Contributions home economics can make to economic and industrial understanding through design and technology

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Abstract
Economic and industrial understanding is a legal requirement under the Educational Reform Act and all of our pupils have an entitlement to it regardless of race, gender and ability. It contributes to the personal and social development of pupils and helps prepare them with skills and attitudes for adult life. Teaching of economic and industrial understanding is whole-heartedly supported by industry, The Government, the community and schools.

Design Technology is a superb subject to promote all aspects of economic and industrial awareness. The knowledge, skills and attitudes laid down in the Curriculum Guidance reinforce those of the Design and Technology National Curriculum orders. As teachers of Design and technology we are already meeting many of the economic and industrial understanding knowledge, skills and attitudes. Not only this we are doing it in a concrete way using real situations in lots of different and exciting ways. We encourage pupils to take an active part in their learning and aid full understanding of economic and industrial understanding in their world.

The addressing of the development of economic and industrial understanding is a requirement under the Education Reform Act. It contributes to the personal and social development of pupils and helps prepare them with skills and attitudes for adult life. The development of economic and industrial understanding has support from industry, government, parents and community. It is a formal requirement in secondary schools within GCSE National Criteria and TVEI/TVEE.

Number four in the Curriculum Guidance series (1) deals with economic and industrial understanding - its philosophy, delivery and the development of skills and attitudes. It is encouraging to see that the aspects of this cross curricular theme can be met through the teaching of design and technology and they are most certainly integral parts of the design and technology programmes and not just bolted on afterthoughts.

It is suggested in the Curriculum Guidance 4 document that pupils should gain knowledge related to the choice of resources, cost comparisons, identifying needs for specific circumstances, consumer choices, production of goods/ services and technological changes in industry. All these areas can be directly linked to design and technology. Economic skills are met by first hand experiences and activities. The skills identified include collecting information, making decisions, analysing data and communicating effectively. These are not new concepts as they were established when GCSE Home Economics was being formulated

It is important to consider what is involved within the scope of economic and industrial understanding before it can be taught. Economical issues deal with the choices and uses of resources including money. There is a broad range of topics under the umbrella of industry - business, consumer, finance, commerce, space enterprise and so on. Together information connected with industry and the economy can advance.

* knowledge and understanding
* skills
* economic attitudes

These can be achieved by direct experience with industry and involvement of business and community enterprise. It has been introduced as a cross curricular theme and so allows all teachers to be involved. Each curriculum subject can contribute to economic and industrial understanding and their different ways of viewing economic and industrial understanding enriches the curriculum and gives students a far broader and balanced experience of industry and the economy. Further more it allows links to be made across the curriculum and helps give a more thorough understanding.

The approach of design and technology allows many aspects of economic and industrial awareness to be promoted. Students are continually being presented with information about the economy in lots of different contexts. What is presented to them as facts are, more often than not, someone else's opinion derived from value judgements and assumptions. Young people are making up their own minds about information and experiences in their everyday lives. They bring their opinions with them into school. The design and technology programmes allow the students to use their information when planning, designing, making and evaluating their work. This enables students to critically reflect their experiences relating to decisions and through this process students begin to expand their awareness and understanding of the ' economics of life. '

There is a vast array of approaches which Home Economics can so naturally use to contribute to the economic and industrial understanding in the curriculum.

A teacher placement into industry can enhance knowledge and understanding about resourcing a local industry, its economic base and internal organisation of work. I have had two five day placements, one with a Pork Product Manufacturers and the other with Marks and Spencers, an outlet selling the products made by Adams. I found it an ideal way for activities to be pre-planned, investigated and developed further. As a direct result of my time spent in industry I developed seventy hours of curriculum materials to use with students completing the BTEC Foundations Course. It was a valuable time for me as a practising teacher of Home Economics as I could see the different ways in which technology was being used in the workplace and incorporate it into my planning and teaching . As I had gained first hand knowledge of modern technology used in food production and retailing I

could explain this with confidence and detail to my students. The tasks I carried out during my industrial placement were personally and professionally rewarding, giving me direction in my teaching and understanding of the organisation involved in operating industry which was, prior to the placement, completely alien to me.

A link with a local industry would allow hands-on experience for projects within the context of business and industry. Pupils will be able to identify needs and opportunities and recognise constraints which influence judgements about what they are going to do and how they are going to do it. Discussion with industrialists will present a different perspective on consumer consideration and satisfaction. Areas concerning quality, business structure, market size, environmental impact, finance and deadlines can be seen in action by students and add meaning to their learning.

An educational visit into an industry provides a chance for pupils to investigate and compare organisation and work rules. The importance of team work in order to produce a finished product will be highlighted as will the idea that everyone has a role to play. These are valuable lessons for pupils to recognise and could be used in a mini-enterprise situation.

