

## Technology Education – A World Wide Concern

The PATT-Sweden Conference

*Dr Thomas Ginner,  
Centre for School  
Technology  
Education, Linköping  
University*

*Fifty teachers and  
researchers from  
around the world  
discussed and  
compared technology  
education at the  
PATT-Sweden  
conference in May*

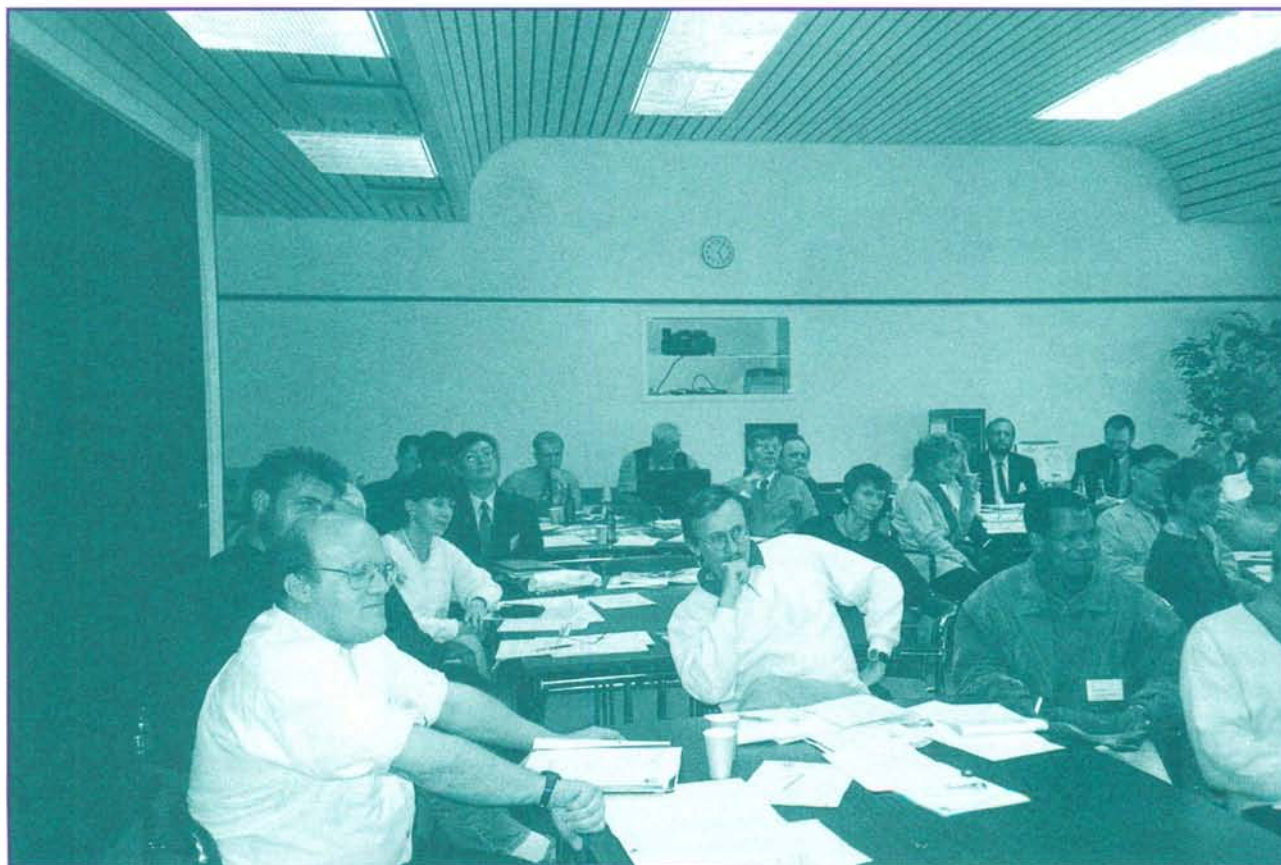
When you stand in the classroom and together with the students struggle with mechanisms, fabrics, joints and pulleys you can easily get the feeling that you are totally on your own. But that's not the case. It is perhaps carrying it a bit too far but I would argue that you are in fact part of a world wide movement!

There is a growing interest for technology as part of the core curriculum all over the world. Many countries have introduced the subject in secondary school but an increasing number of national curricula also have or are planning to introduce technology in primary school.

This trend was clearly demonstrated at the PATT-Sweden Conference on primary technology and technology teacher training in May earlier this year. PATT is an acronym for Pupils' Attitude Towards Technology, a network started in the early 1980s in the Netherlands. Over the years it has organised conferences and projects involving teachers and researchers from all over the world.

The PATT-Sweden conference was a joint arrangement between PATT and the Centre for School Technology Education (CETIS) at Linköping University, Sweden. In Sweden technology has been compulsory from level one to nine since 1980 but very little has been done to develop the subject. It has been neglected in primary – the teachers have not felt prepared to deal with it and there has been a lack of support – and in secondary it has followed the old rut: either "nuts and bolts" or extended science or physics. Technology has suffered from a low status both inside and outside school. In 1994 a new national curriculum was introduced. Efforts are now made to enhance and develop technology as a multi disciplinary subject, using both "hands-on" and "brains-on".

So there were many good reasons for CETIS to volunteer as organiser for this conference focusing on primary technology and teacher training. We need to compare and exchange ideas and experiences with other countries and this type of conference is an excellent way to do that.



- How is technology defined in other countries?
- Is it compulsory or not?
- What about content and methods?
- How is the technology and gender issue tackled if at all?
- What about values and attitudes?

These were among the questions discussed over the five days in Linköping. PATT conferences are by tradition small scale arrangements but nevertheless the fifty teachers and researchers represented countries from all over the world, including Taiwan, Australia, USA, Mozambique, France, UK, Slovakia, Holland, and Finland. This may prove that it is a world wide movement.

With countries representing so many different cultural, social and economical traditions and structures there was a great variety of examples of how technology education is understood and practised. In some countries craft and the informal economy is important, which then is reflected in the technology education. In others, public concern about a decreasing number of engineering and science students are important factors when the subject is designed.

