

The Teaching of Food in the English and Welsh School Curriculum

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Marion Rutland has been conducting research into the changes taking place in the teaching of food, and looking at the issues of gender, status, work with the less able, and links with the food industry; these are some of her findings

Many changes have taken place since food was first taught in the school curriculum in England and Wales one hundred and fifty years ago. During this time a range of titles have been used to describe the subject area where food was taught. These have included Domestic Economy, Household Science, Housecraft, Domestic Science and Home Economics.

A preliminary historical literature search of the teaching of food up to the early 1980s identified three issues of concern: gender, status, and an association with the less able. These were areas in which changes in the teaching of food have been most apparent. The impact of the introduction of National Curriculum Technology was then considered, including The Proposals of the Secretary of State for Technology for ages 5 to 16 in England and Wales (DFE, 1992). This document highlighted a fourth issue: it proposed a swing in emphasis away from the teaching of food in the context of the home towards developing food products and commercial food technology. It was suggested that there should be stronger links between the teaching of food in schools and the food industry.

■ Gender

The origins of the teaching of food in English and Welsh schools were directly related to raising basic living standards (DES, 1978) and training children for low-paid future employment. Food preparation and other household duties have a long traditional association with females. The Education Code of 1897-8 stated it was responsive to the idea of a modifying the curriculum to fit girls for their future life — an attitude which continued well into the twentieth century. Even the range of roles undertaken by women during the 1914-18 war had little effect on attitudes. A Circular on *Advanced Courses in Secondary Schools* (Board of Education, 1919) suggested the curriculum in girls' schools was too closely modelled on that of boys. This theme continued in the Hadow Report (1926), the Spens Report (1936) and the Norwood Report (1943). The emphasis for girls should be to make them aware of their future roles as wives and mothers and potential makers of homes.

It was not until the Crowther Report (1969) that these attitudes and values, which had influenced the teaching of food in the school curriculum, were challenged. The report was

the first to note that radical changes in the structure and way of life of the population had affected the lives of women. Women would not spend all their life bringing up children. Families were smaller and they had a longer, healthier life expectancy. Despite this, the Newsom Report (1963) emphasised that girls would be ultimately responsible for running a home and so needed a different education.

The Sex Discrimination Act of 1975 was a landmark in the provision of a common education for girls and boys. The Equal Opportunities Commission (1980) commented that it was no longer possible to exclude pupils from any course on the grounds of sex. Pupils of both sexes should have access to all courses, including ones traditionally the preserve of boys or girls. Lawson (1993) argued that since its conception home economics, including the teaching of food, had been regarded as women's work within a family focus. He saw a need for increased flexibility by these teachers to establish a new direction and identify the key areas to retain and develop.

■ Status

A number of writers have observed that the role of preparing food, as with other traditional roles in the home, generally has a low status. Riggs (1992) commented that even today there is an underlying belief that matters related to the home, such as food preparation, are a low status area of knowledge. The 'practical' subjects, including the teaching of food, have since the last century been considered to be of a lower status than more academic subjects in the school curriculum. In education there has been a long term, deeply rooted philosophy that only verbal or propositional knowledge is of real importance. Practical or procedural knowledge is of secondary importance.

■ Association with the Less Able

The teaching of food has, since its introduction into the pauper schools and the state elementary system, traditionally been associated with young pupils and a basic utilitarian or vocational education.

The teaching of food was introduced into the private and secondary sector in the latter half of the nineteenth century. Teachers in private schools thought that 'Housecraft', including the teaching of food, was a suitable subject for

the least intelligent who could not be interested in more academic work.

The traditional teaching strategy used in the teaching of food was 'instruction'. This teaching style is associated with 'training' and the development of routine, mechanistic skills and distinct from 'education' which involves a body of knowledge or concepts (Corson, 1991). It was a teaching style that linked the teaching of food to the less able pupil, considered not able to combine 'thought with action'. Newton (1990) and Eggleston (1992) agreed that the craft subjects, including food, focused on the mechanical drill of useful practical skills.

The introduction in England and Wales of new General Certificate of Secondary Education (GCSE) examinations syllabuses for sixteen-year-old pupils in 1986, brought about changes in teaching styles. In the teaching of food, design briefs based on problem solving and an investigatory approach were developed for the full ability range of pupils.

Nuffield-based courses in the early 1980s developed a more scientific investigative approach to practical food-based activities. However, despite these developments, the emphasis in the teaching of food was on content related to the home (DES, 1985), unlike Craft Design Technology (CDT) where the emphasis was on the process of designing practical solutions and creative problem solving (DES, 1987).

■ Links with the Food Industry

There was a no reference to the area of home economics, where food was traditionally taught, in the documents leading up to the introduction of the National Curriculum in England and Wales. However, the document *Design and Technology for ages 5 to 16* (DES, 1989) listed home economics as a contributory subject for the development of design and technology capability under National Curriculum Technology. The emphasis was to be the design process, identifying needs, generating ideas, planning, making and testing to find the best solution (DES, 1990). There was much debate as to how the whole area of home economics could be accommodated within Design and Technology, though examples from food technology were cited.

