

Making a Start to Design Education

A First Year Integrated Design Programme

Louis Brough and Edgar Rogers

Stanborough School, Welwyn Garden City.

Where does a 'design' course finish and a 'technology' course start? Where is the dividing line between investigation and practical work? Viewed as a whole two main tendencies clearly emerge from new courses in design and craft education. First, there is the attempt to teach a subject area from first principles, which incorporates an analytical approach to problem-solving situations. Secondly, there is the almost inevitable growth of integrated methods of teaching, as the first principles of engineering, for example, are found to lie in another subject area – physics, or the first principles of product design midway between the art and technical departments. This situation leads one not only to question the traditional division of subjects within the school curriculum but also the older types of 'craft' course organised, as they were, so far from a teaching of first principles.

At Stanborough School we are in the middle of the second year of an integrated design course which illustrates these general tendencies. In addition since what we seek to instil are the elements of an education in design, is the determination that at least some children will be educated to challenge the traditional assumptions made about the activities of artists, craftsmen, and the distinctions based upon them made in society and in education.

Such an idea is not new; neither is the design course we have organised. The first foundation course, as such, in the area of the arts and crafts was conducted at the Bauhaus fifty years ago. From the Bauhaus the idea spread to art schools all over the world but it is only in recent years the idea has filtered through to the secondary schools. Some schools, like Stanborough, are working individually; a scheme operated in Warwickshire began large-scale trials this year; one of the School's Council projects is preparing trial materials; some schools are combining their technical studies, art, and home economics departments into one, and so on.

At Stanborough discussions between the heads of the three departments quickly revealed a common area of experience between the subjects; experience, however, often more implied than consciously exploited. This sprang from the past when the work of the departments has emphasised such divergence that little ground existed for a common policy. Nevertheless common ground did exist in two areas – the manipulation of materials, and design.

Of these design is the more fundamental since nothing can be made which has not first been designed, even if the process of design is rudimentary. At the same time designing cannot be divorced from making; an idea is proved or disproved only when constructed

and tested.

In the past the art department has concentrated on those aspects of design concerned with visual relationships. The technical studies department, on the other hand, has been largely concerned with the technical aspects of design. The home economics department has focussed its attention on the evaluation of domestic design. Each approach, pursued in isolation, suffers from a similar imbalance in that it fails to recognise the activities of the artist, craftsman, engineer and discriminating consumer as being different not in kind but only in degree in that each applies a different emphasis within the same area of judgement. It was seen that the same principles underlie design activities in the arts and design activities in the crafts and that the values exercised in the practice of the arts and crafts are the same as those for discrimination.

The result of our discussions was to establish a common course to introduce the elements of design. The definition of design included both aesthetic and technical judgements. These are judgements about the visual relationships of pattern, form, arrangement, colour, texture, balance, proportion and those in the technical sphere – about the structure and characteristics of materials and their suitability for particular purposes. In both areas these judgements come to be made through knowledge of a wide range of materials and techniques and it was to explore these on the broadest possible lines that the three departments agreed to co-operate in a fully integrated course.

Like all introductory courses, this one first introduces the fundamental elements of the subject; then shows the interrelationships of those elements, and finally provides practice in the manipulation of those elements. It is a logical step, therefore, to position it in the first year of the secondary school or, possibly in a simplified form, in the first year of the middle school. In doing this we may achieve several important advantages:—

- a) To build on the creative, rather than the technological approach to materials which has already been started in the junior school so that it provides a continuing experience from one level of education to the next.
- b) To establish a common 'grammar' of expression related to aesthetic and technical matters, which will enable the child to see the three subjects as being clearly related to one another and establish a common terminology on which later, more specialised, work can be built.
- c) To enable the first and subsequent years to be planned so as to provide a controlled exploration of materials and ideas.

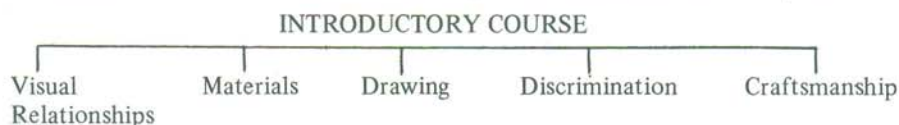
The aims of the course were finalised as follows:—

- 1) To make design understandable and definable by isolating and considering some of the basic units of design – pattern, arrangement, colour etc.
- 2) To use a wide range of materials and techniques to widen the children's field of knowledge and experience, and to provide a base upon which the particular disciplines of the departments concerned might subsequently be built.
- 3) To make evident the unity of processes involved in design evaluation and decision making.

- 4) To make the children more objectively aware of their environment – both manufactured and natural.
- 5) To initiate the development of judgements of value – estimations of quality and satisfactoriness of design based on more than mere opinion and imitation.