But one observation is both interesting and significant. There is a growing concern for technology education and in an increasing number of countries the subject is developing towards a multi-disciplinary knowledge area where practice and theory are combined and questions on values and attitudes are raised.

When it comes to classroom experience it may be interesting and encouraging to British readers that the examples presented from the UK at the PATT conference clearly indicate that Sweden at least has a lot to learn from what is done in British primary schools.



**Living Materials –  
Practical Activities  
in Science and  
Technology**

Anne Riggs and Irena  
M Olejnik  
Southgate  
Publishers: £7.95  
ISBN 1 85741 076 9

*Reviewed by David  
Foster*

This paperback book contains 64 pages and is packed with useful information. It is a combination of teachers' notes followed by pupil sheets which lead the pupils through a variety of experiments. The worksheets are set out in such a way that the material can be effectively differentiated to appropriate levels. The book is divided into three sections which cover:

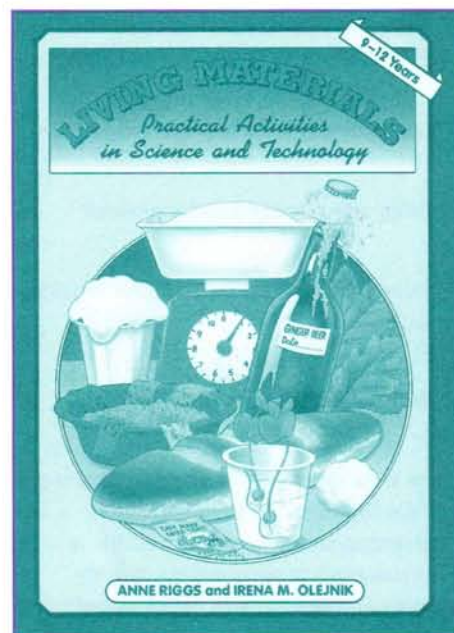
- 1) Food and Nutrition
- 2) Looking at Living Material in New Ways
- 3) Decay and Pollution

I think that the layout of the book is excellent and would be of real benefit to teachers and pupils alike involved in science and technology work in the age range of 9-12 as indicated by the authors. It would certainly be possible to use this material in the delivery of the Investigations element of the Northern Board Modular Science course at GCSE. Equally, the content dealing with Food and Nutrition deals with much of the experimental work contained in the National Curriculum Technology work in Key Stage 3. All the sheets can be photocopied.

The style of presentation would support pupils in the lower third of the ability range who would have little problem with the language used. To help further with this, there is a useful glossary of terms at the back of the book. Pupils could certainly use this for revision purposes. It would be appropriate to use one section or more as part of an existing course and if it was adopted, I am sure that individual teachers would be inspired to use a similar style of presentation.

From the primary angle, the work contained and the style of presentation would ensure that pupils involved in investigation work would proceed in a standard form. The layout of the sheets would enable them to record and interpret their results and offers much potential for extension work.

Overall, this book is very readable and offers much to a wide variety of pupils. I would certainly advocate its inclusion as a



group set and one which could be share between Science and Technology. It might even get some of the staff from both departments working closer together. What might happen then!

Appropriate content	////
Pupil/student use	////
Teacher resource	////
Visuals	////
Overall style	////
Generic use	=
One of a series	=
Photocopiable	=
Pupil/student activities	=
Cross-curricular	=



### STEP Design and Technology: Resistant Materials

This new publication by Davies and Goodier relates the work that students will be involved in at their schools with examples from industrial practice. The book is divided into two parts. Part one contains six case studies, each of which investigates the way a company makes and designs products, while part two looks at general material and focuses on product development, materials, fabrication techniques and provides the reader with a glossary of technological terms.

This book will provide a valuable resource to teachers and students alike. Although the material is directed toward students following GCSE courses; A-level students will find the material invaluable while developing their case study work. At university, undergraduates following courses in industrial design and product design will find the publication a useful aid to their studies.

The strength of this book is its interactive approach and the way the material develops as one delves more deeply into the publication. The photography and graphics are first class and running through each case study are common "spines of activity". Panels coloured yellow are "You try it....." activities. Panels coloured green and yellow give the reader "More about ....." information and lead into factual information described in more detail in part two of the book. Orange panels provide the student with a task, usually of two or three parts, which may form part or all of his/her course work.

Each of the case studies is well chosen, with each providing a different focus of study. The depth of work is at the correct level to stimulate Key Stage 4 (and higher) students, the material is interesting and written in a stimulating manner. When the study introduces technological words which may be unfamiliar, these are printed in a bold font and the student is encouraged to read further about the concept in part two.

The first case study looks at a jeweller, Margaret Turner, and focuses on the growth

and development of a small company, firstly developing a corporate image. It then discusses generating design ideas, modelling, manufacturing, introduces concepts of CAD and lost wax casting and includes details on hand and machine jewellery making techniques.

The second study focuses on a company producing modular systems of play equipment, Wicksteed Leisure Limited. It looks at using British Standards to produce quality and safety conscious products. It examines how ergonomics and research findings help the company develop their systems. The study goes on to discuss environmental issues, finishing techniques, designing jigs and producing appropriate fixtures and fastenings.

The third study looks at a company producing goods for the consumer hi-fi market, called Arcam. The investigation focuses on product strategies, developing design briefs, sequential engineering, reducing costs by modifying designs, ways of fabricating, organising production lines, advertising and marketing.

Study four investigates Racial Transcom Limited, which is a specialist IT company whose work develops EFTPOS (Electronic Funds Transfer at Point Of Sale) machines. The study looks at team consultation, the importance of teamwork, consultation with projected users and the use of CAD/CAM in manufacturing a mould for thermoplastic injection for the product body.

President Office Furniture is subject of the fifth study which looks at designing and manufacturing an innovative product by analysing past products and by researching present user needs, using models to test prototypes and using CAD/CAM and CNC machines to control stock, to aid design and for use in the manufacturing process.