Projects I developed from my teacher placement in a food manufacturing plant included a visit by pupils to the factory and this enabled them to see the whole manufacturing process of sausages. The pupils were invited back for a second visit to have a go at making sausages. The idea that time equals money came over very clearly as did the importance of speed and precision in the manufacturing of goods.
[Curriculum Guidance 4 Key stage 3 (3) (9) DT (AT1) (AT4)]

From experiencing industry in action, students can begin to understand how the use of new technology affects employment, costs and quantity in the design and production of modern products. A follow-on task I have used was to compare time and effort used by different food preparation methods. This involved discussion work on the importance of saving time and labour, identifying different preparation methods (including hand and several labour saving devices), planning and executing a 'fair test' to find out if labour saving devices really save time and labour, evaluating test conditions and drawing conclusions. The knowledge gained from this investigation was meaningfully related to preparation methods used in the food industry and discussion work concerning standardised quality and speed in food production took place.
[Curriculum Guidance 4 Key stage 3 (5) DT (AT1) (AT2) (AT3) (AT4)]

An extension to the way industry organises itself could be to simulate the production process. Under achieving pupils in year eleven had a superb experience of this, producing pickled onions and red cabbage for sale on an open evening. The whole process was made up of several individual tasks, each one contributing to the finished product. Every pupil had an important role to play so that the 45 pounds of pickling onions and the twelve red

cabbages could be ready for sale on open evening. Discussion work on advertising tactics led to the pupils identifying the importance of presenting goods to promote sales. They decided to design an attractive, eye-catching label to put on the jars of produce and having looked at commercial preserves in local shops, the students thought cloth caps over the jar lids would help to make them look attractive. Team work and attractive presentation were highlighted throughout this mini-enterprise scheme. The pickles were a sell out and extra orders were requested.
[Curriculum Guidance 4 Key stage 3 (7) DT (AT1) (AT3)]

Strong permanent links between schools and industry are being encouraged as a positive outcome of a teacher placement. It is a two way partnership in which both education and industry should benefit. By having a greater understanding of the curriculum, industry can work with schools in developing effective projects, work experience and shadowing which will enable curriculum objectives to be achieved. Industry can offer work-related activities to develop personal qualities and skills needed in the workplace. These skills include working constructively with others, taking initiatives, self-discipline, persistence when difficulties arise and social responsibility. The opportunity to develop these skills is often not available as 'real' situations in a school environment.

A strong link was formed with Adams Pork Products and the personnel officer showed a great interest with educational and industrial twinning. The personnel officer visited school to discuss filling in job application forms and conducting mock interviews with school leavers. The students were able to ask her questions about interviews and job hunting on an informal basis and they gained a vast amount of knowledge from her visit.

Mini-enterprise schemes are nothing new, but they are one way in which students can become aware of the knowledge and then use the skills to gain the attitudes set down in Curriculum Guidance 4. Students can play an active part in a small scale business and can experience the importance of working in a team and thinking through options to the end before making a final decision. The opportunity to deal with problems, take initiatives and develop flexibility are on-going.

A BTEC case study, presented to year ten pupils, asked them to make a profit for a charity of their choice. They chose to run a coffee bar for a week and as part of their planning they carried out a market research survey to find out which types of goods would be 'good sellers'. From here students could cost out batches of goods, work out individual unit costs and then plan to make a profit. Having completed the preliminary survey, the students could appreciate the importance of the information in encouraging business enterprise to develop new products.

[Curriculum Guidance 4 Key stage 3 (2) (8) DT (AT!) (AT2) (AT3) (AT4)]
The students learnt a great deal about economic and industrial understanding

through this project as it was a concrete exercise they were taking part in. Their mini-enterprise was a great success, making a profit of £120 which the eight students involved decided to donate to the NSPCC.

Consumer awareness has played an underlying part in all areas of Home Economics. Students have been encouraged to compare alternatives to the things they have made and evaluate which is the best option in various situations and give reasons for their choice. Decision making is a skill in which students can justify their personal choices and reinforce their beliefs. Consumer education can be enriched by inviting outside speakers into school to talk to pupils and it gives them the opportunity to ask the experts questions. I have found speakers from Sainsburys, various banks, Environmental Health Department and the Citizens Advice Bureau very informative. It is a chance for students to work with adults other than teachers and allows adults outside education to see what life is like in schools.

Consumer education involving advertising helps students recognise that preferences of customers can change and that advertising does influence consumer choice. Analysing the different advertising strategies will reinforce that the design of goods, including packaging and advertising as a means of presentation, does affect consumer choice.
[Curriculum Guidance 4 Key stage 3 (14) DT (AT1)]

Economic and industrial understanding is a process of enquiry involving many different concepts which can sometimes be isolated and leave economic and industrial understanding fragmented. Design and technology themes draw together areas of economic and industrial awareness and presents it as a coherent unit. This assists the students understanding of areas covered and makes learning more meaningful as the information is relevant to the topic that they have experienced first hand.

Through design and technology, economic and industrial understanding will not become stale because there are several different contexts in which to present information ie the home, school, recreation, community and business and industry. This keeps the curriculum broad, balanced, relevant and inspiring for the students.

Design and technology is an entitlement for all. It is an area of the curriculum whereby pupils of all ability levels can experience success due to its active, meaningful and pupil-centred content and approach. It is a superb subject to promote all aspects of economic and industrial understanding. The knowledge, skills and attitudes laid down in the Curriculum Guidance 4 reinforces those of the design and technology National Curriculum. Teachers of design and technology are already meeting many of the economic and industrial understanding themes: knowledge, skills and attitudes. Not only this, they are doing it in concrete ways using everyday problems. Pupils are encouraged to take an active part in their learning to aid full understanding of economic and industrial understanding in their world.

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