increasingly adopting the title of Design Department. They often produce work of imagination, high standards of finish and multi-material projects but as often as not they are not organised to achieve Design Aims, rather they have adopted freer attitudes to content and teaching techniques but within the traditional Craft framework that they have worked within for many years. In many cases nobody could fault the standard of work produced in such departments, but is it really based in a study of Design? The fact is that materials, skills, tools, techniques etc. etc. still form the bases of their course—designs and still guide everything that they do. If they called themselves Craft Departments it would be perfectly legitimate but I feel that calling themselves Design Departments is not.

The gathering together of a number of fairly distinct areas of study into one department with the stated aim of studying design carries certain implications. The most important is that someone has made a *conscious* decision to orient the department in this way, then come the following:

1. That the Aims of Design Education will govern all activities within the department bearing in mind limitations imposed from other sources such as school policy, financial resources etc.
2. That all courses will be governed by explicit Design Aims and will therefore be constructed to achieve Design Aims above all others, within the context of No. 1.
3. That (sooner or later) all staff within the department must understand precisely what their personal aims and group aims are in terms of Design Education.

In fact there will be many heads of departments who use such an approach in setting up departments or courses, but the crucial point is whether the key word design enters their cogitations, or whether implicitly or otherwise the word craft pops up again! If courses are designed at the level of materials (e.g. resistive vs non-resistive etc.) then one tends to end up with Craft courses, and it seems to me that without a cold, hard analytical look at existing courses, criteria and ideas one cannot claim to have properly worked out suitable criteria for anything.

In this context the term 'integrated' raises some questions, the most important one being whether the joining of two (or more) areas of study results in a soundly based, viable, educationally justifiable entity whose parts directly relate to one another in fact. In my experience so-called intergration doesn't often do this, rather the result is a kind of association of areas. When one speaks of an Integrated Design Dept, the same problems exist, for the now familiar implication is that all subjects are geared and organised around

a clear and definitive set of aims and objectives. It seems to me that when dealing with such a group of subjects the question of subject structure becomes important or at least significant. I am by no means an expert in the Theory of Knowledge but even I can see that some subjects are learned sequentially, rather after the manner of building a brick wall layer by layer, whereas in other subjects one can 'enter' at many points and work out in various directions. When setting up a Design Dept, this seems to me to be of importance. If one proposes to include, say, Technical Drawing then it must be clear that this subject consists of four areas which *in fact* bear only little relation to each other within the traditional subject's form. One can 'hive off' these areas by and large to reconstitute them as parts of integrated courses, but where a subject's form is coherent and shows a close internal structure, one must be very careful about how one treats it. In T.D. one can, for example, learn to draw engineering parts without going through large chunks of the plane and solid geometry, and one needs only a little grounding in pictorial techniques coupled with interest to become fairly competent in these. On the other hand, it is much more difficult to 'jump into' any old part of a metalwork (as a subject) for much relies upon the basic skills which form a large amount of the course. The point of this examination of structure and learning is that it is more often than not desirable to build a Design Department's activities around courses rather than 'set piece' subjects. The examination implications of this are fairly obvious – Mode III examinations should be adopted.

When looking at the amount of design study and experience which can be covered within 'X' school terms, content becomes critically important. It is easier for pupils engaged in small-scale or graphical work to build up a wide experience of the design process and (in many instances) design realisation. But in the heavier activities such as metalwork, or even in plastic, if several large-scale projects are attempted within the same period, the opportunities for experience of a wide range of design studies and applications are considerably limited. Thus the question arises, within a Design Dept., of how far one can allow production/construction processes to reduce the time available for design study and experience.

Now the fundamental point is returned to yet again: – that in a Design Dept. Craft must be subordinate to, and serve, Design. If this is accepted then the greatest proportion of time should be devoted to design study and realisation. Skills, materials, tools, techniques, machines only assume importance in relation to the degree to which they facilitate the design realisation, and also in terms of the pleasure derived from them during design realisation, but I repeat, they must remain subordinate.