The final study looks at Naim Audio Limited which produces very high quality audio equipment. It focuses on decisions about the choice of specific materials, provides insights into the production of PCB techniques and gives an overview of the development of the company and its growth

**STEP Design and Technology: Resistant Materials**  
John Davies and Alan Goodier  
Cambridge University Press: £7.50  
ISBN 0521 49873 2

*Reviewed by Les Porter, Professional Studies Lecturer, Brunel University*

**STEP Design and Technology: Food**  
Beryl Austoni and Alan Goodier  
Cambridge University Press: £5.95  
ISBN: 0 521 49874 0

*Reviewed by Jenny Jupe, Head of Technology, Selly Park Technology College for Girls*



from very small foundations into a company with a large export market.

Part two of the book provides a wealth of subject knowledge and discusses areas that many students have misconceptions and muddled ideas about. In this section topics such as product development, specification development, ergonomics, anthropometrics, market research, questionnaire design, quality control, quality assurance and risk assessment are all explained and illustrated in a way that makes exciting reading. The way that this section is written makes it difficult to put the book down until one reaches the end of the chapter.

The chapters on materials, fabrication techniques and production techniques are again well illustrated and well explained, providing lots of examples which are familiar to the majority of students following a GCSE resistant materials course.

There are many books on the market that attempt to deliver the material contained in this book, but few do it as well as this publication. This book provides stimulus material of a high level, is well written and beautifully illustrated. It provides a mixture of fact and starting points that would allow the student and the teacher to develop differentiated work according to the needs of the individual student. The book has a finely judged balance of providing factual information and developing study skills such as the analytical techniques and student reflections that are now required by the GCSE examination boards. My only reservation is that there are so many tasks and starting points provided that the student could spend the whole of the GCSE course undertaking the activities described in the book, getting so involved with the concepts described, that other important elements of the GCSE course may fall by the wayside.

A highly recommended book. Others in the series are:

Design and technology Textiles ISBN 0521 4839 1

Design and technology Electronics and Control Systems ISBN 0 521 49961 5

### STEP Design and Technology: Food

The reader must not be put off by the brevity of the title or the somewhat uninspiring photographs on the front cover of this little book – its pages pack some very worthy information of use to all teachers of food technology. This book puts to one side the physical, chemical and nutritional properties of food and relates the work that students will be involved in to industrial practices. There are three case studies, each of which looks at the way a company designs and makes products.

An initial page sets out the stages of product development, then the book continues with the following sections:

**Research**, including some useful observations about trends in eating patterns;

**Developing New Products**, through a focus on breakfast cereals as made by the Weetabix company;

**Product Design**, with clear information about quality control and quality assurance systems;

**Systems**, more of which later;

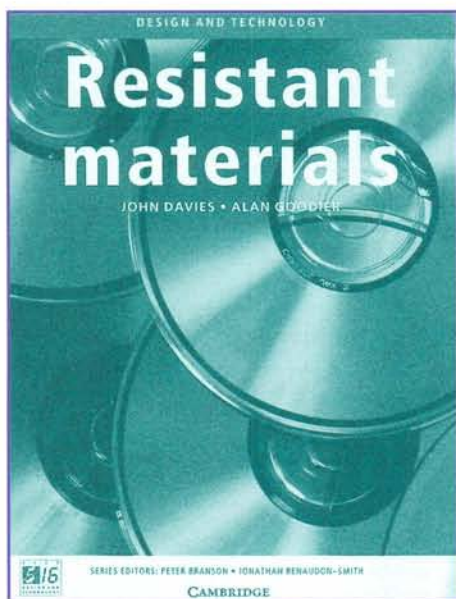
**Selling products**, through a case study of the Pret-A-Manger Sandwich Company;

**Packaging Food**, taking a materials approach through a study of Cryovac, the packaging division of W.R. Grace & Co.

The overall style of the book is very accessible to teachers, although I would suggest that it is aimed at the middle to higher ability pupil and probably of greater use to pupils in Key Stage 4 than in the foundation years. Placed strategically throughout the text are task boxes, which present the pupils with coursework activities, focused practical tasks, disassembly/evaluation activities and some design and make assignments. Small green boxes provide cross references to some areas of the text by suggesting to pupils that they may find out **More about...** Each section concludes with a bullet point summary of what the pupil should now understand and this acts as a quick reference to what the chapter contains. For the teacher the bullet points serve as a set of learning objectives – useful when developing the programme of learning.

Appropriate content	////
Pupil/student use	////
Teacher resource	////
Visuals	////
Overall style	////
Generic use	←
One of a series	←
Photocopiable	
Pupil/student activities	←
Cross-curricular	←



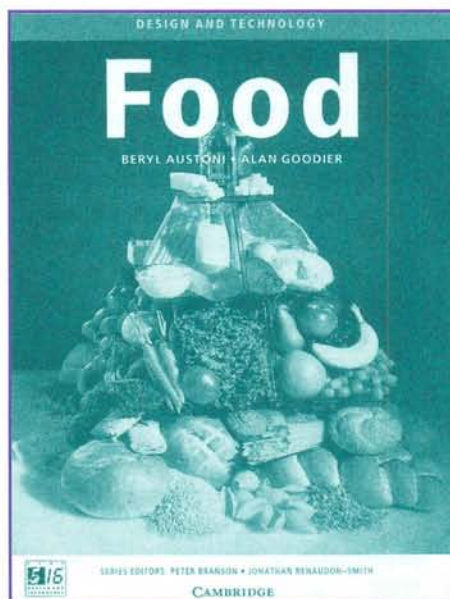


Each section makes appropriate use of industrial terminology, and provides comparisons between the food industry and other manufacturing industries. Although now quite a familiar topic, sensory testing is clearly dealt with in the context of the Weetabix company, further clarifying the procedure and purpose of various techniques to achieve quality control. A small product design section deals with the importance of concept development and prototyping before factory trials begin and this is followed by a systems section.

### Systems

The strength of this book undoubtedly comes from this excellent section. After defining systems, both hard and soft systems typically used in the manufacturing process are explained to the reader in clear and well exemplified terms. Standard flow chart symbols are used to present the flow diagrams, which include open and closed loop control systems, with feedback to ensure quality assurance. This section will be of great help in the teaching of GCSE Food Technology and in both the vocational and IT core skills units of GNVQ Manufacturing.

