Ofsted subject conference report: design and technology

Food technology in secondary schools

London, 8 November 2005

Better education and care

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Synopsis

In the context of government policy to promote healthy eating, the conference aimed to discuss inspection findings and generate solutions to problems in relation to: the content of secondary school food technology courses; the effectiveness of teaching and the standards of achievement; the influence of secondary school organisation on food teaching; teacher supply and professional development; and assessment and examinations. The conference was jointly planned and run with colleagues from Ofsted; the Department for Education and Skills (DfES); the Department of Health (DoH); the Qualifications and Curriculum Authority (QCA); the Design and Technology Association (DATA); the British Nutrition Foundation (BNF); the Specialist Schools Trust (SST) and the Training and Development Agency (TDA).

Seventy delegates were invited to represent the above bodies as well as local authorities, examination awarding bodies, publishers of teaching resources, the food industry, the Institute of Consumer Science and the Food Standards Agency, together with expert practitioners from initial teacher training and schools.

Summaries of conference sessions

The morning was devoted to an examination of current policy and provision.

Helen Williams, director of the DfES school standards group set out the government's current policy and programmes on food education.

Peter Toft HMI, subject adviser for design and technology, outlined the findings from a recent inspection survey into the provision of food technology in secondary schools, emphasising that high standards and effective teaching across the full breadth of this subject are rare. Five general discussion groups then considered the inspection findings.

The afternoon was devoted to identifying ways to improve provision.

Mick Waters, director of the QCA's curriculum division outlined some broad requirements for the development of a world class curriculum, indicating how food education might contribute to this.

Stephanie Valentine, education director of the BNF, set out what pupils ought to learn about nutrition, food preparation and healthy eating.

Anne Constable, assistant principal of the Beauchamp College, with three of her Year 11 students, gave an account of how rigour can be built into the teaching of food technology.

Gail Elms, Assistant headteacher of Hyde Technology School, described her school's provision of vocational courses in food. Specialist discussion groups then generated proposals for improving provision in: curriculum content; teaching methods; school organisation and resourcing; teacher supply and training; assessment and examinations.

Outcomes:

- The vast majority of delegates indicated an intention to feedback information in their places of work and to take action to develop aspects of provision.
- The conference highlighted and informed the work being done, in the QCA and awarding bodies to improve GCSE course specifications and the work to be done within the TDA to improve teacher supply.
- The DfES undertook to establish a working group representing the main support agencies to work out how to implement the main proposals outlined in the conference presentations and discussions.
- There was, overall, a sense of relief in the conference that the problems of teaching food technology created by some of the National Curriculum requirements for D&T were being analysed and dealt with by a key range of influential organisations and individuals.

Further details

Details of the background to the conference are provided in the attached appendix.

Further details of the conference are available from: gary.linin@ofsted.gov.uk.

Annex A

Background paper: food in English secondary education

1. Introduction

This conference has been designed to use inspection evidence about the teaching of food technology to support the work of policy makers who are promoting healthy living in schools. The evidence comes directly from inspections carried out by Ofsted. However, the conference has been planned by colleagues from a wider circle of organisations including the DfES, the DoH, the QCA and the DATA. Each of these organisations has a direct stake in the effectiveness with which English pupils are taught about food and healthy eating and each brings to the conference a particular authority and capacity to bring about improvement. The event will give these organisations and a wider range of specialists the opportunity to consider in depth what inspection reveals about the strengths of the existing provision. It will also inform them in their attempts to formulate solutions to the problems which can then be developed further, where appropriate, back in their employing bodies or through collaboration between those bodies.

2. Context

2.1. Food and industrialisation

Along with clothing, shelter and security from danger, food and drink are vital to our physical survival: we are to a large extent 'what we eat and drink'. Food materials, derived from plants and animals, provide the nutrients protein, carbohydrates, fats, vitamins and minerals which, together with water and fibre, are essential to maintain life and growth. More profoundly than most other materials used to develop products in design and technology, the ingredients we convert into meals have to meet demanding basic requirements lest we go hungry, fall ill, or die.

Ten millennia of stable climates and sea levels have enabled us increasingly to produce sustainable food surpluses by farming within relatively settled communities. The industrial revolution empowered some countries to go further and produce abundant supplies of food giving their populations unprecedented selection of what to consume, promoting a greater need to exercise informed choices. The industrialisation of both farming and food processing in the first half of the twentieth century enabled Britain, after the austerity of the second world war, to strengthen its capacity to produce cheap and plentiful food for home consumption. Production also expanded to feed the growing population after the 'baby boom' and because many women were working outside the home. Subsequent developments in packaging, transportation, selling and cooking led to the existing commercial context which exerts a powerful influence over what people consume and what we

teach pupils in school. Many individual food items are now produced, increasingly including ready-cooked meals. In all of this, conflicts of interest have emerged between:

- commercial producers versus consumers
- primary producers versus traders, especially supermarket chains
- food processors versus food retailers
- the interests of producers versus the health of the public
- sustainability versus resource-intensive production methods, and
- within the continuum between home cooking and large-scale industrial production.