Each aim is important, but perhaps the most important is the first because it reflects an attitude to what might be called the ‘creative mystique’. Our aim is to emphasise the rationality of aesthetic processes. At all points we do define our terms and in doing that try to bring the activities of the artist, designer or craftsman into a context in which they can be understood and evaluated.

The selection of topics is based on work which is of relevance to the future aims of all three departments. So topics of a particularly specialised nature (‘structures’ is an example) have been left out. The breakdown of work into only five ‘topic areas’ gives some indication of the extent of the common ground between the three subjects.



Of these the first three are of immediate importance whilst the other two become increasingly important in later years.

The breakdown into specific work follows from this:–

TOPICS	WEEKS	
2D Shape	2)
Arrangement	1)
2D Shape	2)
3D Form	2)
Arrangement	1)
3D Form	2)
Display/Summary:Revision	1)
Colour	2)
Texture	2)
Perspective Drawing	2)
Outlines and Surfaces	2)
Joining Materials Together	1)
Moulding	2)
Casting	2)
Display/Summary:Revision	1)
The Nature of Materials	2)
Exploring the Material	3)
Analytical Drawing	2)
Exhibition/Judgements	1)

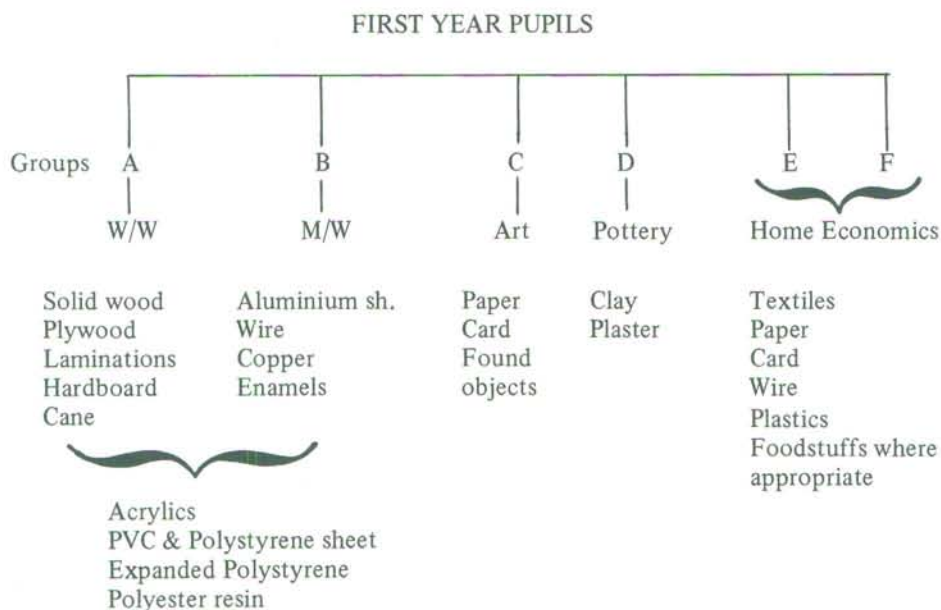
Visual Relationships

Materials

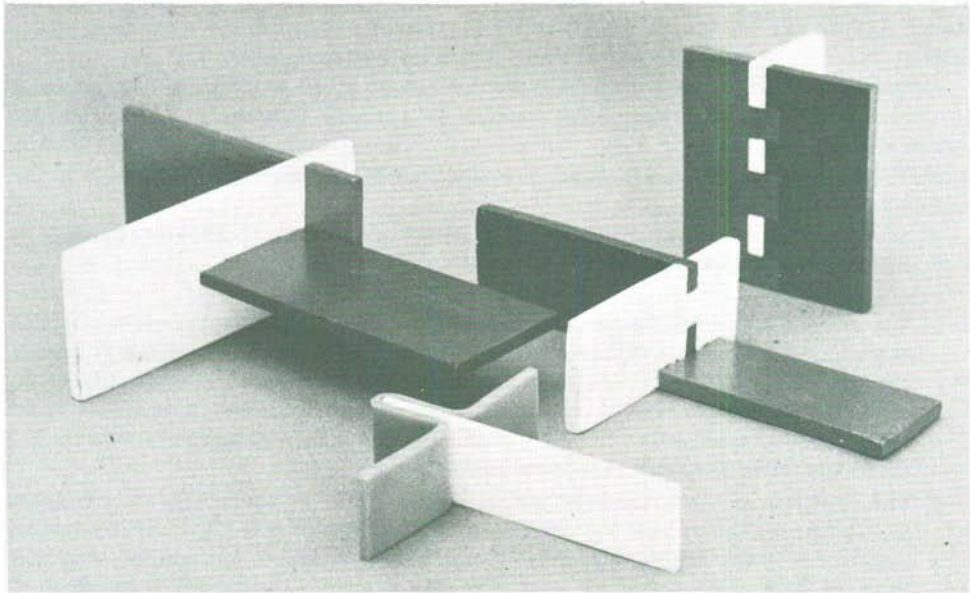
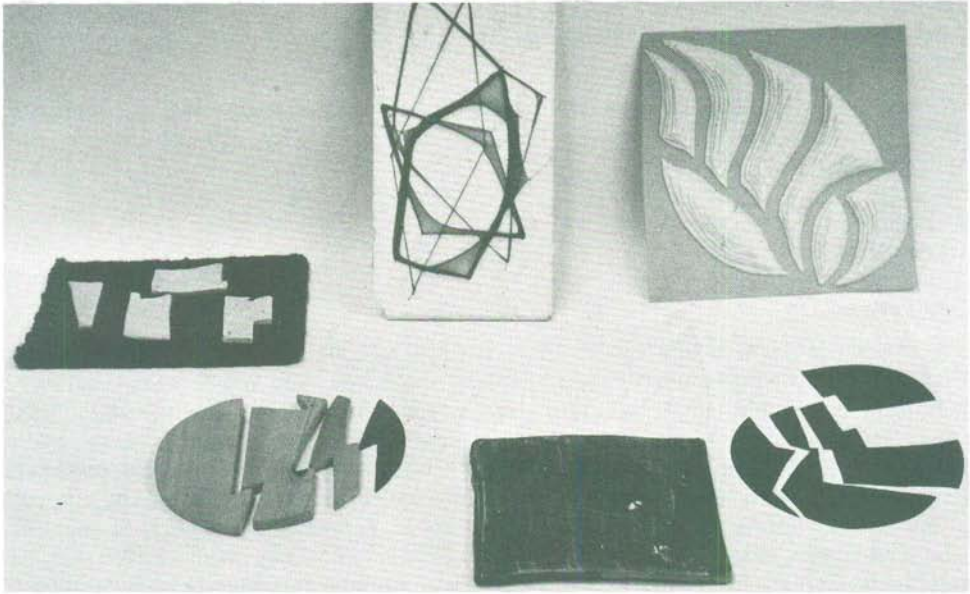
It should be emphasised, in relation to these topics, that materials cannot be worked in the first section without some regard to techniques, and materials are not worked in the second section without some regard to aesthetic considerations. 'Visual relationships' and 'materials' refer to emphases rather than to an exclusive concentrations.

At Stanborough now in its third year of comprehensive reorganisation approximately 160 pupils enter the school each year. They are divided into six groups of equal size, each unstreamed and containing boys and girls. The teaching team consists of six members of staff – two from each department, each of whom is in administrative charge of one of the groups.

One of the many advantages afforded by an introductory course is the large increase in materials experience made possible. An indication of this is given here:—



