Design Project Work in Jewellery and Silversmithing

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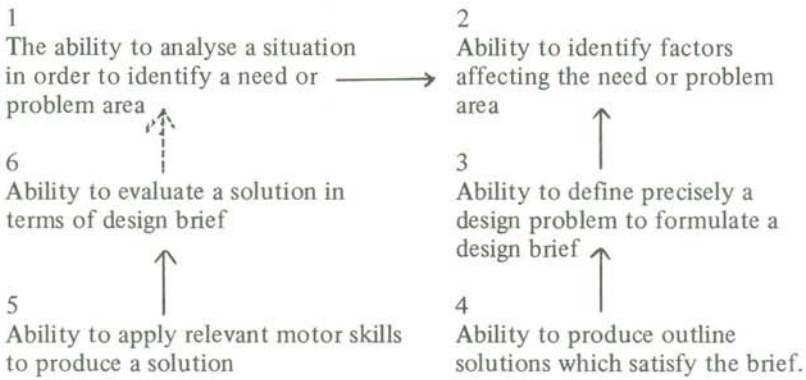
Now that the initial surge of curriculum activity in 'technology' appears to have become established there is a growing interest in the potential contribution of the applied arts to design education. The educational objectives likely to be achieved through project work in applied science and technology have been stressed repeatedly and lucidly in *Studies in Design Education and Craft* and other journals, but the case for aesthetic based project work may not yet have been adequately represented. Indeed, during the early impact on the schools of Project Technology the future of what was then termed 'art metalwork' appeared to be in some doubt. But the renaissance of interest in the design and construction of modern jewellery and silversmithing as a medium for 'personal expression' has, amongst other developments, changed the situation but at the same time appears to be presenting a dilemma for teachers, particularly in small craft departments, who are facing the decision of whether to move closer to the arts or sciences. This article sets out to narrow the dichotomy between technology and applied art by suggesting that Deere's 'design line' (1) is as valid for the design and production of modern jewellery as it is for technology projects.

In the past 'art metalwork' has suffered as much as, if not more than, any of the crafts from an over emphasis on the teaching of motor skills. It was frequently the practice to demonstrate each stage and technique required to produce an article which was then 'mass-produced' by pupils through an imitative process. Pupils were presented with ready made solutions to design problems which they manufactured for the teacher. Alternatively, pupils were directed to photographs and illustrations from books, magazines or jewellery exhibitions from which they selected a piece to make. A practice which can be equated with the engineering teachers 'hand-out' working drawings, and which has probably resulted in the production of jewellery as unsuited to the needs of pupils as the time honoured surface gauge and tap-wrench. At its worst, this 'selective' or 'choice' process is evidenced in school exhibitions where pupils have been persuaded by glossy and colourful illustrations to reproduce necklaces originally intended to be worn at the 'Hunt Ball' or 'Film Premier', functions which they or even 'mum' are unlikely to attend. The questions are raised – Are these pieces ever worn? Do they meet the needs of the pupils? What abilities have been developed in the pupils through their production?

Having criticised traditional approaches to 'art metalwork' one must offer an alternative teaching approach and attempt to justify it. It is suggested that the learning experiences of the design process offer a way forward. Deere's design line shown below has been modified on a number of occasions but still forms the basis of most interpretations of the design process.

1 Accept problem situation	2 Identify Problem		3 Specify Problem
4 Propose alternative outline solutions	5 Choose a Solution		6 Detail design
7 Make and assemble	8 Test	9 Deliver device and system	10 Change environment

For the purpose of this article, the design process is simplified and illustrated by childrens activities.



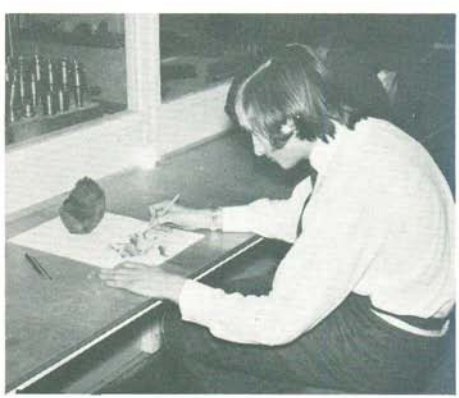
How does a project involving the design and production of a piece of modern jewellery fit this pattern? Projects are frequently initiated by pupil demand – "I'd like to make a piece of jewellery," (The pupil accepts the problem situation in Deere's terms). The teacher's first difficulty is to resist the temptation to direct him to the manuscripts of Shoenfelt (2) or Becker (3) etc., a temptation hard to resist, particularly at busy and stressful times. In the writer's experience, considerable prompting may be required to persuade boys to analyse either their own situation or the situation of the person for whom they intend to make the jewellery, or to make explicit their identification of a need. Some boys appear to be happy to produce 'in a vacuum' with no clear idea that the piece will eventually be worn by someone on specific occasions; few appear to wish to verbalise their own 'need' to produce the piece. The significance of the teacher prompting pupils to identify clear needs, lies in the fact that they then tend to 'internalise' the problem or need and it becomes their problem, not the teacher's. In this area of work girls have a much clearer notion of their own needs and have frequently identified factors relating to their needs before making the request to start the project. Factors such as

