

Review

Environment, Ethics and Cultures Design and Technology Education's Contribution to Sustainable Global Futures

Title:	Environment, Ethics and Cultures Design and Technology Education's Contribution to Sustainable Global Futures
Authors:	Kay Stables and Steve Keirl
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Following the tremendous effort shown by the design and technology (D&T) education profession to maintain its position in the UK national curriculum this book is a timely reminder to re-establish the debate about the values embedded in our subject. It is a book skilfully put together by Kay Stables and Steve Keirl both eminent international education researchers and authors, however both have considerable experience of classroom teaching and this is evident in their chapters. They have brought together the work of other eminent D&T and technology international researchers, evident from the list of author biographical notes, to give us a publication with a truly international perspective. It is this variety that makes it such an engrossing book. In doing this review I have resisted the temptation to name individual authors but have used chapter titles as many are unusual and convey significant messages about the content of this book. For me it was a re-education about issues such as sustainability which are, or can be, embedded in D&T but seem to have been forgotten as we've dealt with pressing issues concerning standards, targets, assessment criteria and the like. Inevitably the style of writing varies but this adds considerable interest and readability with issues conveyed in the title dealt with appropriately but also with a smattering of humour and unusual ways of using text to get serious messages through to the reader.

Who is this book for?

The obvious answer is education researchers, particularly D&T but additionally researchers in any design discipline will find a wealth of interesting material. Additionally there is no doubt that any practicing D&T teacher will find it opens up new thinking and opportunities they may have

not considered possible. However it is about D&T's contribution to wider issues which may not be seen as being part of any particular subject's remit therefore I suggest it would be beneficial reading for teachers engaged in cross curricular developments, for example teachers of science and geography. No doubt curriculum developers in schools are likely to find it helpful particularly in the newly formed UK academies with the freedom to develop their own curriculum.

I have reservations that the title may not attract this wider audience. *'Environment, Ethics and Cultures'* may appeal to those interested in these issues but my concern is that *'Design and Technology'* and *'education'* are not sufficiently prominent to ensure D&T teachers in particular and educationalists in general are attracted. For example those teaching in university design departments may not see that it could be of interest to them. A further point is that the UK Engineering Council's Accreditation of Higher Education Programmes: UK Standard for Professional Engineering Competence includes the *'Economic, legal, social, ethical and environmental'* context of engineering and there are several chapters that could be useful to engineering lecturers. Hopefully the publishers will promote this book as being of importance to all educators concerned with design, technology and manufacturing and so capture this wider audience

Format of the book

Section 1 starts with an excellent introduction by the editors followed by three chapters dealing with what are best described as broad based design issues set within a global perspective, several with hints of a political

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overview. However it was the introduction that set the pattern for the way I read this book. It introduces the work of contributing authors in such an enthusiastic way that I found myself turning to and reading chapters written by these authors. I'm sure the editors did not intend this to happen but who could resist turning to a chapter with the title 'KATOGRIFA IN-FLUX: A PEDAGOGICAL TOOL TO CHALLENGE EUROCENTRISM IN POST-COMPULSORY EDUCATION FOR SUSTAINABLE DESIGN' – I really did want to know what this was about and the author documents a particularly enlightening research methodology carefully implemented with clear discussion and conclusion. I wasn't disappointed. Similarly when I turned to the chapter titled '*IN(DI)GENEITY IN DESIGN AND TECHNOLOGY EDUCATION: ANIMATING AND ECOLOGICAL CROSS-CULTURAL CONVERSATION*' I was alarmed to find myself reading a sort of cartoon script but quickly realised this was an unusually creative way of conveying very serious messages about issues in the title. I found it humorous and entertaining as well as educational. So the scene was set - I jumped about this book selecting each chapter by the attractiveness of titles. It became a sort of 'coffee table' book to be picked up and read in short doses. On reflection this was entirely appropriate as I found that to fully appreciate each chapter it was necessary to reflect on the messages being conveyed by that author. Read it and think about it.

Throughout the book authors are vigilant in referencing their work and each chapter concludes with comprehensive references. The breadth of international material accessed is impressive as several authors extend their research into government and international documents as well as texts beyond those usually found in education focused books. The total of these references can only be seen as an exceptional resource for future researchers.

