

The Relevance of Design & Technology in Independent Schools

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Traditionally, independent schools have tended to consider D&T as a practical subject particularly suited to the less able; is this perception beginning to change?

Today all schools face the concerns of educational reform, resulting in the need to look carefully at what they offer pupils and parents (Rees, 1989). Although the National Curriculum is not statutory in independent schools, and in spite of the widespread uncertainty that surrounds the subject, many have introduced design & technology into their already overcrowded timetables.

What is the particular relevance of D&T for the independent sector of education? Traditionally, teachers and pupils in many independent schools have viewed subjects of a practical nature as 'suitable for the less able'. To a large extent such pupils have been encouraged towards the practical and creative subjects of art, textiles, home economics and CDT, while those pupils who follow three science subjects at A level are considered the most 'intelligent' pupils. The introduction of D&T into the curriculum may cause some confusion in these patterns, having links with art and science and involving different styles of thinking (some more readily measured than others).

In this article I shall consider the relevance of D&T in the independent sector with specific reference to teaching and learning styles, the unique values of the subject, and as a way of preparing pupils for the world of work.

Traditionally, teaching and learning — particularly in the academic environment exemplified by many independent schools — appear to rely heavily on external motivation to achieve results. However, these extrinsic motivators do not in the long term sustain excitement or passion for learning and often result in controlling learning rather than encouraging natural motivational bases for growth and development (see Ryan and Powelson, 1991). D&T encourages intrinsic motivation for learning by supporting pupil autonomy in situations which allow pupils to feel connected to and supported by, their peers.

D&T recognises the need to provide pupils with skills that enable them to acquire and use knowledge, both now and as adults, while allowing them the opportunity to set their own targets and take responsibility for their own learning. Observation in my own school indicates that when pupils are actively engaged in work they perceive it as 'meaningful and relevant'. They enjoy what they are doing and as a result are self-motivated and able to think creatively.

Gender issues

Many independent schools are single-sex establishments and the concern for equality therefore lies in the gender issue. It is important that all schools, regardless of gender, permit access to a wide range of materials and resources so that all pupils have opportunities to acquire the skills, knowledge, attitudes and concepts of design & technology.

In spite of the expense and upheaval involved in staffing and resourcing construction materials, many girls' independent schools are now offering opportunities to work with wood, metal and plastics (see Wise *et al*, 1993). However, few boys' independent schools appear to provide opportunities to work with food, in spite of its permitting equality of opportunity for them. Until food is recognised as an eminently suitable material for 'design and make' activities for all pupils, it seems likely that boys in independent schools will continue to be disadvantaged in this way.

While pupils continue to see women teaching food and men working with wood and metal, there is little chance for pupils to change their perceptions of male and female roles in society. As new teacher appointments are made, schools need to use positive discrimination to reverse these role models. At Berkhamsted School for Girls we perceive the recent appointment of a woman to teach construction materials as one way to alter accepted patterns and to encourage girls to visualise themselves in traditionally 'male' careers in the future. Attitudes that have existed for thousands of years will not be dispelled quickly, but this appointment could start the process of eroding gender-biased attitudes.

D&T and Values

Perhaps the most significant contribution that D&T can make to the education of young people is to create an atmosphere which allows pupils to question their attitudes and beliefs. We live in a consumer-driven, materialistic society. The creation of wealth through technological progress may be an acceptable ambition for some pupils, and this may be particularly relevant to those in an academic environment. A narrow interpretation of D&T could mean that pupils only apply the skills, knowledge and concepts to 'create wealth, solve complex problems and achieve a superior quality of life' (Conway, 1990), but D&T has a much wider relevance as a curriculum subject.

Widespread criticisms concerning the lack of clarity in the original technology document (see Smithers and Robinson, NCC, 1992) have resulted in highly prescriptive recommendations for technology (NCC, 1993) that define *what* pupils should know and be able to do. In order to achieve an appropriate level of design & technology capability, close reference to such documents coupled with the desire for the personal success of pupils, could mean that independent schools fail to address the alternative goals of D&T that consider the environmental, ecological and social issues involved in technological change.

Design & technology can provide a climate for pupils to understand the individual's relationship with the world where the 'morality of individual conscience and conviction is balanced by a sense of the universal which respects that sense of individuality' (Cullingford, 1990). If the issues concerning these attitudes and beliefs are ignored or avoided, there is a suggestion that 'they are not important, they are not manageable, they are a personal opinion only' (Black, 1990).

■ The World of Work

One of the goals of education is to prepare pupils for work. It is forecast that by the year 2000 there will be little requirement for manual skills or pure academic qualifications in the job market, and that employers will be searching for people who can offer the transferable skills of communication and problem solving and interpersonal skills (Murray, 1992). The skills sought by Lucas Industries (see Tieman, 1993) reflect the current needs of industry, where the ability to communicate and work as part of a team is of the highest priority; problem solving, analytical skills, flexibility, adaptability, decision making and the ability to make independent judgements are also considered essential in recruitment of staff.

■ A Question of Status

In the past, practical subjects were afforded a position of low status in many independent schools. The emphasis on the acquisition of craft skills was considered to offer 'less able' pupils a suitable preparation for employment (Penfold, 1988). 'Intelligent' pupils followed the traditional academic subjects and obtained relevant qualifications for the future by passing examinations. Although practical skills remain an integral part of D&T, the emphasis is now

very different. Today, with its approach of design, make, test and evaluate, and the demands for pupils' collaboration, design & technology can provide all pupils with useful knowledge and skills that are appropriate for employment.

Design & technology must be recognised as a suitable and relevant subject for all pupils, including the most able. The inclusion of D&T in the independent school curriculum should make teachers and pupils question their attitudes and beliefs concerning the relevance of practical and academic subjects, and increase awareness and acceptance of the high-level thinking involved in achieving design & technology capability.

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