Global Dimensions in design and technology – 'just another thing to think about'?

Kate Jones
University of East London

Abstract

This paper will consider how the design and technology curriculum in secondary schools addresses the issue of Global Dimensions. I will draw on reading, personal experiences as a teacher of 28 years and on observations made in the last year of trainee teachers delivering the Global Dimension which I will refer to in the body of the paper. The article will look at how effectively the key concepts related to the Global Dimension are delivered and will suggest ways of developing a more creative approach to meet the needs of a variety of learners.

Keywords: Global Dimension; Sustainability; Curriculum Dynamics; Ethically Defensible Curriculum; Diversity; Commercial Design Practice.

'We live in one world. What we do affects others, and what others do affects us, as never before. To recognise that we are all members of a world community and that we all have responsibilities to each other is not romantic rhetoric, but modern economic and social reality.' (DfES 2004a)

Introduction

Global issues are a bigger part of children and young people's lives now than ever before. The internet, new technology, television and increased opportunities for travel over the past decade have brought the wider world into our daily lives. UK society today is multidimensional and enhanced by people, cultures, languages, religions, art, technologies, music and literature originating in many different parts of the world. In a 2006 poll of over 2,300 learners aged 11–16, 83% wanted to know more about what is happening in developing countries, 56% thought they should learn about these issues in school and 66% were concerned about poverty in developing countries (MORI 2006). The National Curriculum in England places great emphasis on the importance of giving pupils knowledge of global issues. The Global Dimension is emphasised in the main aims, values and purposes of the National Curriculum which states that 'education influences and reflects the values of society, the kind of society we want to be' (DfES 2008). Education should, according to the National Curriculum, provide a route of equality for all, a healthy and just democracy, a productive economy and sustainable development. This includes valuing the wider groups to which we belong; the diversity of a multicultural society; and the environment in which we live. Education should, according to the Government, encourage pupils to be prepared to engage with the globalisation of economies and society, with new work and leisure patterns and with the expansion of communication technologies. Ultimately pupils should also develop a sense of identity through knowledge and understanding of the local, national, European, Commonwealth and global dimensions of their lives. This article examines the eight key concepts of the Global Dimension as they relate to design and technology (D&T).

Eight key concepts

In order to understand the Global Dimension more clearly, eight key concepts were highlighted and developed in the National Curriculum to provide a framework within which to interpret it:

1. Global citizenship – gaining the knowledge, skills and understanding of concepts and institutions necessary to become informed active responsible citizens.
2. Conflict resolution – understanding the nature of conflicts, their impact on development and why there is a need for their resolution and the promotion of harmony.
3. Diversity – understanding and respecting the differences and relating these to our common humanity.

4. Human rights – knowing about human rights including the UN Convention and the Rights of the Child.

5. Interdependence – understanding how people, places, economies and environments are all inextricably interrelated and that choices and events have repercussions on a global scale.

6. Social justice – understanding the importance of social justice as an element in both sustainable development and the improved welfare of all people.

7. Sustainable development – understanding the need to maintain and improve the quality of life now without damaging the planet for future generations.

8. Values and perceptions – developing a critical evaluation of representations of global issues and an appreciation of the effect these have on people's attitudes and values.

(DfES 2005: 20–3)

The design and technology curriculum currently comprises four components within the Key Stage 3 programmes of study: systems and control, resistant materials, food and textiles. Considering each of the eight key concepts from a D&T perspective is interesting and quite thought-provoking for me as a former Curriculum Leader. I found it difficult not to be too contrived or over-emphasise one key concept to the detriment of the others. I would suggest that this is the dilemma that faces a lot of teachers.

Taking each key concept in turn, what does it mean from a D&T perspective?

1. Global citizenship – considering the roles of designers, producers and consumers and the impact their decisions have on other people.

2. Conflict resolution – understanding roles.

3. Diversity – understanding that different environments and cultures need different products.

4. Human rights – roles of designers, producers and consumers in ensuring human rights are respected through the implications of choices we make.