It is a pity that the chapter titles are so bland as they do not convey to the reader the quality of the information contained within. This is typical of the next section 'Selling Sandwiches' - a case study of the Pret-A-Manger chain of sandwich shops, begun in



London in 1986. One interesting inclusion is that of a GANNT chart showing the production schedule for one 24-hour period. This is then followed up with a pupil activity to produce a similar GANNT using a spreadsheet. The six key points for production give this section a real sense of purpose and could usefully be adopted for raising standards in classroom practice!

Refreshingly, the section on packaging deals with the role and function of materials needed for packaging food and includes information on environmental issues which could stimulate some good pupil discussion. The use of plastics in packaging is dealt with quite comprehensively through the study of Cryovac, the packaging division of W.R. Grace & Co. Finally the glossary, although only containing 22 word or phrases, has been very selectively put together to include those pertinent to product development and manufacture.

At a time when appropriate resources to support the new courses in GCSE and GNVQ are at a premium I would certainly recommend this book, at £5.95, as being of use to all design and technology departments offering food related courses.

Appropriate content	////
Pupil/student use	///
Teacher resource	////
Visuals	////
Overall style	////
Generic use	
One of a series	=
Photocopiable	
Pupil/student activities	=
Cross-curricular	=



# TERU Diagnostic Tests in Design and Technology

Hodder & Stoughton

Ltd: £9.99

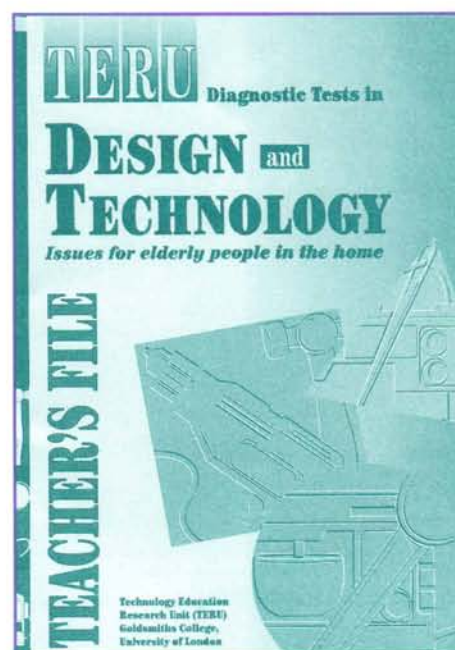
ISBN 0 340 58773 3

*Reviewed by Bill  
Goddard, University  
of Greenwich*

The specimen set of TERU materials which I have been able to examine included four test forms as well as a Teacher's File. The particular focus of the materials was on 'Issues for elderly people in the home'. According to the Teacher's File the focus on the elderly has been taken since "the elderly form a user-group with particular needs and preferences in relation to their interaction with products." This is useful in that it provides a focus on a real context with which pupils ought to be able to identify. The Teacher's File is helpful in that it enables teachers to provide structured tests across the range of design and technology capabilities through its own explanatory format. After initial explanations of the nature of capability, the types of activity which will enable pupils to develop capability, and what this means for assessment, the tests focus on how they can be used for making either focused or holistic assessments of pupil's capability. The tests are paper and pencil exercises which are intended to be used as a review point at different stages of pupil development. There are four foci - Starting Points, Developing your Ideas, Making your Ideas Happen, and Evaluating Ideas and Products. The intention is that these tests should be used to assess progress within a structured programme of learning.

The Teacher's File is particularly useful in giving a step-by-step guide to running the tests. Pupil Task Sheets have been provided in banded form in three bands and covering working with construction materials, textiles, and food. Exemplification samples are featured in the file to enable teachers to judge which band may be most appropriate for individual pupils. These samples will also help teachers to make assessments of pupils against the test responses. Clear instructions are given concerning the preparation, running, and marking of the tests as well as guidance on the provision of feedback, reporting and recording of the assessments. A teacher's script is provided for each of the four tests. This material is useful in the sense that it provides clear guidelines for the effective review of pupil capabilities.

I believe that it is a valuable diagnostic resource for teachers. In particular it is



useful in providing support for pupils as well as teachers since it provides a clear structure within which a review of capability can take place, with pupils having a clear framework through which their assessment occurs. Equally, teachers are helped to provide clear feedback through the provision of a clear framework for action.

The test forms are helpful since all work, in each of the four tests, is able to be done on one form - an A2 sheet has been cleverly folded into an A4 size form. Each section clearly identifies what the pupil needs to do. The test forms and the teacher's file are well presented and easily readable. However, although the Teacher's File costs £9.99 the test papers are advertised at £8.99 per set for 20 copies. Since there are four tests the accumulated costs for even one set of each test paper might be an important issue for teachers to consider in terms of their budgets.

The language is clear in the test papers and the Teacher's File and the design and layout is comfortable to work with. I would recommend the tests for teacher's use.

Appropriate content	////
Pupil/student use	////
Teacher resource	////
Visuals	N/A
Overall style	////
Generic use	←
One of a series	
Photocopiable	
Pupil/student activities	←
Cross-curricular	←



### Understanding Practice in Design and Technology

This book is largely based on two research projects conducted at the Technology Education Research Unit at Goldsmiths College; the APU project for the Schools Examination and Assessment Council (1985 to 1991) and the Understanding Technological Approaches (UTA) project for ESRC which published its final report in 1994. The APU project dealt with the assessment of design and technology and the more recent UTA project with models of teaching and learning in design and technology. Apart from providing an overview of each project and its findings, emphasising how the UTA project supports the findings of the APU project, the authors also draw out a number of other issues from their research which are of vital importance to design and technology teaching.

