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A global approach to design and technology

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A GLOBAL APPROACH TO DESIGN AND TECHNOLOGY

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Intermediate Technology

What contribution does Technology in schools have to make to sustainable development?

For how much longer can Technology barely consider the environmental consequences of conventional technologies?

And for how much longer can Technology be so Eurocentric, First World-centric and consumer-centric?

Sustainable Development, as defined in the Brundtland Report 1987, is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

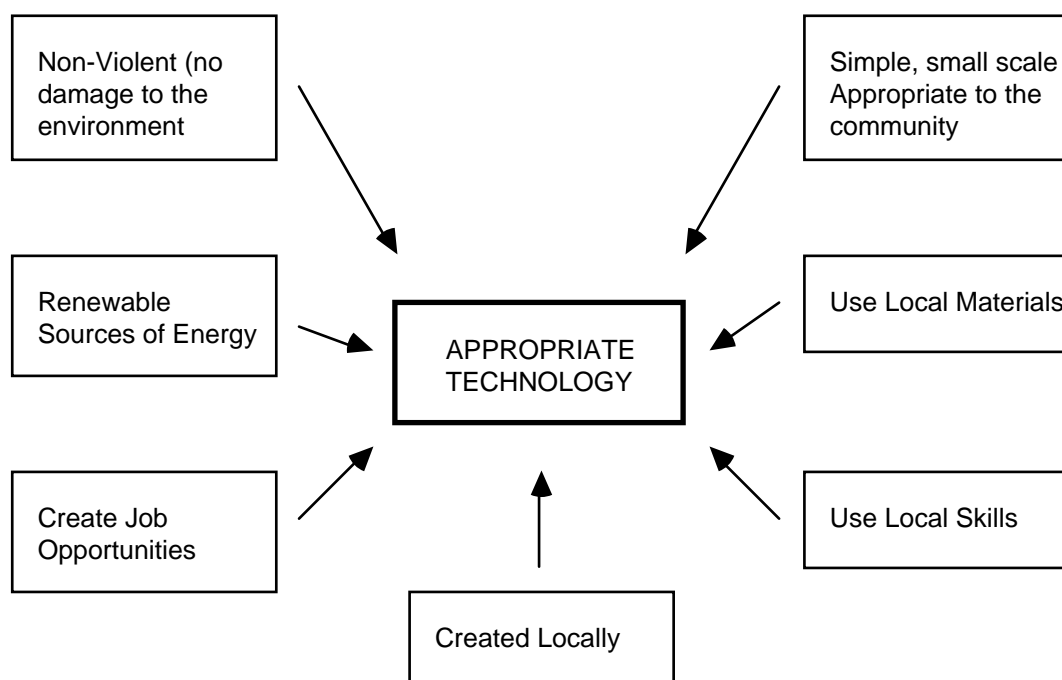
These three questions give a flavour of my angle and concerns.

In the Interim Report there was a sentence which said pupils should develop the ability "to intervene purposefully to bring about and control change". I think this is very challenging and encouraging - although I suspect the "change" envisaged was not the kind of change I am proposing.

In Attainment Targets 1 and 4 there are requirements to examine a range of 'contexts' and technologies from 'other cultures'. Intermediate Technology, through its educational work, is preparing a series of assignments, based on its work overseas, to meet those requirements.

Before describing those assignments a brief word on Intermediate Technology: Intermediate Technology is a British development agency - a charity - founded by Schumacher, the author of "Small is Beautiful". IT - our kind of IT - works with organisations overseas to develop appropriate technologies which enable poor people to become more productive - and thereby earn a living. "Appropriate technology" may need explaining.

Firstly it is not "Third World" Technology - third rate for third world - there are relevant applications for us. So what is AT?



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This is one way of describing 'appropriate' technology - it may be argued that some of these do not apply in the over-industrialised world - but should they apply?

These 'criteria' are guidelines only - but it must be apparent that there is relevance for us - for example 'renewable energy' and 'non violent to the environment' are current issues which demand our attention.

What is development?

The terms 'developing' and 'under-developed' carry the underlying assumption that those countries with that label are 'developing' to become like us. It is abundantly clear that if that were to happen, if the 'developing' world were to achieve our levels of pollution, consumption, resource depletion etc there would be no future for our planet. Global warming is at the moment, largely the product of industrialised countries: if India and China, for example, were to achieve a similar level of energy consumption and greenhouse gas output the consequences would be too dreadful to contemplate. So the word 'development' is a difficult one. Clearly it is not acceptable for the rich world to say to the poor world "we have a right to benefit from the 'fruits' of technology, to consume and pollute to our hearts' content: you do not".