Section 2 focuses on global D&T education issues but within the context of education where the learner is at the centre with ownership of their education. For me this was a real eye opener as I've become steeped in UK D&T and not fully realised that D&T in other parts of the world may be very different. For those D&T people concerned about making as part of designing there is a delightful chapter headed 'AGENCY AND UNDERSTANDING' where the author uses a heading 'MAKING AND BEING HUMAN' with a quote that '*development of our brain was crucial, but, without the capabilities of the hand, the brain was an agent without an actor.*' This is followed by a short

discussion of the work by of A. N. Whitehead an eminent philosopher from the 1920'/30's. Whitehead's work has informed researchers since then so inevitably I diverted my attention to re-read some of his essays (available on the internet), many of his statements being particularly relevant in current educational debates. Worth looking at. Again an element of humour creeps in when the same author asks the question '*Have we been providing the 'McDonald's' version of D&T experience*' – I'll leave you to discover the authors answers to this! In the same section another researcher discussing the D&T curriculum identifies '*what the curriculum is not*' and then uses a heading '*DESIGN AND TECHNOLOGY'S CURRICULUM PLAY*' followed by several thought provoking questions that sets the scene for discussion exposing possible answers. Initially I found myself at odds with this author concerning discussion about a body of knowledge for D&T and his concerns about the '*hreat to quality D&T by the so-called STEM agenda*'. Surely there is an opportunity for science and D&T to collaborate on issues such as sustainability! Reading on however I found myself agreeing with many of the points made and came to the conclusion that it is about getting the D&T curriculum balance right. This is exactly what this type of book is about – exposing the reader to different points of view so they can formulate their own informed conclusions.

Section 3 is my favourite as I like to read about what D&T teachers are doing in their classrooms and workshops. The authors provide a varied collection of research and development case studies from around the world. Again I was drawn to chapters with unusual titles – how can any D&T educationalist not home in on titles such as '*WE HAVE TO CREATE A WAY TO CATCH FLASHES IN ORDER TO GET ELECTRICITY*' - all about pupils perceptions and ideas about climate change. This author's conclusion and proposals are prefaced with phrases starting with '*Helping children to*' an example being '*Helping children to develop creative ideas*'. Several innovative pedagogical practices are documented. '*SUSTAINABILITY + FUN = A CHANGE IN BEHAVIOUR*' is another example of a researcher in school using a case study approach to develop and trial '*Project F*' (F for fun) based on sustainability and re-cycling issues. For teachers interested in the more entrepreneurial, commercial and consumer aspects of D&T the chapter titled '*THE SHOE SHOW*' documents a D&T project with sufficient detail that, in the hands of a skilled teacher, could be replicated. The discussion about methodology indicates that this could be adapted for other products and projects. The international nature of this book is

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exemplified by a chapter setting out the case of D&T in Botswana. This author points out that D&T based on the culture, history and philosophies of the Euro-Western world does not necessarily embrace sustainability and concludes that indigenous knowledge, materials and technologies should be explored and embedded in D&T education in Botswana. The author's conclusion is that D&T education should be focused on sustainable development. This message is reinforced by other contributing authors and effectively broadens what international D&T education is about. This resulted in me reflecting on what we have been doing in the UK and how we possibly need to reappraise our situation. This theme is explored further in the chapter '*OPENING UP FOUR WALLS*'. Again this author uses the word '*fun*' in a D&T context and I immediately found myself at one with this author as he explains that the basis of the case studies presented 'was a belief that learning how to learn, which questions to ask and where to seek appropriate information are important skills that need to be explicitly taught and nurtured through teaching programs, as is the capacity to learn from and with others.' In his description of the pupils' activities he uses the word '*critiquing*' as a design methodology, a word not regularly used in school D&T in the UK. Perhaps we should look at adopting this and exploring the possibilities. This well detailed chapter is supported by photographs unfortunately not well reproduced making it difficult to appreciate the outcomes of this study.

Throughout this book authors consistently use the word 'learner', with one author producing a two column table (page 95) headed '*Learning targets and expected outcomes*'. A second column headed '*Competence/Does-education enhance learners' capacity for:*' has entries such as '*Learning to learn, Learning to do, Learning to be*' - plus several more. The '*Expected outcomes*' column is full of educational outcomes that bring together what D&T education is all about. Have a look at this table and I'm sure you will be impressed.

Conclusion

Reading this book definitely put me in the position of being 'a learner' – I can assure you that I learned a great deal that certainly enhanced my understanding of the breadth of D&T as an international subject and raised my awareness of opportunities that I have not fully appreciated.