When one attempts relatively large size projects such as designing and realising a wooden chair, a harmonograph, a drill stand and so on, then the slice of time consumed by realisation too often outweighs that consumed by the design process and study of design as concept together. Since the primary aim of a Design Dept. is Design Education it is but a short step to wondering whether such an imbalance in use of time can be justified in terms of these aims. Should we, perhaps, confine our projects to full scale small size projects and small size large scale projects? Is there not an excellent case for model-making as a major design realisation vehicle? Should we not begin to take a lesson from the large degree of freedom from time consuming processes used in a workshop,

permitted by 'unit construction' techniques, exemplified by Meccano, Stickle Bricks, Leggo, and similar kits? Is it really so unacceptable to begin to encourage pupils to design within the limits of standard parts and fittings, and to only fabricate special parts? A collection of standard units could relatively easily be built up within a school or group of schools and they could be used to this end. If one looks at the variety of design that can be originated and realised, within the limits of a small number of standard parts in some quantity, then this seems to me to be worthwhile. The whole point here is that a complete sector of small size, large scale designs, can be attempted parallel with those full size small scale designs which require workshop skills.

To take this idea just a little further, any Craft Dept, or Design Dept. (particularly) should be able to make up sets or kits from plastic sheet, rod and section combined with similar parts made from metal, wood, (even stiff card) and should be able to buy in some kind of blow-moulder, vacuum-former, extruder for plastics plus polystyrene casting equipment and embedding plastic etc. etc. for the realisation of design projects, and exploration of even Dam Construction etc. should be possible in some form. The most glaring example of such an approach already being regarded as traditional is in the Science Dept, where they simply cannot study a great number of applied science examples unless they do scale down the instances. For me the crucial advantage of including such an approach on a large scale is that even those pupils who are all fingers and thumbs in a workshop are suddenly free of their failure, and find themselves able to compete in one area of design work on an equal footing with others.

I look at workshops in various schools, and I begin to have very grave doubts about the *need* for such sophisticated machinery, the *need* for large sized projects which have to be attempted in order to justify the machinery! Do we really *need* a bank of six lathes which are capable of screw-cutting, wouldn't simpler ones do with, perhaps one or two screw-cutting lathes? Do we really *need* monster milling machines, large capacity shaper, spot welding machines, etc. etc? Such an industrial-type workshop, once set, must to an appreciable degree shape the kinds of work done because if the machines are not seen to be used a lot, the capital investment is not justified! I find it very difficult to defend massive expenditure on sophisticated machine tools when the objectives are primarily concerned with design, not Craft.

If one is seriously going to study design then it must be concerned with exploring both large and small examples, even if constraints compel dealing only with technical design. In doing this, wouldn't a wide selection of simpler power tools be at least as useful? They will convert into various forms of tools. Don't pupils who are all 'fingers and thumbs' avoid a Design Dept, simply because they are failures in terms of skill, yet nobody can convince me that lack of manipulative skill is a guarantee of lack of imaginative and creative design potential. If a pupil poorly, or ungrounded in workshop skills wants a design outlet for his creativity then he has to accept an atmosphere of personal failure if he enters a workshop. Would you do this? This is one reason why we only produce small numbers of pupils who appear to have any real appreciation of design, yet we produce large numbers of pupils who have Craft skills and knowledge.

Any new intake of pupils is a mixture of people who have different varieties of design and craft experiences, but for some purposes it is desirable that one gets them all to some

kind of common stage or state so that the programme confronting them can be begun from some baseline. I think that the best way of preparing any group of pupils for design courses is by equipping them with the basic skills and techniques of the graphical language of design. Graphical techniques of one kind or other are the common element running through all design study areas. An introductory course, ensuring that each pupil is sufficiently familiar with all of the graphical techniques and skills he is likely to need for the design programme, would enable him to begin exploring the specialist areas in terms of design very quickly. Obviously there will be some limitation set by lack of knowledge of certain materials, but this should be a *relatively* minor problem.

