

Designing a place in the curriculum

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Design and technology activities have been occurring in primary classrooms and nurseries for many years often under the name of art, craft, CDT, home economics or mathematics. Children have constructed, identified need, planned, evaluated, designed, modified and communicated often in blissful ignorance that the meal that they had planned or the cafe they had designed and built in the corner of their classroom was part of technology. In some cases teachers were equally unaware of the nature of these activities. However awareness has been growing following the publication of statutory orders for technology, which has meant a re-examination of this area of the curriculum and for some, perhaps, identification for the first time with technology.

□ Design Education Begins to Find its Place

The thoughts and activities described below were noted following a one day inservice course 'Design in the Primary Curriculum' held at Manchester University. The course originated from a desire to articulate what design education and design capability are and what they might become.

In primary education we have embraced craft, CDT, Art and Design, Design Technology, each opportunity allowing us to explore the relationship of design with other areas. Though perhaps few primary teachers have ever thought or had time to identify the true nature of design education.

On the day of the course we sought clarification through design activity with consideration of how the statutory orders for technology informed that activity. (A useful basis for the planning of learning for children as well as teachers.)

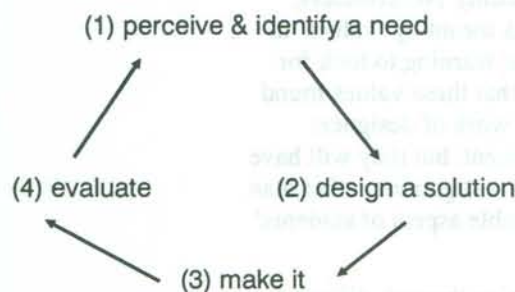
The day focused around the extent to which design could be seen as part of a process.

We began with examples of possible design activity involving children:

- i. nursery children remodelling a home corner
- ii. eleven year olds designing and making toys for younger children
- iii. infant children considering the housing for pets
- iv. children organising a jumble sale

Much of our personal difficulty understanding design in these activities relates to our repeated observation that children in

The design process model



Attainment Targets for D & T

- AT 1 Identifying Needs and Opportunities
 AT 2 Generating a Design
 AT 3 Planning and Making
 AT 4 Evaluating

the primary years appear to build, design, make plan and evaluate at the same time. This rather conflicts with the model expounded over recent years. This model, often referred to as the 'Design Process' has been the basis of developments in design related activity. This appeared to be significant in relation to the National Curriculum as the Design Process appeared to be the basis for the attainment targets for Technology.

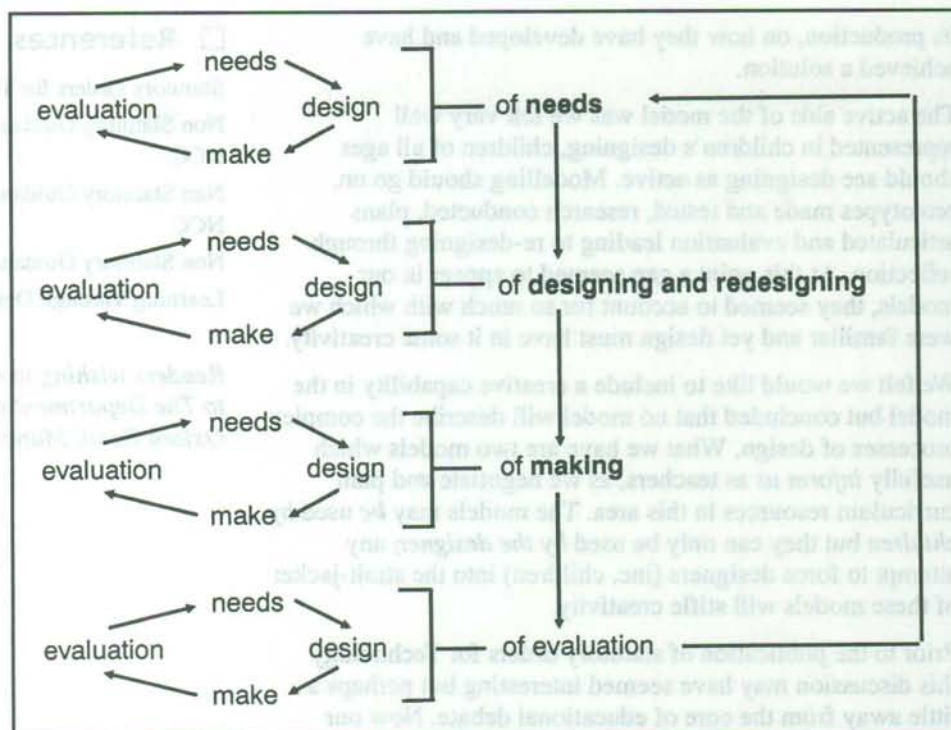
This model has much to recommend it, in that it gives the appearance of logical, flowing action. It seems to start in the right place, emphasising the need to identify problems (a facet often missed in classroom activity). Designing and making are given a central role, design dutifully preceding the making stage. Lastly we are directed to evaluation, again an essential element in design education, one which regrettably is often rushed or disregarded.

Those of us who used this process in the past were certainly aware of its use but also of its limitations, its simplistic nature and that this process needs to go on at several levels.

