

Book Reviews

Technology's Challenge to Science Education

David Layton

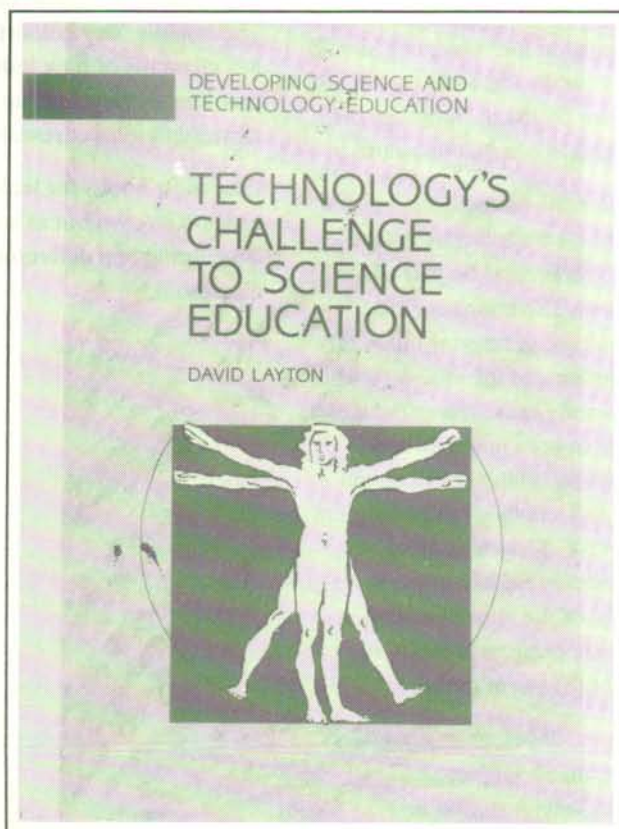
Open University Press, £32.50 (hardback),
£10.99 (paperback)

Reviewed by Allan Trueman

This publication is part of series with the umbrella title Developing Science and Technology Education. The book examines the relationship between technology and science and how the simplistic models of this interdependence ignore the values and cultural dependence underlying technology. The main theme throughout is whether, within the interrelationship between science and technology in schools, science should be viewed as a purely academic pursuit, as knowledge that can be used as a tool, or as a resource for practical application.

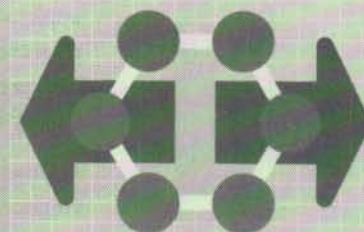
There are chapters on the historical development of technology, the National Curriculum, understanding technology, science as a resource for technology, reworking the relationship between science and technology and finally, an overview of the current situation.

I feel that this book deals well with the issues that it raises. The interrelationship between these two subjects of the curriculum is always an interesting area for discussion, and David Layton debates the issues in a thought-provoking and absorbing manner.



NEW HORIZONS IN PLASTICS

A HANDBOOK FOR
DESIGN ENGINEERS



New Horizons in Plastics: a handbook for the design engineer

WEKA

Scope International Ltd, £120

Reviewed by Chris Dowlen

This is a vast tabulated tome full of useful information on the properties of most plastics, with a design manual. In the past when I have needed to find information on plastics, I've found it difficult to compare the performance of plastics and to make objective decisions about which would be best suited to a particular application. To some extent this book fits the bill. It contains lots of objective data, and for simple types of plastics the same pieces of data are supplied, tabulated and easy to use. However, from time to time the tables contain blanks, and at others they contain subjective information such as 'excellent' or 'Fairly good', which makes objective assessment difficult.

Let me put the book into context, however. Its subtitle suggests that it is aimed at design engineers. I believe that, used in this context, it is a valuable source of information. Anyone who is involved in designing products where engineering properties are important, will find this an essential handbook. However, in the context of this journal and its main readership of teachers, there are few (even at Master's level) student projects which will need this sort of information. The book isn't going to be used every day or even every other day, and teachers are not going to need to have the information at their fingertips.

Now for a few niggles. Most of us know plastics by their popular names, and even design engineers refer to them in this way. If you want to look up 'Nylon' for example, you will need to look under its generic name of Polyamide or the more up-to-date trade name of Zytel. I would have appreciated more references within the text. For example, there is a series of abstracts giving snapshots of new applications in plastics, but these have no references. Nor does the section on creative design methods, which makes it harder to dig deeper into the subject.

My overall verdict? Well, I'm a design engineer, so I'll find it useful. However, I spend most of my time teaching, so its usefulness is moderated — particularly by the price, and although it is currently on half-price offer (£60), it is still a little expensive.