5. Interdependence – understanding that the choices made about materials have implications around the world.

6. Social justice – relating the creation of products and technologies to the creation of a more just world.

7. Sustainable development – six R's (recycle, reuse, refuse, rethink, reduce, repair) and economic, social and environmental impacts.

8. Values and perceptions – critical thinking, skills for evaluating, recognising how students' designs reflect their own values and perceptions.

I would suggest that all eight concepts are of equal importance and interrelated. They are interlinked and an integrated approach to teaching is required in order to ensure good coverage. The importance of including the Global Dimension in education is disputed in some areas and there has been intense discussion among educational specialists and schools about the most effective way to incorporate the subject into the curriculum. Currently each subject area is expected to include the key concepts in its individual scheme of work where appropriate, which for some gives the opportunity to disregard them completely or only partially address them.

The Global Dimension concepts contribute to the development of key skills which help children and young people explore the positive and negative effects of technology and gain an understanding of social, environmental and economic issues that could improve the world we live in. These include communication, cross-cultural communication, working with others, and an awareness of diverse perspectives on issues. Students should be encouraged to analyse and evaluate, leading to the questioning of assumptions and to identifying ways to achieve positive change. What the Global Dimension looks like in schools is open for debate, and interpretation by schools is variable to say the least. The theory behind Global Dimensions is firmly rooted in the National Curriculum, and the aims for delivering it to students, although ambitious, have merit. Therefore, in practice it should be possible and appropriate to incorporate Global Dimensions into schemes of work, where students can become more active and responsible citizens – a future generation that is prepared to consider a positive future.

Observations of trainee teachers 2010–11

This is all very well, but we are making a lot of assumptions about students and their level of understanding of the issues relating to Global Dimensions. Stepping back, and in my role as a teacher-educator where I observe trainee teachers trying to develop students' understanding, it was very clear that students' perceptions of life outside their cocoons are governed by the home environment and the values they are exposed to outside school. I observed a group of 15- and 16-year-olds in a fairly affluent area in Essex in a lesson, where they were asked to consider how some of the clothes they bought had reached the shops for retail. A discussion

developed where it was quite clear that there was no sympathy or thought given by the students to the workers who had produced the goods, and no concern about their treatment and salary. The trainee teacher managed the discussion very skilfully, using video clips to emphasise her points, and by the end of the lesson there was an obvious shift in students' understanding of the subject. In fact one student approached her at the end of the lesson and stated she would be considering her clothing purchases carefully in the future.

Another trainee working in an inner London secondary school succeeded in giving an insight into Fair Trade by delivering a lesson based on a banana. By the end of the lesson the majority, if not all, of the students had covered all aspects of the Global Dimension in an interactive and non-formal learning environment. Students were able to consider how their actions influenced others, something they had not previously considered in lessons. A questionnaire given to the students at the end of the half-term fed back on topics students had enjoyed learning about most, and almost two-thirds of a class indicated that the Fair Trade lesson had been the most memorable.

A crisis in creativity?

Design and technology obviously has a huge part to play in helping with the delivery of the Global Dimension. The question is, can D&T lessons provide innovative and creative ways to deliver the Global Dimensions issue? At the Design and Technology Association Conference in 2008 it was suggested that 'D and T educators have pointed to a "crisis" in creativity within the subject' (McLellan & Nicholl 2008). They stated that research indicated that the organisational climate, defined as 'the recurring patterns of behaviour, attitudes and feelings that characterise life in the organisation', can help or hinder creativity. Hence 'climate' is a potential explanatory factor for the lack of creativity documented in student outcomes when considering the impact of Global Dimensions. As part of the design process which is an important aspect of teaching D&T, teachers should encourage children to be creative: 'in considering creativity it is important to establish that all children have equal rights to be creative and have full access to opportunities within the creative areas of the curriculum' (Beetlestone 1998: 34).The great problem for many D&T teachers is, how do we do it?