Only one aspect of development has been addressed here : the economic one. Social and spiritual 'development' must not be neglected. We have a semantic problem with the word 'poor'. In our culture it has an economic slant - to use it of people in other cultures with that same connotation denies 'richness' of other kinds.

So what is the answer? We have to change the way we consume, and our attitudes to technology. Technology will have to be re-defined within new parameters, with far tougher questions on environmental damage being asked. This clearly has implications for what is taught in schools and the way Technology in particular is taught. We must cease to prepare our children for the world as it is today, and prepare them instead for the world they must struggle to live in in 20 years time.

Now at last the scene is set: What is Intermediate Technology doing in schools? With Technology in our name we are a natural focus for D and T teachers keen to incorporate an alternative view of technology.

We have at present four small scale assignments, and in preparation four more complex packs. These I will describe briefly:

Domestic energy needs in Sri Lanka - cooking

The article that follows appeared in the Spring/Summer 1990 issue of IT's newsletter, Small World.

COOKING THE CURRICULUM

The Education Office of Intermediate Technology is continuing with its work on assignments for Design and Technology, linked to the requirements of the National Curriculum. One particularly exciting aspect of the work is the cross-curricular opportunities for D and T led school activities - a real chance for Technology Across the Curriculum.

Helsby School in Cheshire, at which one of our specialist D and T teacher advisors works, has been involved in some enormously innovative work : In November 1989 the whole of the Second Year were introduced to the issues related to energy in Sri Lanka. Seven departments became involved, on a truly collaborative basis, in delivering the D and T attainment targets across the curriculum. Art and Design, Geography, Religious Education, English, Science, Home Economics and Design and Technology were all deeply involved. The measure of the success of such an initiative is of course the pupils' response. Simon Burne, the head of IT's Communications Division visited the school on the final day of evaluation.

'I know it looks like a loo seat, but it really works' enthused a twelve year old whose stove design really did work, and he could justify every aspect of the stove from the point of view of a Sri Lankan housewife.....' Judging by the stove, these children's articulate answers to my questions and their

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superb workbooks, they have learnt more in six weeks than I learnt at school in one year', commented Simon Burne.

The initiative has caused large amount of local interest and indeed the IT Education Office have run INSET courses for Design and Technology, and other disciplines in Cheshire, Bedfordshire, Wigan, West Sussex and Avon.

The needs of blacksmiths in Malawi

This assignment is more naturally rooted in traditional D and T, and focuses on how a blacksmith can achieve adequate heat in his hearth - now that the loss of hardwood trees means he has to use soft woods. This project is to do with the design and making of bellows. This has been piloted in a school in Putney, London, and has provided two terms of work for two groups of 2nd years, in their CDT lesson. The pupils have responded with great enthusiasm, and have had little trouble identifying with such an unfamiliar context.

Textiles in Bangladesh

This project, focusing on a woman's textiles co-operative in Bangladesh, is providing great scope for both cross-curricular and multi-cultural work. It is impossible to consider textiles in Bangladesh without considering its Geography and History. Equally, in a multi-cultural classroom, particularly with Asian pupils, there are opportunities for those pupils to contribute their own cultural perspectives if they so wish. This is indeed what happened at a school in London where British Muslims were able to participate and contribute in an active and valued way. Bedfordshire Education Service, also, have developed work based on IT's experience - titled "Design and Technology for an Interdependent World".

Rural Transport - based in South India or Zimbabwe.

Carrying and transporting goods is a universal need: sometimes one solution is more appropriate than others. This assignment will explore needs in a given context. Adaptation of bicycle transport can use the pupils' own experience and help diminish feelings of 'them and us.'

All the packs will contain the general introduction to the series, teacher's notes including Attainment Targets etc., a country profile, background on the local context and artisans, a set of slides for the context and additional material as appropriate. They will be published over the next year - anyone wishing to have details should contact Intermediate Technology.

A word on terminology is needed : 'Third World' carries negative connotations of Third Class etc. I would like to suggest Majority/Minority as being more useful terms. The majority of the world's population live in those countries called the 'Third World'. To see ourselves as Minority World is perhaps sobering.

So, in conclusion, have those first questions been answered? Appropriate technology is part of the process of sustainable development : learning from our technological mistakes and adapting our approach with 'sustainable development' or even 'sustainable living' as the guiding principle must have impact on the content of Technology teaching in schools.

On the question of Eurocentrism etc. the burgeoning sensitivity to One World and Planet Earth must surely provide the rationale for the consideration of global issues. And those issues include the role of inappropriate technology in all parts of the world, exploitation, debt and climate change.

That quote from the Interim Report, and my interpretation of it needs comment : 'intervening purposefully to bring about change' does not mean, necessarily, technological change in the Majority World, but changes in behaviour and attitudes here. Those changes to enable sustainable development to become a reality must have relevance for what we as educators do in school.