'occasions on which the piece will be worn', 'colours which the piece is intended to complement', 'need to produce within a certain sum of money,' and 'age of wearer' are factors which were seen to require consideration. (4)

Teachers supervising technology projects have stressed the need to record decisions and factors related to the project during all the operational stages of the project. This practice has not often been part of practical work in crafts. Experience suggests that there is much to be gained from such recording and the production of a precise written definition of the design brief. This provides a basis for clear thinking in the production of outline solutions and appears to aid 'creativity' rather than stifle it. Criticisms of 'just another attempt to kill the spontaneous joy of a practical subject' and 'why attempt to make practical work academically respectable', are criticisms which can be answered on logical and educational grounds. With skilful prompting, pupils can reach 'the brief' stage within an hour or two with simple projects. When viewed against the overall time taken to actually make an item, perhaps half a school year, there seems little point in spending hours producing something which does not meet its need, purely for the sake of fostering a rather bogus 'spontaneous creativity'.

It is in the production of outline solutions that co-operative links with work in the fine arts are most necessary and most evident. One problem above all others appears to stifle pupils' creative ability – the inability to sketch and translate ideas onto paper. The problem occurs particularly in 'imaginative' design work but is nearly as acute when attempts are made to produce 'analytical' sketches from natural forms used as sources of inspiration. From these sketches springs the basis for the shape, form, and texture to the jewellery design. Where sketching ability is developed, both the 'imaginative' and 'analytical' approaches are useful and valid mediums through which to obtain outline solutions. Where sketching ability is not highly developed, alternative 'design' approaches are essential.

Analytical sketching. Production of a design for an etched portion of an altar screen.



Design in the foreground produced from cardboard. Pupil is now producing the actual solution in silver.

Some success has been obtained by using any ductile or 'non-resistant' modelling material as a substitute for paper and pencil. Clay, plasticine, wax, soft iron wire, pipe cleaners, polystyrene, polyurethene, card, plaster and aerated concrete, are all legitimate materials for creative work.

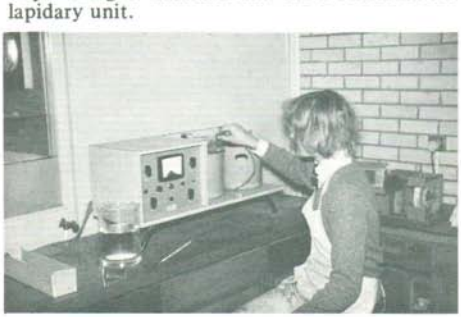
A case can be made for providing 'concrete' part solutions around which pupils can 'think'. For example, a tumbled gem-stone often suggests by its own form, lines, etc., possible solutions for a silver mounting. When designing gem-rings pupils need to refer to size and shape of stones so that they are not 'thinking' in the abstract. In other words, while these part solutions may restrict creativity, they can be exploited to aid expression, as well as helping the final decision making process concerningselection of a solution from a number of possible ideas.

Many design departments are now being provided with silversmithing and jewellery equipment which rivals the sophistication of engineering machinery. Equipment for centrifugal casting, stone cutting and polishing, and electroplating is increasingly being installed in schools, together with pendant drills, finishers and barrel polishers.

The making of jewellery is an excellent medium through which to teach complex motor skills. Pye (5) reminds us of the need to teach skill and a positive attitude towards quality of work:

Modern jewellery equipment in use which cuts down the time spent by pupils on motor skills and therefore leaves time for development of cognitive abilities.

Pupil using a diamond saw on a combination lapidary unit.



Pupil using electro-plating equipment to nickel plate a copper pendant.