Make the Future Work: appropriate technology

Catherine Budgett-Meakin

Longman Group UK Ltd, £14.99

Reviewed by Ian Buchanan

Technology education at secondary level, in both the English National Curriculum and the Scottish, has been patchy at best in implementation. There is now the added dimension of science and technology being introduced at primary level. Many teachers are concerned and puzzled at the route they should follow to offer their pupils the wide and varied experiences asked for by the designers of the curriculum. This book is one way forward.

Contributions to the book are eclectic, but the underlying theme of all contributors is that issues, values and beliefs must be part of the technological process. The book's subtitle, *Appropriate Technology*, permeates much of the content; appropriate and relevant — to the pupils' experiences and needs, and in the wider context, appropriate to both majority and minority world interests. Many publications wax lyrical on the philosophy of technology as an intellectual exercise. The philosophy promoted by the authors in this volume is rooted in the realism of the classroom and in artefacts from real-life projects allied to the values and beliefs of the client group.

The case studies from 'developing' countries will be of interest to many subject areas, including economics, social studies and

geography. The 'hard technology' from the manufacture of a variety of useful artefacts is an excellent vehicle to introduce intermediate technology to students of design and technology.

My enthusiasm for this book may in part be due to the fact that many of the contributions reinforce my own views of what constitutes technology and a technological education. Enthusiasm aside, to all in education with an interest in the future well-being of the planet and in the technologies that will form that future, this book is a must.

Real Design, Real Activities

Jenny Ridgwell

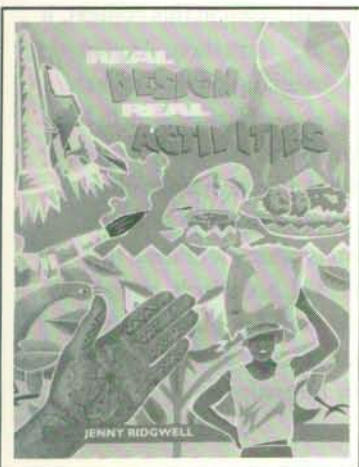
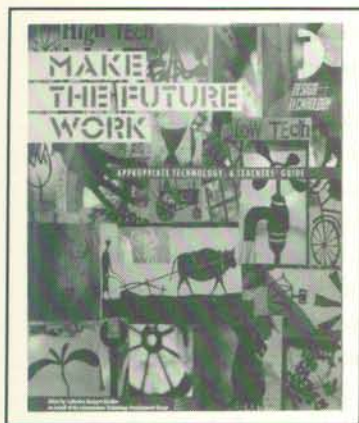
Hodder & Stoughton, £5.50

Reviewed by Jillian Mellor

As usual, Jenny Ridgwell has come up with a super book to use in the classroom. It is full of good ideas, interesting themes, a wide range of activities and appropriate design briefs. I feel that the book will be most suitable for pupils at Key Stage 3. It focuses on a wide range of materials including wood, food and fabrics.

The start of the book looks at 'Past and Future', which does not feature in many books but will help pupils to meet that SoA which refers to 'using information from other times and cultures to help in developing their ideas'. The book is very colourful and well set out. It has elements of how industry approaches problem solving, sets up tasting panels and carries out market research.

Like most books for technology it is not to be used on its own but as a starting point for developing and delivering technology in the classroom.



International Journal of Technology and Design Education

Editor

Edgar W. Jenkins, *The University of Leeds, UK.*

The *International Journal of Technology and Design Education* seeks to encourage research and scholarly writing about any aspect of technology and design education. Critical, review, and comparative studies are particularly prominent, as are contributions which draw upon other literatures, such as those derived from historical, philosophical, sociological or psychological studies of technology or design, in order to address issues of concern to technology and design education.

One of the most significant developments of recent years has been the emergence of technology and design education as an integral part of general education in many parts of the world. Its distinctive curriculum features are technological literacy and capability and it highlights the importance of 'knowledge in action', of 'doing' as well as 'understanding'.

However, teaching technology and design as a component of general education is an emergent, rather than an established, practice and many questions remain to be answered. In addition to issues about the nature of technology itself, little is known about students' learning and teachers' understandings of technology and about what it means to become more technologically capable. There are important issues about the preparation of technology teachers, the assessment of technological competence and the relationship of technology to other curriculum elements, notably science. There are also significant policy questions relating to the practice and rationale of curriculum change.

Subscription information

1994, Volume 4 (3 issues)

Subscription rate Dfl. 210.00 / US\$ 126.00, including postage and handling.

ISSN 0957-7572

P.O. Box 322, 3300 AH Dordrecht, The Netherlands
P.O. Box 358, Accord Station, Hingham, MA 02018-0358, U.S.A.

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