The Proposals of the Secretary of State for Technology in England and Wales for children aged between 5 to 16 years (DFE, 1992),

included food as a material to design and make good quality products fit for their purpose. This approach required a change of emphasis from domestic food preparation to commercial production or food technology. An attempt was made to identify the knowledge and skills of food technology needed by pupils to develop and make food products.

■ Research Method

It was decided to investigate the four issues identified through a piece of small-scale in-depth research involving twelve people based in education and six working in the food industry. Qualitative research methods were chosen because they were able to provide a theoretical framework that focused on social processes, including attitudes and values. The framework required for the research needed to be flexible and not too rigid, to prevent a commitment to preconceptions that could not be modified.

The use of an interview was considered a useful tool for this study, as it involved collecting data through direct verbal interaction between individuals, where a relationship could be quickly established. The interviewees were not all used to educational terminology, so it was necessary to adapt and explain the language and make it more appropriate for each individual.

A questionnaire using attitudinal measurement could be used to gain a larger sample of responses. However, a questionnaire at this initial stage could have alienated people and made them defensive, either through a lack of sympathy with the questions or a lack of understanding of the terminology used. Interviews could be seen as phase one in the research exercise, leading to a further extension of the study through a postal questionnaire, based on attitude scales, for a larger sample group.

Interviews allow in-depth investigation but one disadvantage they have is that they are prone to subjectivity and bias on the part of the interviewer (see Cohen and Manion, 1984). To avoid this, the people chosen had considerable experience of working with food in a variety of educational and commercial establishments. Some were known by the interviewer, some were not.

Each interview consisted of five questions. The first three questions focused individually on

gender, status and an association with the less able. They asked for the opinion of the interviewee regarding perceived changes, with encouragement to justify their responses. Question four was concerned with changes in the teaching of food that the respondent perceived to have happened already and changes they would like to make. Question five was in two parts and was specifically concerned with the government document (DFE, 1992) and the suggested change of emphasis from food in the domestic context to food technology for commercial production. Part one asked for further comments if links with industry had been already mentioned. Part two was used to explore why some interviewees had made no reference to industry in their previous answer. A pilot was carried out and some questions reworded to aid understanding. Each interview was tape recorded and later transcribed.

■ Summary of main findings

There was agreement that the study of food is appropriate for both males and females. However, attitudes and values in society to traditional role models are changing slowly. Traditional attitudes remain, particularly with experienced educationalists, regarding the relationship between food and females.

It was considered that the status of food in schools has changed. Some interviewees thought, however, that the status had oscillated due to lack of direction and an unwillingness by some to change entrenched views. It was thought that food had a higher status where it was food technology and a major focus in Design and Technology within National Curriculum Technology. However, there was still confusion regarding a justification for the inclusion of food and where it should be delivered in the school curriculum.

It was thought that the teaching of food has potential for pupils of all abilities, but it was noted that there was a need for differentiation to ensure progression across the full age range of five to fifteen years. It was emphasised that work with food had the potential to interest, motivate and offer unique opportunities to pupils.

It was noted that some food teachers lacked understanding and experience of the food industry and are not aware of the potential of teaching food product design and development. It was thought that changing life styles in

society and the increased use of commercially prepared food in recent years make it unrealistic to challenge the food industry. However, links between schools and the food industry would be beneficial if schools were to teach food technology. They would help teachers and pupils develop an understanding of food product development.

■ Suggestions for the future

It was considered that outdated attitudes of experienced teachers and senior people in education, regarding the relationship between food and gender, should be challenged. Food should not be taught only by women and restricted to the context of the home. It should be taught by both men and women through the commercial setting of food technology, or food product development. This would improve status by creating a new image, as food technology and food technologists.

It was felt that there was a need to clarify why food should be taught in the curriculum. It should be established as the new subject of food technology within National Curriculum Technology, where it will be compulsory for all pupils. The change of image away from the domestic environment and the traditional female roles would improve status. It is important that the organisations representing food technology should clearly represent this view and help educate teachers, schools and parents about the true nature of food technology.

It was recommended that a framework for the teaching of food technology should be created to achieve sound learning outcomes. This should include the concepts, knowledge and skills required across the full age range. A range of examinations appropriate to pupils of all abilities and interests would be needed: examinations which provided access to a range of careers and courses related to the food industry. The potential of work with food to motivate and interest pupils should be recognised. Food technology is able to offer pupils unique opportunities as a personal preparation for adult life and on a commercial level.

Schools and teachers of food technology should continue to develop links with the food industry through industry placements, linked projects and the involvement of Adults other than Teachers (AOT). Courses in food

technology would enable pupils to follow a wide range of careers in the food industry.

■ Implications

The research indicated that the teaching of food in schools in England and Wales has moved a long way since it was first introduced over one hundred and fifty years ago. At that time it provided girls with a basic training in cookery skills to feed their families or gain low paid employment as servants. Instruments of change have included equal opportunities legislation, new examination systems, the introduction of The National Curriculum, changes in lifestyle affecting the tradition role of women and the increased use of commercially prepared food products.