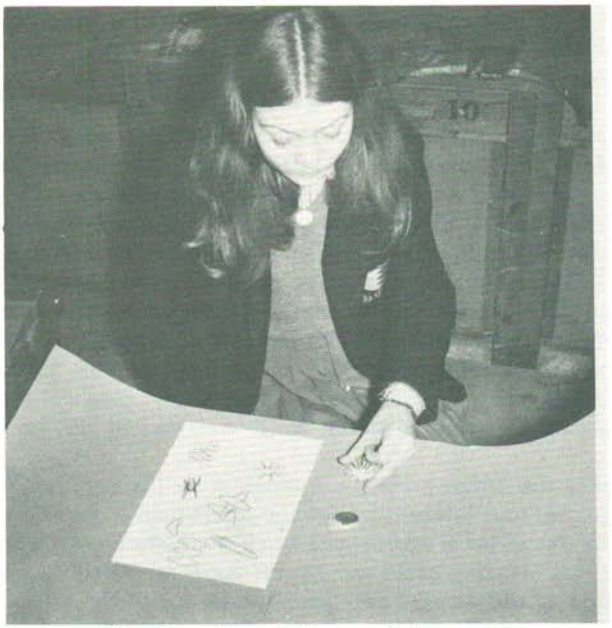
"In practice the designer hopes the workmanship will be good, but the workman decides whether it shall be good or not. On the workmans' decision depends a great part of the quality of our environment".

However, one must recognise too that our society is a mechanised industrial society, pupils needing confidence to handle machinery as well as perform hand skills. The immediate educational significances of introducing new equipment into aesthetic metalworking areas are threefold. Firstly, time involved in educationally 'sterile' activities – such as producing a flat surface by rubbing on a sheet of emery and a flat plate – is cut drastically. Secondly, the equipment affords a wider scope for production, placing fewer restrictions on the expressive activities of pupils. Finally, and perhaps most important, the use of 'foolproof' processes such as barrel polishing allows lower ability pupils to produce high quality articles. Any methods which can be used to raise the confidence levels of these pupils must be considered, even to the extent of 'fly-pressing' standard shapes and units which can be manipulated into a variety of jewellery forms. When this is necessary the learning experiences of the design process can still be real even if at a diluted level.

The final stage of the design process – evaluation by the pupil of his/her solution – will probably occur without intervention by the teacher, since we all make judgments of our own work. The role of the teacher appears to be to encourage the judgments beyond – 'I like it', 'It suits me', leading to a more precise appraisal which may involve reference back to the criteria of the design brief. Scientific testing of the solution, as performed with technology projects, is seldom appropriate or necessary with aesthetic based projects, judgments of a piece of jewellery being more qualitative rather than quantitative. Nevertheless this area of the design process certainly provides an opportunity to develop the ability to make rational and discriminative judgments.

This article has so far concentrated on the cognitive abilities and motor skills associated with the learning experiences of aesthetic based project work, but has said less about the potential development of positive attitudes, values and social skills. Some educationalists might wish to weight these neglected areas more heavily.

The aim of developing positive attitudes through work with materials is a long standing one. But the assumed affinity between practical work and the development of positive values has been challenged by research studies (Taberner 1968) which tend to indicate that attitudes are not transferred from within the workshop or art room to real life situations outside the school. Similar doubts have been shown to exist in the assumed relationships between school workshop activities and the value placed by pupils on the educational experiences as determinants of both leisure time and vocational activities. Attitudes and values are known to be variable and even reversible. They are particularly difficult to measure. Logically one would have expected to make gains in pupils' values such as 'respect for property', 'sympathy with materials', 'appreciation of good workmanship', through learning experiences which involved their handling of precious metals and semi-precious stones. Similarly, gains could be expected in social attitudes, such as 'willingness to co-operate with other', both through group projects and general workshop 'atmosphere'. However, in the writers opinion, any achievement of such objectives should at the present time be considered of secondary importance – in fact,



Girl with outline solutions made from soft iron binding wire. Actual solutions were produced in silver.

'bonus' objectives. Design education is in its infancy. It may be advisable to concentrate on achieving realistic objectives which can be demonstrated as being achieved by a significant proportion of secondary school pupils.

If the design process is applied to the teaching of jewellery and silver-smithing then an important contribution will be made to the overall structure of design education, the apparent dichtomy between technology and aesthetics will be narrowed, and the decision faced by craft teachers of whether to link with the arts or sciences can be made with the confidence of knowing that, whichever choice is made, the cognitive abilities developed in their pupils will be precisely the same.

References

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