The kinds of experiences of graphics that most pupils will have are divided between two poles of the graphical spectrum. On the one hand they will come across the very formal and somewhat rigid techniques of Technical Drawing, and on the other hand the free and relatively selfish techniques of drawing and painting in Art. That extremely important middle ground is totally ignored, and outside of schools* goes under the title of graphic design. The teacher of Technical Drawing is normally constrained to work within the four 'walls' of Plane Geometry, Solid Geometry, Engineering Drawing and Pictorial Drawing. In none of these can he bring to bear his aesthetic sensitivities, save in the most minimal way, and in none of them can he feel free to express and communicate his ideas in ways which do not largely conform to some British Standards recommendation or other, these being narrowly functional in application to the fields of engineering and construction. '...By contrast the subjective artist, concerned with self-expression and self-communication, works to constraints and problems of his own choice. His work is of necessity personal... The graphic designer, like any other designer, is a specialist who is concerned with solving other people's problems...always to do with visual communication.' (*A Basic Course in Graphic Design* by Taylor, R. — Studio Vista/Van Nostrand Reinhold — 1971)

Here I am implying that just as Technical Drawing is the graphical vehicle for the engineer/architect, so too there are other graphical techniques which are vehicles for other kinds of activities, and which could profitably be included in any Design Department's programme thus extending the range of pupils to express, refine, explore and communicate design ideas and information. Quite apart from these major considerations, there is the clear design experience offered by graphic design in its own right. The utilisation of technical skill and aesthetic sense through the exercise of intellect is a different graphical experience from those at present offered by Art and Technical Drawing. As with the distinction between Craft and Design, there are elements of each in the others but the emphases are quite different.

Leaving aside all that has been said in the context of Design Department, the Design Concept is much greater than that encompassed by Craft or Design Depts, and in some form or other penetrates almost all departments of a school. I suggest that musical composition, design of experiments, office system design, urban and rural planning, architectural development etc. etc. all essentially constitute examples of application of the design concept. The same kind of quality of thought goes into these as into designing objects or paintings, the difference being in the form taken by the realised design.

If one takes such a broad view of Design then there are some things that naturally arise

from it. If the universality of design is to be recognised and appreciated by pupils then the confinement of formally defined Design Education to Design Departments may not be such a good idea unless they become less inward-looking. There is at present a very real danger that pupils will associate the study and realisation of design only with those activities carried on within such departments. Compared with the design problems and realisations of, say, the landscape architect, they only deal with small-scale projects and these tend to be of a particular kind. It is the exception rather than the rule that studies of urban and rural conservation, preservation, restoration etc. are included in a Design Department's programme of design studies, despite the fact that there are substantial design elements involved. Yet look at departments of biological science, environmental science and humanities and one will fairly frequently encounter studies of such matters and within those studies one will find not infrequently that some of the conclusions drawn by pupils do take into account the kinds of design problems which would be met if certain courses of action were taken. It seems to me that this kind of topic for study could quite easily be adopted by Design Departments and provides a clear link with other subject areas and departments. We know that physical environments can have particular psychological effects (e.g. poor surroundings can create depression) and surely this an area for design to be seen to be important.

Of course I am not suggesting that it is generally feasible to try to provide opportunities for design realisation in very large size projects, but I am quite deliberately stating that Design Departments have a quite clear dual role to fulfill. They must continue to provide the proper groundings in design realisation towards which most are at present geared, but they must also assume the role of the school's Design Centre wherein a parallel study of design can be carried on as a part practical, part theoretical study in which non-realizable applications of design in addition to small scale ones whilst the commonality of design elements is emphasised. It is not proper Design Education if, at the end of a course of design study, a pupil can only recognise design elements in small machines, tools, furniture and painting etc. We must help all pupils to apply their critical faculties constructively to both aesthetic and intellectual aspects of design in all fields. "The Design Process is a notion, and like any other notion it is interpreted individually. To compel any child to design according to a rigid formula or series of stages is to stifle, even negate, the creative processes which normally result in the ideas being produced. Despite this there is a recognisable design process and provided it is defined to aid thinking about the whole field of design it is a useful concept." (Taylor, R. *ibid*)

*Note. In a Leicestershire school a Design Dept., has dispensed with Technical Drawing as a subject, and in its place has put two courses dealing with graphical uses. One is Technical Graphics which covers techniques of graphical communication whilst the other is Design Drawing and explores the ways in which graphics can be used as a design medium, realisation being in the form of models or real objects. Both contain elements of the other and now another link is being forged with the graphic design Art course. All three courses are run within the same Design Dept, so that physical proximity plays its part. The whole spectrum of graphical techniques can be offered to pupils within this department and from other departments