It has been recognised that children and adults go around the cycle several times before even a small problem can be solved. Individuals were seen also regularly to 'skip' around the process, starting in the 'wrong' place but regularly achieving a result of a high standard. This was understood as right and proper by most teachers. They accepted that this was the way children worked and that it was unrealistic to expect children to follow these artificial cycles. The model seemed to be most useful as a planning tool, as a focus of attention for the teacher. Within the statutory orders for Technology this model appears central and all embracing.

By the time, however, we have recognised the deficiencies of this model what do we have left? Certainly the model seems to be somewhat inadequate, particularly as any kind of basis for planning design related education. Perhaps the greatest indictment of the model is its mechanistic view of what perhaps ought to be an essentially creative process. The cycle seems to be a product of a desire to align design with the sciences rather than emphasising its creative nature and link with the arts.

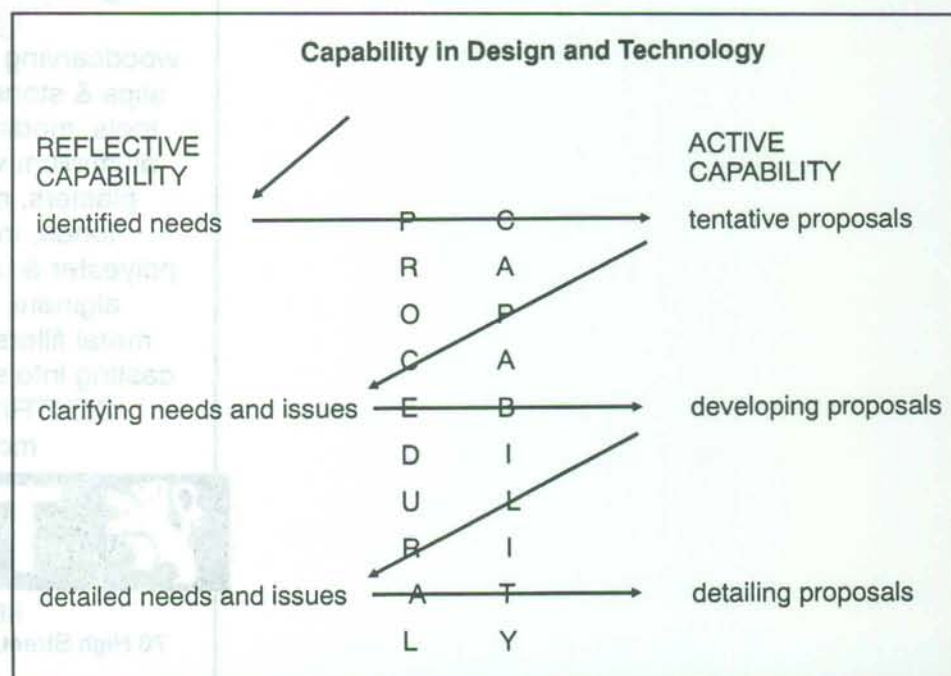
We compared the so called 'Design Process' with a recently produced paper



from SEAC 'Learning Through Design and Technology — The APU Model'.

Based on the SEAC paper, which describes the process by identifying aspects of design capability outlined below, we sought clarification of our understanding of how children design.

The non-cyclic nature of the model seemed to have advantages and the reference to children 'tooing and froing' between reflective and active capability very much matched our experience of young children designing. The terms reflective and active were the focus of some consideration. Reflective design being a goal we all identified and reflection being a useful tool in learning. Children will reflect not only on the effectiveness of their solution but also of their role in



its production, on how they have developed and have achieved a solution.

The active side of the model was we felt very well represented in children's designing, children of all ages should see designing as active. Modelling should go on, prototypes made and tested, research conducted, plans articulated and evaluation leading to re-designing through reflection. At this point a gap seemed to appear in our models, they seemed to account for so much with which we were familiar and yet design must have in it some creativity.

We felt we would like to include a creative capability in the model but concluded that no model will describe the complex processes of design. What we have are two models which usefully *inform us* as teachers, as we negotiate and plan curriculum resources in this area. The models may be used by *children* but they can only be used by *the designer*, any attempt to force designers (inc. children) into the strait-jacket of these models will stifle creativity.

Prior to the publication of statutory orders for Technology this discussion may have seemed interesting but perhaps a little away from the core of educational debate. Now our understanding of design education faces the profession squarely and will lie at the heart of much development in the curriculum over the next ten years.

Children do design, they model, discuss, criticise, support, dismantle, play and imagine in every aspect of their lives. As teachers we must seek ourselves to understand the complex patterns of behaviour and thought which lead to design. How does creativity fit in and how can we develop it with design in mind?

The statutory orders are written. They are based around what is called 'the design process', there are advantages here but it is not the whole picture and those of us interested in design education will spend many happy hours with children examining how and why they continue to produce wonderful results whilst disregarding our so-called models!

References

Statutory Orders for Technology, HMSO.

Non Statutory Guidance for Design and Technological Capability, NCC.

Non Statutory Guidance for Design and Technological Capability, NCC.

Non Statutory Guidance for Science, NCC.

Learning Through Design and Technology, The APU Model, SEAC.

Readers wishing to contact Alan Cross may do so by writing to The Department of Education, University of Manchester, Oxford Road, Manchester, M13 9PL

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