Such conflicts are not unique to food production and food education. The industrialisation of the manufacture of durable goods in the nineteenth century was criticised at first for a perceived decline in quality. This gave rise to an opposing arts and crafts movement, inspired in part by the iconoclast William Morris. Though the movement's advocacy of a return to handcraft production was unsuccessful, it influenced profoundly our conceptions of school craft education for much of the twentieth century.

Arguably, current disagreements about what pupils should be taught about food stem from similarly opposing viewpoints about the industrialisation of food production and the shift from domestic cooking to the mass production of meals. This sets the traditional view that pupils should learn in a practical way to budget, obtain and store food, and cook nutritious meals for domestic consumption, against the National Curriculum view that they should learn in food technology, especially in Key Stage 4, systematically to develop food products for modern industrial production which satisfy consumer demand.

While the traditional view is criticised for being dated, unchallenging and having low status within the academic school curriculum, the opposing view is criticised for being too theoretical and for unwittingly socialising pupils into being passive consumers of mass-produced meals.

2.2. Food, health and choice

Obesity in children has increased in recent years. The causes of this are many and complex, and current concern is about foods high in fats (total and saturated) and sugar. There is serious concern that this trend, if unchecked, will present major health problems in the future. Similar concerns exist about salt in processed food which is believed to be inimical to good health, and also about a lack of fruit and vegetables in the diet of many children.

A poll conducted by Mintel in 2005 indicated that although the majority of parents claimed to encourage their children to eat healthily, only about half effectively strived to achieve this. The enquiry also concluded that three quarters of children (more girls than boys) claimed to know what a balanced diet consisted of, but that a half admitted not to live up to this, choosing instead to eat what they liked. Inspection shows a similar picture: more pupils

profess to know how to eat healthily than are seen actually putting this into practice when they eat lunches or snacks in school.

This is hardly surprising given the strength and complexity of the inducements which shape our food choices. Much of our social and cultural life is influenced in one way or another by food and drink. In turn, what we choose to consume is influenced by a complex web of pressures, including:

- availability, affordability and convenience of food
- personal preference, habit and emotional comfort
- where we live
- information, advertising, social pressures and fashion
- cultural traditions and religious belief
- attitudes towards weight, health and 'functional foods', i.e. those alleged to have specific health-promoting properties.

In a review of research, the British Nutrition Foundation concluded that interventions to persuade children to eat more healthily were more likely to succeed when a persuasive whole-school approach was adopted and at least one enthusiast on the staff was empowered to drive the initiative forwards, and that children were more likely to react positively to new foods if they were given opportunities to taste, handle and cook with them.[1] Success in persuading pupils to make healthy choices in their eating will depend on such initiatives to bring about long-term changes in behaviour.

In 1999, the DfES and the DoH launched the National Healthy Schools Programme. It aims to help raise pupils' achievement, reduce health inequalities and promote social inclusion, and to contribute to the government's Every Child Matters initiative. This aims to provide every child, regardless of background or circumstances, with the support they need to: be healthy, stay safe, enjoy and achieve, make a positive contribution and achieve economic well-being.

Linked to the programme are Healthy Schools Partnerships between local authorities and local primary care trusts. Working in each area, they aim for all schools to participate by 2009. Schools can achieve healthy school status by satisfying a number of criteria in each of: [1] personal, social and health education; [2] healthy eating; [3] physical activity; and [4] emotional health and well-being. The healthy eating theme covers the whole school day as well as school meals and the food technology curriculum.

A related DoH and DfES Food in Schools Programme supports primary teachers to develop their knowledge of diet and nutrition as well as cooking skills. Through local food partnerships, expert secondary food technology teachers support and train their primary colleagues.

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[1] 'A critical review of the psychosocial basis of food choice and identification of tools to effect positive food choice: a summary', British Nutrition Foundation, March 2004.

The training has now been running for three years and over 1,000 primary schools have taken part. A cohort of 70 trainers train secondary food technology teachers who can then train other secondary colleagues and support partner primary schools. The programme also offers support to primary schools working towards Healthy Schools status.

The recently launched Department of Health Food in Schools Toolkit – based on findings from pilot studies – guides schools in taking a 'whole-school approach' to healthy eating and drinking. It includes vending machines, the dining room environment, water provision and after-school cooking and growing clubs.

All of this supports efforts to achieve the Public Service Agreement target on childhood obesity:

> *'to halt the year on year rise in the prevalence of obesity in children under 11 by 2010, in the context of a broader strategy to reduce obesity in the population as a whole.'*

The next section examines how the provision of food technology in the secondary curriculum relates to the government's policy to promote health in schools.

3. Food technology in the secondary curriculum

3.1. The development and coverage of food technology

Not all G8 or our partner EU nations include practical food education in the school curriculum. Food technology has evolved here in line with our particularly English view that schooling has a major pastoral role to play in socialising pupils as well as in developing them academically. Food education was introduced into elementary schools in the late nineteenth century as tuition for working-class girls about to take jobs in domestic service or to prepare them to keep house and cook for their families. Both of these aims, one vocational and one social, reflected concerns about domestic poverty and community upheaval as the industrial towns continued to grow and absorb migrant workers from the land. The subject gradually developed into a broader coverage of home economics during the twentieth century with a focus, in cooking, on the preparation and serving of food for personal or family consumption in a domestic setting. It covered tuition in nutrition, food properties and various social, cultural and economic factors which influence our domestic lives.