These are identified as "agenda points": the context and hierarchy of tasks, the structuring of activities, pupil autonomy, the iteration of action and reflection in design and technology capability, collaborative activity, individual differences and progression. Some chapters cover ground which will be largely familiar to the majority of readers, for example the emergence of design and technology as a National Curriculum subject and its justification, but there are also some interesting perspectives on these issues, including the effect that the original AT1, Identifying Needs and Opportunities, had upon teaching. The authors discuss the misunderstanding which inevitably followed, with teachers feeling compelled to allow every pupil to set its own agenda "while they presided frenetically over the chaos of a studio/workshop in which every child is doing something different".

Turning to the findings of the newer of the two projects on which the book is based, the UTA project, perhaps the most startling finding is the radical difference between the project work found at Key Stage 2 and that found at Key Stage 3. At Key Stage 2, "project work is typified by uncertainty and the need to work things out with the teacher", six weeks later in the life of the pupil, having arrived at secondary school, "Key Stage 3 project work is typified by

certainty and predictability, under the tight control of the teacher". Teachers at Key Stage 3 were found to be directing pupils, rather than supporting them as had been the case at Key Stage 2, and the focus of the instruction was upon the acquisition of making skills.

In other words, having instilled a high measure of autonomy, independence and flexibility in our pupils, we suddenly allow them little freedom of action and require them to produce almost identical outcomes, resulting in pupils who become dependent upon their teacher and are unwilling to use their own developing capability. Although this is not explicitly stated in the findings, I would suggest that this is because of the historically materials-based foundations of design and technology in secondary education, and the perceived need to teach making skills in a variety of media to pupils, before they embark on their GCSE course.

In addition, at Key Stage 2 there is a high level of concern for the needs of the end user. However by Key Stage 3 the end user is used as a context (making an enamelled brooch for Mum) but pupils are not seeking to match their product to a real user, thus not matching the product to purpose as part of their evaluation criteria. The authors suggest that these disparities are in part due to teachers at different key stages making different decisions about the balance between the product purpose and the teaching purpose, the relationship between particularised tasks and generalised contexts and the balance between teacher control and pupil autonomy. There is a clear message here: transition between Key Stage 2 and 3 needs to be carefully managed, with increased communication between teachers.

The chapter dealing with progression towards capability is amply illustrated, although sadly many of the photographs are of poor quality. It is presented in a format which would be useful to in-service providers and teacher trainers. The chapter on differentiation was mainly concerned with the analysis of pupil work which was provided by the APU survey using the criteria of reflective, active and integrated methods of working. This was referred to as

### Understanding Practice in Design and Technology

(2nd ed.)

Richard Kimbell, Kay Stables and Richard Green

Open University Press

ISBN 0335 19555 5: £42.50

ISBN 0335 19554 7: £12.99

*Reviewed by Melanie Fasciato*

### Teaching Design and Technology

(2nd ed.)

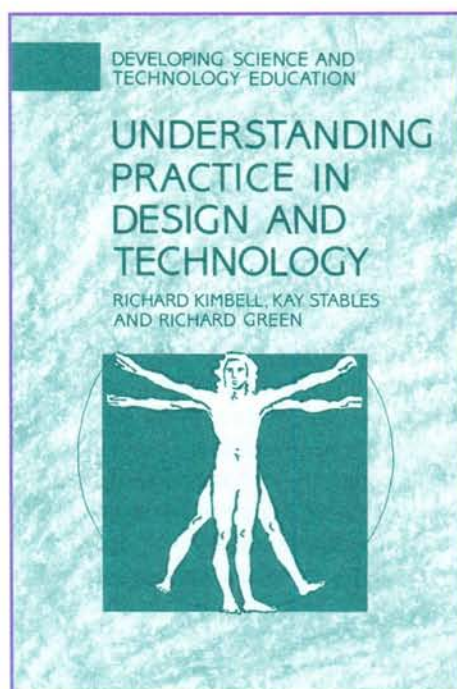
John Eggleston  
Open University Press

ISBN 0335 19577 6: £42.50

ISBN 0335 19502 4: £12.99

*Reviewed by John Hill, Trinity and All Saints*





"fingerprinting", and highlighted the differences between girls and boys in both their methods of working and their apparent preferences for different contexts in which to carry out design and make tasks.

A final chapter, 'Helping teachers with the UK National Curriculum', considered the issues which had been raised in the previous chapters in relation to how the practitioner in the classroom may tackle them. I felt that this was a useful chapter as it would help to clarify the underlying philosophy of the latest orders for design and technology (1995) and reflect this back onto the issues raised in the book.

It should be stated that both projects were firmly based on design and technology as taught in school, covering all four key stages, and the multiplicity of examples with which the text is illustrated serve to emphasise the point that although this is an academic book, it is not a book solely for academics. As a lecturer in design and technology, I will certainly want this book to be required reading for my students, yet all who are interested in design and technology education will find much of value in this accessible text.

### Teaching Design and Technology

This is the second edition of a much respected and best-selling book in the Developing Science and Technology Education series. The need for a substantially updated new edition is a reflection of the changes, not to say trauma, undergone by the subject area since the first edition was published in 1992.

The first three chapters chart the early development of the subject from its low status origins to its present high-profile and established position in the National Curriculum. These chapters provide a useful insight into how various agencies, pressure groups and other interested parties influenced the nature of, and revisions to, National Curriculum design and technology.

Chapter four provides a concise introduction to assessment initiatives and describes current assessment requirements. Chapter five examines gender, race and equal opportunity and concludes that any restrictions in experience and achievement are arbitrary and often the outcome of self-fulfilling prophecy. Chapter six highlights the difficulties associated with managing design and technology and encourages teachers to see management as a crucial and pro-active activity.

Chapter seven describes examples of design and technology in practice. It includes case studies from Key Stages 1, 2 and 3 (two studies). The case studies illustrate the cross-curricular nature of design and technology activity as utilising skills and knowledge from a wide range of subject areas (although perhaps some might regard this as a weakness of the subject). The author points out that although the case studies are predominantly paper projects, this is not surprising in the early stage in developing design and technology. It is to be hoped that any future editions of the book are able to provide a wider range of case studies.

