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Values and Design and Technology: exploring an issue

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Abstract

The two presenters will deliver a dialogue which will explore the value judgements made, especially, around a particular issue, i.e. the value of recycling, or the need to recycle materials. Initially they will suggest possible technological projects and, as a consequence, explore the knowledge, skills and value judgements likely to be involved.

The presentation will pursue the following steps:

Exploring the issue using stimulation material and information, including ideas from different cultures.

Suggesting possible technology projects

Highlighting value judgements that would need to be taken

Deciding appropriate criteria

Suggesting strategies for widening the evidence that might be taken into account, clarifying perspectives and facing up to value conflicts.

Introduction

There is no such thing as value-free technology. Decisions have to be made at all stages of the technological process and these decisions are based on value judgements. Value judgements are involved when the problem or need is identified, investigated and possible solutions chosen; they are part of the designing, making and evaluating processes. Technology is not a benign objective, impersonal activity which can be compartmentalised and separated from culture. If it is to be useful it must fit into the pattern of activity which belongs to a 'life style' and a 'set of values.'¹ It is shaped by perspectives and priorities forged out of experience, culture and belief.

There is considerable confusion about what is meant by technology, not only by the public but also by professional engineers and technology teachers.² There are many different perspectives on the function and nature of technology. In a similar way explanations for the meaning of values are numerous and varied.³ Thus values are said to be one's principles, constructs, ethics, beliefs or standards. Although there may be differences in the words used to describe values, there is agreement that values are all pervasive for they are the person's judgement of what is important and of worth in life. Although values are involved in making choices, this is often done subconsciously, without reflection or acknowledgement of the values⁴. Making explicit the values invoked in decision making is of particular importance when there is conflict or failure to

notice the full range of implications.

Starting a project

The nature of the decisions to be made and the extent to which values are openly discussed will partly depend on the starting point of any technological project. Martin Grant argued ten years ago⁵ that a start can be made within the area of any one of the three inter-locking components of Design and Technology capability: skills, knowledge and values. Most approaches to technology teaching have an initial emphasis on either utilitarian problem-solving skills (to take an example from *Design and Technology Teaching* 1992: 'design a boat to travel a 4m length of guttering') or the application of knowledge (from the same article: 'using knowledge gained from an investigation into the inter-relationships of light and colour, make a 3D Animal Head Mask').⁶ In both approaches, the values component is likely to receive scant attention. "In its absence technology can too easily be seen as largely concerned with technical solutions to technical problems....and its relevance to people, quality of life, social problems and values become submerged and invisible."⁵

An alternative starting point is to start with a social issue, changing the emphasis from the impersonal to the human and from the exclusively technical to the sociotechnological. "In this approach the values component is highlighted and is used to initiate and guide the designing and making activities..... Specific problems connected with the issue are identified by

pupilsand the appropriateness of social, economic, and political proposals are given the same critical consideration as are all potential technical solutions. This will, of necessity, involve young people in the making of value judgements about the nature of technology, and in some cases could result in the rejection of the 'technical fix' in favour of social action. However, it is likely that some aspect of the issue under study will be amenable to a technology output,.....Using this approach pupils can engage in technological activities with the knowledge that *their* work has a social relevance....and that their value judgements and moral decisions are controlling the direction of *their* technology." ⁵

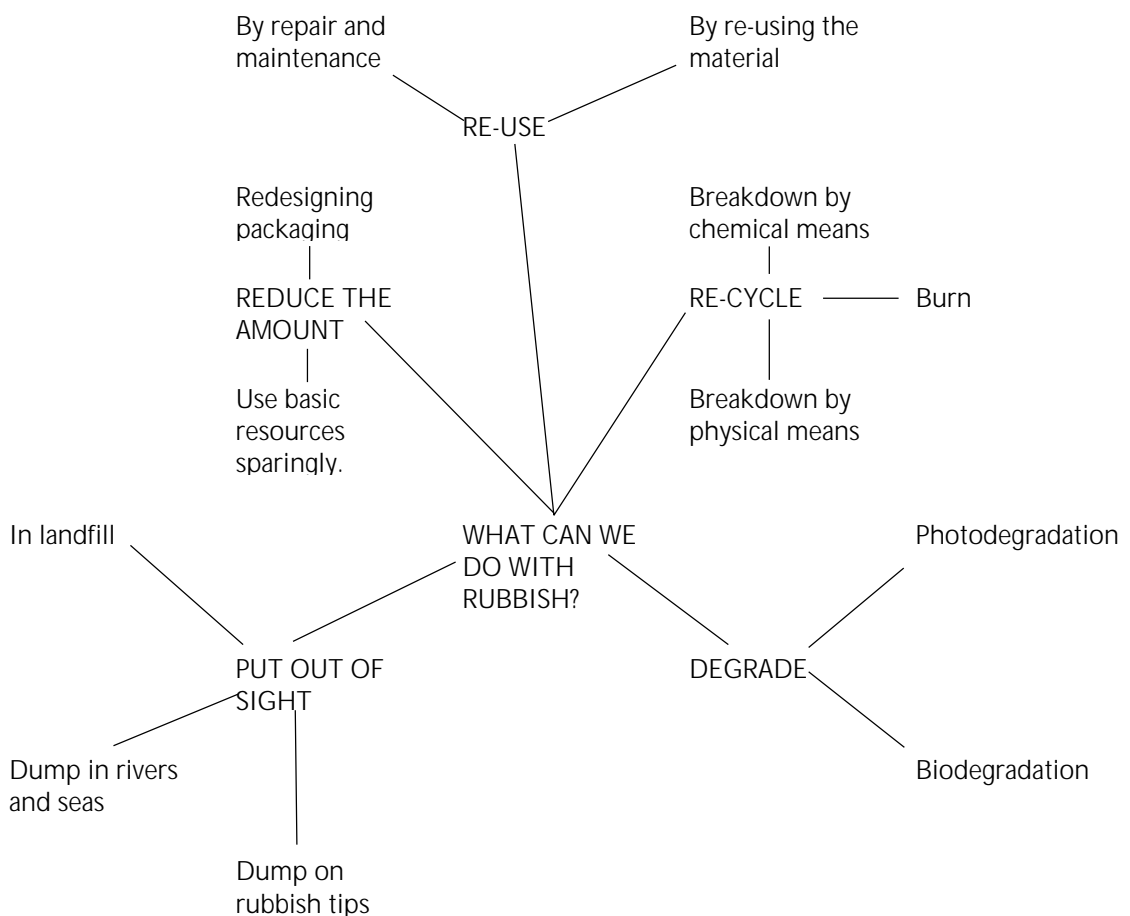
acknowledge and make explicit the values involved adds to the quality and appropriateness of the technological response and should be assessed as well as the skills and knowledge. The Mount School in York has tried to establish this type of assessment by developing a list of questions that might be asked of any design such as:

- How does it (both process and product) serve to satisfy the real needs (c.f. Maslow) of those at the bottom of society, immediately and in the long term, locally and globally?
- Is it reversible or modifiable if it is seen to be in need of improvement?
- How does it allow for or encourage participation among consumers and others affected? ⁷

Starting with an issue

It should not be assumed that in taking an issue based approach the product or outcome is not important, that the product can be shoddy. Assessment and evaluation of application of knowledge and skills remains important and pupils should be helped to value and take pride in the particular skills of making that are needed for high quality products. Furthermore, the ability to

Evaluation therefore should not be limited to a consideration of technical, economic, and sometimes environmental values. Also included should be social, cultural, and even moral and spiritual values. Even a small task can face this: at the start of an INSET session a group of primary



school teachers was given a mini-project: to make a name label for themselves using the rich assortment of materials laid out round the room. Much stress was laid on the opportunity to present oneself in a dream role, how one longed to be known and identified. After twenty minutes of feverish activity the teachers had concocted elaborate and distinctive head-gear, brooches or bracelets to communicate their names and personalities. The artefacts were then evaluated. No mention was made of the original brief to reflect on the impression each hoped to make and there was no assessment of how well personality was portrayed. The criteria were speed of production, quality of material and cost. Not even aesthetic values were considered, let alone the personal values people had struggled to express.

A

One issue : What can we do with rubbish?

An example of starting project work from a social issue might be to explore the *problem and potential of rubbish*. An initial brainstorming could start out along the following lines:

B

This could lead to projects such as :

- a) Design a maintenance kit (e.g. for a bicycle, skateboard) including instructions.
- b) Design protective packaging for a chocolate figure using the *minimum* of materials.
- c) Design dynamic, moving toys from junk materials and use to illustrate a story performed to younger children.
- d) Design a marketing strategy to promote the use of recycled products.
- e) Plan a campaign to reduce litter in your local area.

C

Value - judgements may have been debated during the brain-storming, for example:

- a) What leisure activities can be enjoyed without extravagant use of materials and of non-renewable sources of energy?
- b) What maintenance activities do people find worthwhile/money saving? What skills are needed for maintenance activities?
- c) What makes a toy appealing/safe for children?
- d) What makes a local neighbourhood attractive and a healthy place to live?
- e) What will happen to the product at the end of its life?

D

There are broader issues behind the specific value questions:

- a) What benefit is sought and for whom?

- b) Who gains or loses status or influence? e.g. if the product one uses or wears is not the latest model.
- c) How do we want to use our time?

These value decisions made at the start of a project and during development will be determined by the beliefs and 'stances for living' of people involved in the project. These might include:

- d) The satisfaction and sense of achievement in making something oneself overrides the convenience of a ready-made product.
- e) Quality and durability matters more than flashy presentation.
- f) a person's integrity/caring attitude/creativity is more important than the status they can acquire by their possessions.
- g) Concern about the legacy left to the next generation.
- h) awareness of the delicate balances in nature and of human responsibility for not causing irreversible changes.

It is these fundamental beliefs and perspectives that need to be brought into the open and discussed and there is a variety of strategies that can be used to encourage this. These include the use of photopacks, the representation of thought processes by means of drawing flow-charts or concept maps, the use of role-play or simulation exercises. This paper is intended to start a process of sharing such ideas and experience.

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