The Design and Technology Association based its whole conference in 2004 on Creativity and Innovation in an effort to highlight issues surrounding the successful implementation of creativity in the D&T curriculum. It became very clear that the opportunity for children to grow creatively depended on the support they were given. Some teachers were reluctant to embrace a creative approach, as to them some of the most creative children tended to be the most demanding individuals who were difficult to control and this then raised issues with regard to the constraints of the classroom and discipline. A Government report suggests creativity and cultural education are the keys to unlocking the potential for creativity every child possesses, and considers creativity as: using the imagination, pursuing purposes, being original and being of value (DfEE 1999). The report states that creativity is a process, not an event, and that it requires a combination of elements that are controlled and uncontrolled, bringing the conscious as well as the unconscious thought process to the fore.

By its very nature, creativity will always involve problem-solving, although, on the flip side, problem-solving may not always involve creativity. Although for me the very essence of D&T is the development of skills for living in society, the report, while commenting on other subjects, failed to address in any great depth the contribution that could be made by D&T. The report does acknowledge 'Design and Technology is intended to provide young people with the opportunity to respond creatively to the challenges of designing and making products' but goes into very little detail. No wonder teachers are unsure how to address creativity and its relative importance.

If you consider art and design for example, a key feature of the subject is lessons that develop the language and shared values that allow teachers to talk knowledgeably about the creativity expressed in students' work. Perhaps the way forward is to engage teachers in observations and conversations that highlight how this is achieved successfully.

Exploring the potential for creativity

A Principal Lecturer in Design and Technology Education at the University of Surrey Roehampton carried out some research for the 2004 Design and Technology Association Conference which indicated secondary teachers did not see developing creativity as significant or desirable as a learning outcome. This led to the work of their students, when it came to designing and making, lacking the necessary depth and the potential for further development. It is clear that sustained continuing professional development is required in order to encourage teachers to be creative and encourage their students.

Steven Keirl (2007) argues that there are five perspectives we need to examine when considering the design of a D&T curriculum:

1. The global – how the curriculum relates to what is happening in the world.
2. The would-be stakeholders – (who is the curriculum serving?
3. Society – the contribution of the curriculum to education for democracy.
4. Students as fulfilled persons – what the curriculum does for pupils.
5. Curriculum dynamics – how our bit of the curriculum relates to the whole.

It is fair to say that the D&T curriculum in England is largely a result of the consideration of commercial design practice. This is especially true with reference to product design in different materials, industrial design and some engineering input. This has developed over a number of years because of the need to prepare students more appropriately for life after education finishes. Jackson (2002) states that

'Design and Technology has a body of knowledge and skills which pupils can learn but these need to be put into meaningful contexts if they are to have any relevance to the learners. Design and Technology by its very nature should be contemporary, aware of current interests and issues and respond to them. It is an active subject, where students have or should be actively involved in their learning.'

Considering Global Dimension coverage from experience, I can cite examples in relation to Sustainability which suggest a higher profile is adopted for Sustainability in schools than for the other concepts – partly due to excellent resourcing from Practical Action (Capewell 2008). This, teachers feel, means they have considered Global Dimensions from a D&T point of view. Taking Keirl's model (2007), it is fair to conclude that while the Global Dimension is an area that is covered with a varying degree of success, if we want the D&T curriculum to relate to what is happening in the world then there should be greater scope and emphasis placed on students being able to design and make products using the best of modern technologies experienced by many of them every day. Unfortunately teacher expertise does not always allow this to be a reality. Would-be stakeholders such as future employers need to be catered for and, as previously mentioned, the model related to commercial design practice needs some revision to take into account more personalised designing, and society as a whole.