The generally optimistic tone of the book is tempered in chapter eight by acknowledging that continuing uncertainties exist and that teachers of design and technology "have to combat not only the entrenched attitudes of

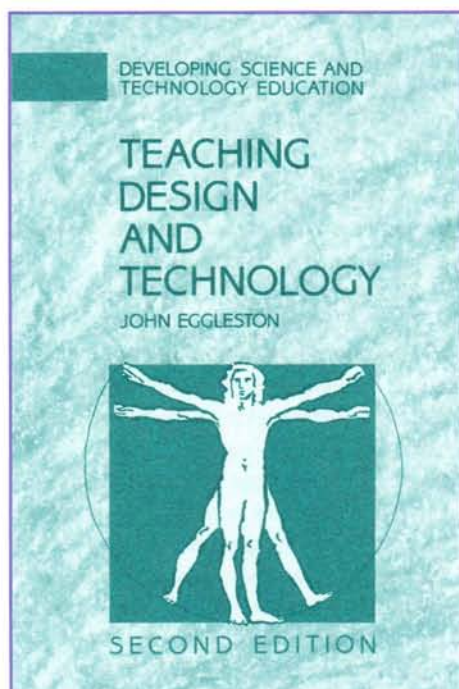
Appropriate content	////
Pupil/student use	////
Teacher resource	////
Visuals	///
Overall style	///

Generic use	
One of a series	=
Photocopiable	
Pupil/student activities	
Cross-curricular	

Appropriate content	////
Pupil/student use	////
Teacher resource	////
Visuals	///
Overall style	///

Generic use	
One of a series	=
Photocopiable	
Pupil/student activities	
Cross-curricular	





school and society but also to fight for teaching time, resources and recognition."

Although the pace and scope of the book can leave one breathless, the result is that the reader wants to know more, and hurries to the library to look up the articles listed in the up to date reference lists for each chapter. Even experienced practitioners will find something new and relevant.

Anyone who is still in doubt as to the benefits to be obtained by studying design and technology should read this book. Enthusiasm, common sense and understanding of the subject permeate the text. The book is warmly recommended and is essential reading for everyone with an interest in the teaching and learning of design and technology.

The paperback edition at £12.99 represents good value for money; the hardback edition at £42.50 is a must for the library shelf!

The package is in two main parts. The first is an information pack. This is presented in a wallet format. The wallet has full colour photographs and technical graphics. Inside the wallet there are a range of sheets, A3 in format, folded to make four-sided A4 information sheets. These are presented in monochrome format, with photographs and technical illustrations.

The first sheet appears to be intended primarily for teachers, and is a descriptor of how to use the package in order to gain the most from a visit to Alton Towers. The rest of the sheets, with the exception of the last two, have detailed information with questions related to work to be conducted before and after a visit to the theme park. The sheets are divided into nine topic areas.

The last two sheets relate to guiding children through a visit to the park, and make suggestions for helping the children to plan their day in relation to the observations to be conducted. The final sheet aids the children in making the most of their observations and follow up activities. Although I could find no reference, I assume from the style and layout as well as from the gist of the text, that the sheets are photocopyable. This is something that perhaps the publisher may want to make clear.

The second part of the pack is a video, which complements the worksheets in the wallet. Here the pack comes to life, with the printed matter of the worksheets being reinforced with live action material showing the rides in action. Many of the points outlined in the worksheets are further emphasised in the video. The video follows the same format as the worksheets, in terms of the nine topics covered. These are:

- **Mechanisms**

1. Linear Motion
2. Rotary Motion
3. Complex Motion

- **Control**

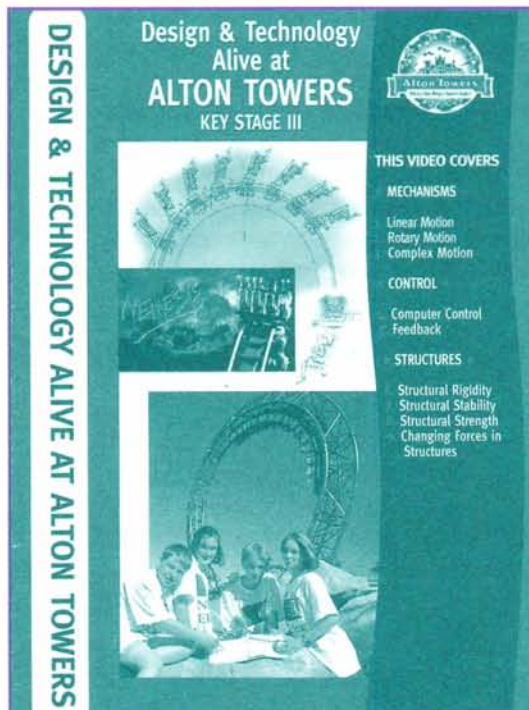
4. Computer Control
5. Feedback

### D&T Alive at Alton Towers Key Stage 3

Alan Jervis, Torben Steeg, Geoff Wake  
£9.99

*Reviewed by John Durrell*





The video and worksheets use a questioning style. Some of the questions appear searching, and may extend some pupils to the full.

The package does not appear to be intended as a stand-alone item. After the child has gained knowledge and understanding of the topics, teachers are then, to a large extent, left to structure their own projects, in order to utilise the information gained. It is felt that the materials would develop the children's understanding of the applications of mechanisms, structures and control, but that many of the concepts related to the detailed workings of the principles are not fully developed. The teachers support materials could be more substantial with suggestions to teachers as to where they might direct children to look in order to gain backup support to answer the questions posed.

#### • Structures

6. Structural Rigidity
7. Structural Stability
8. Structural Strength
9. Changing Forces in Structures

The materials are designed especially for pupils studying design and technology at Key Stage 3, they have been well planned and well presented. The worksheets have a range of questions which relate to observations to be made at the theme park, as well as outlining some practical work with the above topics, which may be conducted at school. The video supports the programme by focusing the questions raised in the worksheets to specific areas of the rides. It is felt however that a visit to Alton Towers would be an essential part of the programme, as many of the questions posed in both the video and the worksheets relied on children's first hand observations of the rides. Of course such a trip is an essential part of the programme, as many of the questions posed in both the video and the worksheets, relied on children's first hand observations of the rides. Of course such a trip may be easier to organise for some schools within the geographical location of the park, than for others further afield.