Our attitude to materials is flexible. Each department works principally in the materials with which it is normally associated but is free to incorporate materials from other departments if they become necessary or desirable for a particular topic. It is impossible to give every child an experience of each material for every topic but each



Examples of integrated work. Stanborough School

group rotates around the work areas in a set order to gain the widest experience possible. If we trace the movement of one group during its first term of work this will become clearer:—

TOPICS	Weeks	W/W	M/W	Art	Pottery	H.E.1	H.E.2
2D Shape	2	A	B	C	D	E	F
Arrangement	1						A
2D Shape	2				A		
3D Form	2		A				
Arrangement	1					A	
3D Form	2			A			
Colour	2	A					

In the single block of four periods which the course is allocated each week a conscious balance is attempted between common experience and knowledge and diversified activity. Each topic begins with an introduction given to the entire 160 pupils in the school hall. Topics concerned with aesthetics are generally given by the art teacher on the assumption that he is more familiar with the material being discussed; those concerned with materials are generally given by the technical design teacher on the same assumption. The purpose of the introduction is to make the topic intelligible. The usual sequence is to examine natural examples, then to look at man's deliberate use, and finally man's creative use. To start the topic with an examination of examples from nature enables us to illustrate the way in which man's ideas are frequently based upon natural precedents. During the talk the key points and key words are defined which serve to establish the vocabulary of the subject; the children keep a record of these. Slides are used extensively.

Following the introduction the groups disperse to one of the work areas. Experience at this point is diverse; the topic being handled in any way that the individual teacher considers relevant in terms of his or her materials. The common character of the work is re-established through homework which attempts to relate the work done in school to the outside world.

Since the course has been running for only one and a half years it is not yet possible to draw firm conclusions. But a few brief observations might be useful.