Society and the degree to which design currently serves democracy is open to question (Baynes 2005). This is in part due to resource issues in schools. Design and technology is an expensive subject to run in schools, so some schemes of work are devised with financial constraints in mind. From my observations I feel that the D&T curriculum as it stands leaves little scope for considering issues related to Global Dimensions and alternative approaches to sustainable development, for example. The fact that many pupils are influenced by product-orientated social networking should not be undervalued, as this is a powerful tool which can be harnessed to promote learning for pupils who may be otherwise unengaged in school. Developing pupils as fulfilled individuals is an interesting and quite sobering thought for teachers of D&T; although the subject seems to retain its popularity, there are suggestions that pupils find it unsatisfying (Nicholl et al. 2008). The scope for personal creativity or the lack of it rears its ugly head again. The move to suggest that D&T sits more appropriately under the STEM umbrella where opportunities are created to inspire young people in Science, Technology, Engineering and Maths is an interesting one when you consider curriculum dynamics. Given that D&T should be related to the real world, including it as a STEM subject makes sense, but resistance from some D&T teachers is likely to be fierce.

Concluding thoughts

For D&T to make a valuable contribution to Global Dimensions it needs to move forward and consider the issues in society in the 21st century. We should be celebrated as a route to creating an 'ethically defensible' curriculum (Keirl 2007). Design and technology in whatever form it continues should be able to contribute in an uncontrived and meaningful way to an education for students in school that supports education for the future. For teachers to develop a modern curriculum that prepares all learners for the future, it is critical that we ensure that it has the Global Dimension running through all subject areas. For a curriculum to claim to be fit for purpose in the 21st century it must actively encourage all learners to be critical thinkers who are aware of the world around them and can consider different points of view constructively and from different perspectives. We are preparing students to leave school ready to participate in opportunities in order to make the world in which we live a better place. Design and technology provides an excellent platform within which to develop these characteristics, but it needs everyone to be singing from the same song sheet and appreciate the need for cooperation and support to ensure this is not another initiative that is 'just another thing to think about'.

References

Barlex, D. (2004) *Creativity in Education and Research*.

Baynes, K. (2005) *Design and democracy: speculations on the radical potential of design, design practice and design education.* Warwickshire: The Design and Technology Association.

Beetlestone, F. (1998) *Creative Children, Imaginative* Teaching. Buckingham: McGraw-Hill.

Capewell, I. (2008) *The Sustainability Handbook for Design and Technology Teachers.* London: Practical Action Book Publishing.

DfEE (1999) *All Our Futures: Creativity,Culture and Education* pp.27-40. London: Department for Education and Employment.

DfES (2003) Sustainable development action plan for education and skills. London: Department for Education and Skills.

DfES (2004a) *Putting the world into world-class education.* London: Department for Education and Skills.

DfES (2004b) *Working together: giving children and young people a say* (DfES/0134/2004). London: Department for Education and Skills.

DfES (2005) *Developing the global dimension in the school curriculum* (DfES/1409/2005). London: Department for Education and Skills.

DfES (2008) 'National Curriculum Aims, Values and Purposes'. Online: http://curriculum.qcda.gov.uk/key-stages-3-and-4/aims-values-and-purposes/index.aspx [accessed July 2011] 'Exploring the global dimension to design and technology' [online]; http://www.globaldimension.org.uk

Jackson, O.G. (2002) Teaching Design and Technology in *Secondary Schools*. London: The Open University.

Keirl, S (2007) The politics of Technology Curriculum. In Barlex D. [Ed] *Design and Technology for the next generation.* London: Cliff and Co Ltd.

MORI (2006) *School Inspections*. A research study for Ofsted by Iposs. HMI20060001.

Nicholl I., McLellan C. and Kotob A. (2008) 'The importance of classroom climate in fostering student creativity in Design and Technology lessons'. D and T Education and International Research Conference 2008, Faculty of Education, University of Cambridge.

Rutland, M. (2004) 'Exploring the potential for creativity'. Paper presented at the Design and Technology Association Conference – Creativity and Innovation, Wellsbourne, Warwickshire.

Steeg, S. (2008) 'Makers, hackers and fabbers: what is the future for D and T?' D and T Education and International Research Conference 2008. Loughborough: Loughborough University. 2–4 July 2008.

Contact: k.jones2@uel.ac.uk