Overall, the material is strong in the area of encouraging children to question how things work, but is weaker in enabling them to find answers. I would recommend the materials as a fun way of learning, but stress that a visit to the theme park is essential if these materials are to be fully utilised. However, with a £9.99 price tag, for both the wallet pack and the video, I would suggest that this is value for money and a resource (particularly if, as I suspect, it is photocopyable), that would be worth investing in.

Appropriate content	✓✓✓
Pupil/student use	✓✓✓
Teacher resource	✓✓✓
Visuals	✓✓✓
Overall style	✓✓✓
Generic use	
One of a series	
Photocopiable	
Pupil/student activities	⇐
Cross-curricular	⇐



*Succeeding with Autocad* is a book about CAD using Autocad. It is split into four sections each covering a different aspect of the topic.

1. A short introduction to Autocad.
2. 2D Drawing.
3. 3D Drawing.
4. 3D Modelling.

The aim of the book is to make the use of Autocad very simple for the user. It covers all of the versions including version 13 for Windows. The teaching is done by working through examples step by step using screen diagrams to show where you are up to and written instructions. After the early examples they move into the different commands available in more detail using different exercises.

To overcome the problem of the various types of input device and versions all of the commands are input using the keyboard.

As I worked through the examples and read the other sections I found the book very clear and easy to follow. I liked the many screen diagrams which helped me to understand the work and to make sure I was doing it correctly. My students liked this aspect of the book as well.

There were problems with using just the keyboard because if you were using a different input device or version the methods and menus differed which resulted in confusion at times. The problems could be overcome if you knew what you were doing but students are not experts and they would soon give up.

Another problem was that on several occasions the step by step guide and the diagrams were on different pages. This did not bother me when I was reading the book but was annoying at times when I was at the computer working on the examples. Basically I did not have enough hands to keep turning the pages and use the computer.

There were several areas which I felt were missing from the book. Loading and configuring Autocad was not touched as it was assumed that a systems person would be there to do it for you. Not all schools and colleges have this facility so it would be helpful to have this topic included to help the teacher set up the software.

Secondly, in the introduction to Autocad the author mentions the uses it can be put to. However, this could have been improved by some professional drawings to show what he was talking about and inspire the student by saying this is what is possible using the software. I am sure that it would be possible to find people who would be more than willing to let their work be used.

Having used the book I feel it achieves its aim. It is easy to use and my students were full of praise for the layout as they could work through the examples very easily. It must be pointed out that some of the examples were quite complex but it was made easy by the instructions and diagrams in the book. The only problems they faced were the ones already noted.

I can recommend this book to all DATA members who use Autocad as a useful aid in its teaching or as a reference book when creating your own work as it is so well presented you can easily follow the various sections when they are needed.

### Succeeding with Autocad

Barry Hawkes  
McGraw Hill: £16.95  
ISBN: 0 07 709071 3

*Reviewed by  
P Whittaker*

Appropriate content	///
Pupil/student use	///
Teacher resource	////
Visuals	////
Overall style	///
Generic use	
One of a series	
Photocopiable	
Pupil/student activities	<=
Cross-curricular	<=



### Tickle the Senses!

Dorset D&T Advisory

Team: £45

ISBN 0 85216 735 0

*Reviewed by Ali*

*Farrell, Technology*

*Education Consultant*

*Tickle the Senses* is a resource pack for supporting the teaching of sensory evaluation and industrial practices related to food product development. The pack contains photocopiable Teacher's Notes and Pupil Worksheets (each in a separate booklet) and is as much a resource to develop teachers' as pupils' understanding in this key aspect of food technology. This is very welcome at a time where design and technology teachers are increasingly required to update their knowledge of the industrial sector about which they are teaching.

This is a useful resource which teachers can either dip into or use more extensively. It goes beyond a surface treatment of the sensory analysis aspect of the food technology curriculum whilst remaining accessible and fun. The fact that it is flexible as a resource, can be photocopied for use within the purchasing institution and contains a photobank of quality food images which can be used in a variety of ways with pupils of all ages, makes this a worthwhile investment.

The Teacher's Notes provide some well-thought out advice on progression, suggesting which aspects of the knowledge, skills and understanding relating to sensory evaluation might be tackled by pupils from Key Stages 1-4 and how this learning may be organised. This is cross-referenced to the Programmes of Study for Key Stages 1, 2 and 3. Teacher worksheets provide guidance on the resources and preparation needed to teach pupils about sensory analysis. This very down-to-earth approach is to be applauded.

The Pupil Worksheets are designed to be used in conjunction with the teacher worksheets. Aimed at Key Stage 2 and Key Stage 3, teachers have commented that they are particularly useful for pupils with special educational needs. The language and layout of the pupil worksheets make the concepts, information and activities very accessible although, personally, I found the variety of fonts and styles used to be distracting and feel the worksheets would have benefited from more informative graphics. Particularly noteworthy features include activities which help pupils to build up a word bank of descriptive words; clear, straightforward explanations of key sensory vocabulary; hints, tips and strategies for carrying out sensory tests; product development activities; a table of random numbers for use to code products for testing and a glossary of 'what you should know'.

The pack also includes a set of photographs of foods, useful as a visual stimulus and to develop pupils' descriptive vocabulary and their technical terminology.

Appropriate content	////
Pupil/student use	////
Teacher resource	////
Visuals	///
Overall style	///
Generic use	
One of a series	
Photocopiable	⇐
Pupil/student activities	⇐
Cross-curricular	⇐



This is a software package for use on the Acorn Archimedes range of computers. It consists of three discs, four information sheets and 14 worksheets and is aimed at Key Stages 3 and 4. It is obtainable free from the British Meat Education Service and whilst there are activities connected with the use of meat, students who do not eat meat are not excluded from the resource as they can use the programme as a stimulus and adapt the situation to suit their interpretation of the materials presented. Is there ever such a thing as a free resource? It is to be expected that an industry produced educational resource, whilst aiding education, seeks to influence consumer awareness of their product. It is part of a teacher's strategy to encourage a critical attitude in pupils towards all industry produced educational material rather than to refuse its use.