With the advent of the National Curriculum in 1992, food technology emerged as part of the compulsory subject of design and technology (D&T). Although food technology was only made compulsory within D&T in the primary phase,

90% of secondary schools teach it in Key Stage 3 and around a quarter of the 77% of pupils in Year 11 who took a GCSE in D&T in 2004 did so in food technology.

D&T is a practical subject which bridges the academic/vocational divide. Knowledge learned in other subjects, especially mathematics and science, can be applied in creative project work. Pupils are taught to understand the characteristics of specific materials, components and systems and to use this understanding as they design, make and evaluate functioning products (see annex B). The subject's four focus areas of food, resistant materials, systems and textiles reflect the way in which it has been formed from an amalgam of several subjects that were once separate. Some of these catered for boys, some for girls. D&T was intended to be a broad subject catering for boys and girls of all abilities. This breadth and universality have been achieved within the crowded secondary curriculum but one of the side effects has been a severe reduction in the amount of time pupils have in Key Stage 3 to learn within each of the focus areas.

Within D&T, food technology's emphasis is on pupils combining an understanding of the physical, chemical, biological, nutritional and sensory properties of food materials with practical experiences and knowledge of food processing and safety in order to design and make food products taking account of commercial manufacturing.

A few schools teach hospitality and catering as a vocational course, either using their own facilities or in cooperation with local colleges, and some continue to teach home economics.

Pupils also study related aspects of food in other subjects, for example nutrition and the properties of materials in science, making reasoned health-related choices in personal, social and health education, and the distribution and production of food in geography.

3.2. Evaluating food technology

Food education continues to be popular with pupils in most schools and there is a high rate of entry for the GCSE. The limited specialist inspection evidence previously available indicates that the effectiveness of teaching in food technology is slightly better than in that for D&T as a whole. However, in recent years, concerns have been expressed by pupils, parents and headteachers to government officials and inspectors about food technology in the curriculum. These concerns include that:

- Too little time is spent learning to cook nutritious meals and too much time is devoted to low-level investigations and paperwork of unclear value.

- Pupils are required to engage in complex product development before they have an adequate understanding of food ingredients, nutrition, hygiene and cooking skills.
- GCSE requirements place a heavy emphasis on long coursework projects which some consider to promote repetition.
- Food technology GCSE courses need to incorporate the food and nutrition competences for 14-16 year olds prepared by the Design and Technology Association and British Nutrition Foundation on behalf of the Food Standards Agency and Department for Education and Skills.[2] This incorporation is now being carried out by the awarding bodies in conjunction with the Qualifications and Curriculum Authority.
- Some of the subject's contents such as the emphasis on designing food products, the use of computer aided designing and manufacturing and the coverage of systems and control have been imported from other parts of D&T and tend to distort the way food is taught.
- Longstanding practical difficulties continue to hinder the teaching of food technology. These include: the organisation of the D&T curriculum; a shortage of specialist teachers; lack of funding for ingredients; and increasing group sizes for practical work.

The evidence on these issues available through Ofsted's previous school inspection system was very thin. Given the concerns outlined above, Ofsted ran a small scale survey of provision in secondary schools in 2005, to seek answers to the following questions:

- What do pupils know and understand, and what is the extent of their capability, especially in Years 9 and 11?
- How effective are teaching and learning?
- To what extent does teaching progressively develop pupils' knowledge, understanding and capability in food?
- How effectively does the school monitor, assess and analyse pupils' achievements in food?
- How well does the curriculum meet the needs and interests of learners?
- How well is the food provision led, managed and resourced to enable pupils progressively to develop capability and the related knowledge and understanding?
- How well does the learning environment support the various aspects of food education?

The conference will outline the main findings from this survey. It will also highlight some key issues which need resolution in order to strengthen food

[2] 'Getting to grips with grub – food and nutrition competencies for 14–16 year olds', S Valentine (BNF) and J Jupe (DATA), published by DATA Research Paper 20, 2004.

technology's capacity to make a full contribution to the personal as well as technological development of pupils in English secondary schools. It will link in particular to the work currently being done within the Qualifications and Curriculum Authority to develop criteria for GCSE and GCE specifications.

October 2005

Annex B

The importance of design and technology

Design and technology prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think and intervene creatively to improve quality of life. The subject calls for pupils to become autonomous and creative problem solvers, as individuals and members of a team. They must look for needs, wants and opportunities and respond to them by developing a range of ideas and making products and systems. They combine practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices. As they do so, they reflect on and evaluate present and past design and technology, its uses and effects. Through design and technology, all pupils can become discriminating and informed users of products, and become innovators.

Source: *Design and technology – the National Curriculum for England. Key Stages 1-4,* DEE/QCA, 1999, p 15,.