- 1) The effort needed by the teaching team to rethink their subjects in terms of this new approach has been of benefit to us all and caused us (to our shame) often to discover relationships of technique and method between the subjects previously unsuspected. For example: if casting is defined as the production of an article made by pouring a liquid into a hollow mould then one can, with validity, consider ice lollies and jellies alongside reinforced concrete buildings.
- 2) The problems of team teaching are, as always, those of adjustment, compromise and tolerance. In our case the original team consisted of two experienced teachers familiar with the school, two experienced teachers new to the school, and two teachers in their probationary year. The second year has seen half of the original team drop out to be replaced by three more teachers new to the school, one of

them a probationer. Still the course survives.

- 3) We are often asked who is the leader of our team, on the assumption that someone has to be. In schools where there is a single head to a combined department this question will not arise, but otherwise it must be a matter for discussion. In our case there is no leader; we each act as equals working to a commonly agreed syllabus.
- 4) The enthusiasm with which the children have undertaken the work has surprised us all. They appear to enjoy and respond to the frequent change of work area, teacher and topic.
- 5) Our particular scheme does not permit the production of end products to take home. While it remains true that making something for themselves is for many children a great incentive, most have been able to adjust to the idea that the work done in class is only an exercise in investigating an idea.
- 6) In the course of a year the children are asked to make judgements about work on display on three occasions, and an examination is taken at the end of the year. We have all been encouraged by the fairly rapid replacement of "I like it because it is nice" by a more knowledgeable assessment of merits.
- 7) This has carried over into the second year where we have noticed an attempt, when looking at new introductory course work, to sort out which relationships are being explored — there is certainly nothing like the instant rejection of a piece because it does not 'look like' something. In addition, in teaching second year pupils we have found it much easier to introduce a design investigation in fundamental terms.

Subsequent developments

The most common criticism of the introductory course idea is that there is sometimes little apparent connection between the work done in the first year and the work that follows it. As its name implies it is only an introduction laying a basis of knowledge and experience to be extended in depth in later years and if this is not done it has little relevance. The subsequent development of an introductory course can be traced through the pattern of both integrated and individual work.

As regards integrated work it is easy to visualise a succession of design projects at various points throughout the secondary school where art/technical design, art/home economics, technical design/home economics links can be maintained on work of common interest. Links of this sort will not prevent each department building individually on the introduction course in pursuit of its particular and specialised aims.

It would be out of place here to venture too deeply into the full development from the introductory course but it is hoped the following outline of work in the craft areas will give a general impression.

SECOND YEAR — Small-scale problems in single materials (generally wood or metal or plastics) which are initially concerned with the investigation of a visual idea alone or a technical idea alone. The further study of the design process and of simple ergonomics. Later problems are increased in scale involving linked visual and technical decisions.

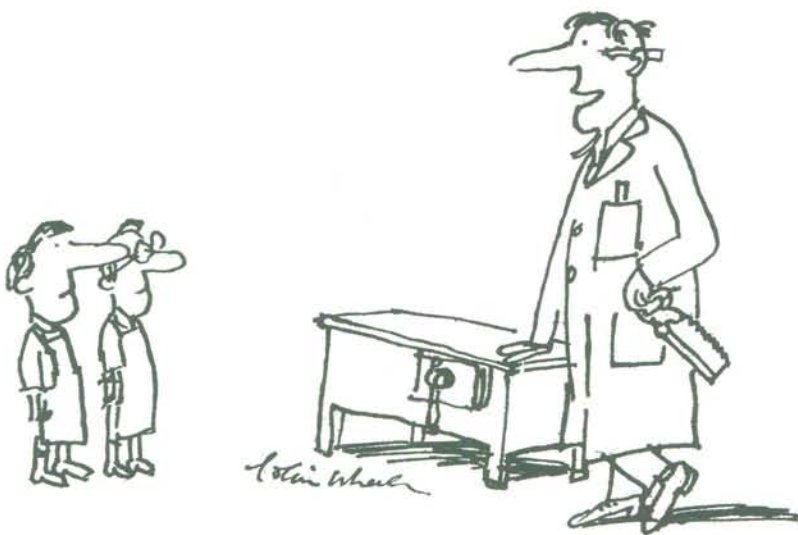
THIRD YEAR — Problems which form part of a larger whole where the system or

organisation of use presents a framework of constraint, for example, modules and modular systems. The consideration of structures and problems built around a principle of movement and/or energy.

FOURTH, FIFTH, SIXTH YEARS – Two main lines of development are envisaged one of which would be selected by students according to their interests and aptitude.

- a) 'General' design problems directed towards industrial domestic design and 'social' design.
- b) "Applied Science" design problems which are more technological in nature.

Within both lines of development the design problems would be an amplification and extension of the problems first posed in the early years.



Let me introduce myself – I'm the director and coordinator of three dimensional and technological studies.

reprinted from "The Teacher" with permission.