The pack is designed to allow pupils to work through a mini enterprise study. The software introduces a team of four teenagers, Danny, Steffi, Mandy and Tim, who are setting up their own fast food business. It shows how team members need to meet first to identify strategies and to agree a way forward and then to review progress. It emphasises the amount of work each individual is given responsibility for and the need to present findings to the group. The use of the four young people as the vehicle for the presentation of lines of investigation is an appealing strategy and should make it easy for students to follow the pathway through the options offered. This format also allows for individual or group work in a class.

The most successful lines of investigation are as might be expected, healthy eating and nutrition, hygiene requirements and market research. The healthy eating section has a useful nutrition database which is up to date as it uses DRVs (Dietary Reference Values) and does allow for some limited modelling to inform design decisions. It is a relatively painless way into nutrition modelling, an experience which can then be built on by the more complex and expensive programmes. There is also a useful costs calculator producing a spreadsheet for costing. This would be particularly useful for the lower ability pupil who finds the concept of unit

costing difficult. This encourages the appropriate use of IT to support student work.

But there is a peculiar lack of business rigour in the financial considerations where Tim calculates start up costs. This area is not supported by an information sheet although the costs of setting up a business are the subject of one question on the work sheet. Teaching or further resources will be needed to promote real understanding. In calculating the retail cost of their suggested products the students are told to 'double the production costs' to produce a retail price. There is little identification for the reasons for this, labour costs and the wages they will pay are not mentioned. I am sure we have all taught mini enterprise to the lower ability groups who announce a profit because they were given ingredients, borrowed equipment and did not calculate energy costs! The simplistic approach of the software can be augmented by a more rigorous support from teacher.

The icons on the software are easy to identify and the students should be able to interact easily with the programme. A data disc is supplied which contains graphics which students can use to help present their work or for teachers to customise worksheets. There is an information file, Meat File, which presents statistical information on the nutritional value of meat and its role in a balanced diet. The bar charts and pie charts could also be used independently as resource materials for other projects or for use in data response questions. Of particular value to teachers is the fact that the worksheets are also presented on the data disc. This will allow for the ease of modification to meet the needs of the individual class or school. They could easily be adapted to produce differentiated worksheets, a boon for the busy teacher.

The pack is worth using with students. The software is interactive but also requires the student to use the worksheets for further depth of study. A food technology teacher could use this resource at the end of Key Stage 3 or early Key Stage 4 to establish the demands required in setting up a fast food business. It could form a foundation for the more complex food manufacturing knowledge and understanding required by Key Stage 4 food technology courses.

**The Fast Food Diner**  
British Meat  
Education: Free

*Reviewed by*  
*Margaret Jepson,*  
*Liverpool John*  
*Moore's University*

Appropriate content	///
Pupil/student use	////
Teacher resource	////
Visuals	////
Overall style	////
Generic use	
One of a series	
Photocopiable	
Pupil/student activities	=
Cross-curricular	=



**The Journal of Design and Technology Education** is the professional journal of the Design and Technology Association. DATA is a recognised professional association which represents all those involved in design and technology education. The journal provides a forum for the exchange of views on design and technology education and welcomes contributions to all sections.

The journal has three sections:

- Research
- Curriculum development
- Reviews

All contributions should be supplied as word-processed text on disk, preferably in an Apple Mac or IBM-compatible format, with a hard copy, double spaced. Where possible, graphics, tables and other illustrations should also be supplied on disk. The author's name, title and contact details should also be stated, as well as the section for which the article is intended. Contributors should contact DATA for further information before submitting material as additional guidance is available.

## Research

The research section of the journal is refereed and the normal academic criteria will apply. An abstract of 100-150 words must be included at the start of each paper, as well as six key words for indexing. Papers should usually be between 3,000-5,000 words though in exceptional circumstances papers of a maximum of 8,000 words will be considered. Footnotes to the text should be avoided where possible but, if essential, should be placed at the end of the paper. Full references must be supplied in the following standard forms:

GRONLUND, N. E. and LINN, R. L. (1990). *Measurement and Evaluation in Teaching* (6th edn) New York: Macmillan.

ROBERTS, T. (1991). 'Gender and the influence of evaluation on self-assessments in achievement settings', *Psychological Bulletin*, 109, 2, 297-308.

The research papers in the *Journal of Design and Technology Education* will emphasise the provision of a better understanding of design and technology and the improvement of the quality of design and technology education in schools, colleges and universities.

## Curriculum development

This section has a number of sub-sections focusing on particular areas (primary, secondary, initial teacher education, special needs, etc) although some articles may be relevant to more than one area. The section contains reports of a less formal kind on developments in and aspects of interest to those involved in design and technology. Please send a short synopsis (about 150 words) in advance to see whether your article is likely to be of interest.

Contributions should be written in straightforward language and an informal style and should identify with a particular audience. Articles should be 1,000-2,000 words long and full references should be supplied where appropriate, including details of any material and equipment mentioned. Six key words must be supplied for indexing.

Please include photographs where possible. Any illustrations (planning sheets, pupils' work, etc) should be on separate sheets, clearly labelled, and should be as clear as possible to assist reproduction.

Where possible please keep a copy of the article and supporting material since the editor takes no responsibility for material which may be lost in the post.

## Reviews

This section reviews books, software (including CD-ROMs), teaching resources and special events.

Reviews should be 500-800 words long and should follow the format outlined below. They should include a description of the book/resource and its intended target and should evaluate:

- the content of the book/resource
- its effectiveness in catering for its target audience
- its value to the user
- its capacity to support pupils and/or teachers
- its particular strengths and any weaknesses.

Book reviews should also include an evaluation of the language and physical form (design and layout, illustrations etc) of the book.

## Other contributions

Contributions are also welcomed for the following regular sections:

*Personal perspectives* – these should be about 800 words, giving your views on design and technology issues.

*Letters* – These should be short and punchy, and should clearly state which article/letter they are responding to, or to which issue they refer.

*Noticeboard* – Information on conferences and other events, initiatives, etc.