A major implication for schools in England and Wales relates to a need for specialist food technology teachers. It is important to convince food teachers at present in schools that food technology is not completely new; much of the food-based knowledge and skills taught in the past will still be included. Rather it is a change of approach from a domestic focus towards commercial food product development for a variety of contexts and groups of people. The 'needs' of individuals within the family unit will still be addressed in the wider context of the food industry.

In-service courses are needed to help teachers clarify the relationship between the knowledge and skills base of food technology, the design process and food product development. Teachers would learn the sensory and evaluation techniques and knowledge of basic food science essential to teach food technology. Individual schools are not able to cope with these demands and additional support and funding are required.

The training of new specialist teachers of food technology, not necessarily with the full knowledge and skills of the home economist, is important. Higher Education needs to consider how this can be achieved. Primary design and technology teachers require a breadth of knowledge, understanding and skills in design and technology, including food technology. Secondary, specialist food technologists will either gain their specialist knowledge on undergraduate courses, including qualified teacher status, or from a food-related first degree followed by postgraduate courses. It can be argued that as technology teachers they should have a wider breadth of knowledge,

understanding and skills in design and technology. There is a need to address this issue and consider if this is desirable and if so, how it could be achieved.

An interviewee from the food industry indicated that there was a need for a general framework of knowledge, concepts and skills for food technology. Three headings physical/chemical properties, sensory properties and nutritional properties — were suggested. Following the interview, these headings were used to draft the chart 'Food Technology' for pupils across the full age range five to sixteen years (Figure 1). This chart was used later as a basis for discussion and evaluation.

There are countries, other than England and Wales, where the school educational system is under review and going through a period of change. Ferguson (IDATER 94, 1994) discussed the development of technology education and the structure of education in New Zealand. He reviewed the background of social and economic reforms and changes that have influenced the decision to establish technology, including food technology, in the curriculum as a new essential learning area. It was noted that further research projects in New Zealand into teachers' perceptions of technological education and ways in which teachers can enhance pupils' technological capability would influence future developments. Teacher development and funding for facilities and equipment would be a government issue.

The present research was confined to England and Wales, where it was concluded that though some changes in the teaching of food in schools have already taken place, others are still required. Further research is also needed into such issues as subject content relationship with other subjects (notably science) and progression. Home Economics does not exist within the National Curriculum and food is now delivered as food technology within Technology, with a change of emphasis from food in the context of the home to food product development in a commercial setting (NCC, 1993; SCAA, 1994; DFE, 1995). However, it can be argued that as in New Zealand, teacher development and support is needed if existing food teachers are to deliver food technology successfully. New policies and courses are needed for future technology teachers, including teachers of food technology. George

FOOD TECHNOLOGY

	Physical/Chemical Properties	Sensory Properties	Nutritional Properties
Key Stage 1 (ages 5 - 7)	Personal safety and hygiene when handling food Measuring foods - simple weighing Using tools to cut, chop, peel, mix	Assessing their products drawing on the opinions of others, using appropriate sensory descriptors Serving food attractively	Sources of fruit and vegetables Why we need them
Key Stage 2 (ages 7 - 11)	Safety and hygiene factors related to their working environment and the storage of Foods Properties of foods for energy and growth Measuring and combining starchy, sugar and dairy foods Energy sources that cook food	Evaluating consumer acceptability of their products using tests with verbal and/or pictorial scales	Sources and functions of foods for energy and growth Foods that are needed for a health eating
Key Stage 3 (ages 11 - 14)	Safety and hygiene factors related to product development The use of attribute analysis in food product development The selection, modification and use a range of recipes when making a food product Controlling the quality and shelf life of a food product through knowledge of the physical and chemical properties of foods Batch production and quality control	Setting up and conducting sensory tests which produce valid and reproducible results eg attitudinal and difference tests - triangle, ranking, hedonic Understanding the need to control portion size, temperature of samples, number of people on the taste panel to standardise results	Goals for healthy eating Sources and nutritional functions of fats, proteins, carbohydrates. The use of dietary analysis to 'model' with food Links between food intake and energy Expenditure
Key Stage 4 (ages 14 - 16)	The safety, hygiene and environmental Legal Standards required for food production and distribution. Food packaging and storage Causes and control of food spoilage Controlling the shelf life, organoleptic and nutritional qualities of foods using physical and chemical preservatives. The product development process Marketing and retailing	The use of statistical data derived from different sensory tests to evaluate key characteristics of products The use of tests on key characteristics of products to specify criteria for consumer acceptability The use of tests to produce a product specification	The sources and functions of fibre, water, fats, carbohydrates, proteins, vitamins, minerals for different population groups Knowledge of simple/complex sugars, low and high biological value proteins, saturated/ polyunsaturated fats, vitamins A/B/C/D/E Effects of processing freezing/heating/ mechanical manipulation on nutrient content The use of food analysis in writing a food product specification

(1994), Education Liaison Manager, Unilever UK, argued that industry is concerned about the availability of technological skills. He saw an urgent need for a properly trained and well motivated teaching force to deliver technology in schools. It is an exciting and demanding time for all teachers of technology, including food technology: a time to move forward and take charge of the future.

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