

Investigating pupils' perceptions of their experience of food technology in the English secondary curriculum

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Introduction

Investigating pupils' perceptions of their experiences of learning is a powerful tool in helping to develop an understanding of teaching and learning (Benson and Lunt, 2011). Little has been published about pupil's attitudes and perceptions of food technology at secondary level in English schools. Coupled with policy changes to provide greater curriculum freedom (Academies Act, 2010; Curriculum Review, 2011) schools can perhaps explore a less descriptive dictate than that provided by the National Curriculum.

This paper reports on the perceptions of 120 Key Stage 3 (aged 11-14) pupils in seven secondary schools in the West Midlands, England. It looks at perceptions and values relating to the teaching of food technology. The evidence suggests that pupils understand that food technology is more than just learning to cook. They enjoy practical participation and engagement, active lessons and autonomy.

Introduction

Pupils' perceptions of their experience in school can provide a valuable insight to inform improvements in teaching and learning (Flutter and Ruddock, 2004; Benson and Lunt, 2007). This is combined with shifts in educational policy in the English curriculum with many schools opting for 'academy status' (Academies Act, 2010). Academies are publicly funded independent schools that have 'greater freedoms to innovate and raise standards' including a freedom around the delivery of the curriculum. By March 2012 1635 schools have become academies and therefore do not have to follow the rigours of the English National Curriculum (www.education.gov.uk). Schools can perhaps explore a less descriptive dictate, providing an opportunity to widen the scope of the subject to meet local needs.

Literature review - Food as part of Design and technology

The origins of food education prior to the introduction of the National Curriculum in 1990 (DES 1990) provided it with a craft skill, philanthropic and utilitarian function (Rutland 2006). The introduction of food as part of design and technology provided a more cognitive, conceptual and epistemic context. The evolution from home economics to food technology has proven to be popular with fifty five thousand pupils taking the full course in 2011 (www.data.org).

The value of practical skill development coupled with concerns about rising obesity rates raised the profile of food in school in the early 1990s. The Labour Government's cross department report *Healthy Weight, Healthy Lives* (DH/DCFS 2008) detailed the 'Licence to Cook' programme that provided pupils aged 11–16 with an entitlement to learn to cook. It provided a programme to enable students to develop practical cookery skills and understand the principles of diet and nutrition, health and safety and wise food shopping. The impact of this funded initiative was that 3,000 maintained secondary schools were trained and the emphasis in food education moved to basic practical skill development. OFSTED (2011) acknowledged the emphasis on cooking and healthy eating in schools during 2007-10 noting how the Licence to Cook initiative led to more opportunities for practical work and a greater concentration on making meals. For many food technology teachers this was a welcome return to the philanthropic-utilitarian function of food education. Others saw the transgression away from designing and making as a potentially limiting function as arguably, within design and technology, food looks at the wider impact of food on society (Rutland 2008).

It can be argued that food technology is about 'thought in action' (Rutland 2006) and not the rote learning of skills. Within design and technology food education provides the opportunity to think and investigate in practical ways by engaging with ingredients, processes, equipment and technologies to find solutions for a user and purpose. Ofsted (2006) articulated the concern that 'too little time is spent learning to cook nutritious meals and too much time is devoted to low level investigations and written work (p.10). However, a later Ofsted report (2011) was critical of the nature of design and technology noting that the subject holistically needed to be more intellectually challenging to include 'designing, product development, empirical testing and applying maths and science' (p.5).

The purpose of this paper is to look at pupils' perceptions of food technology so that pupil perceptions can perhaps inform the debate concerning the evolution of food technology in the curriculum. Research on pupils' perceptions of design and technology in secondary schools (Grover et al 2003, Thomas and Denton 2006,) found the elements that children found most enjoyable were making, working with tools and designing and the least enjoyable were written tasks and evaluating (e.g. Hendley et al, 1996; Hughes, 2001).

Methodology

It was decided that on-line questionnaires would be the most useful way to collect information in the time available, and with the number of people involved without the need for photocopying or postage (Cohen et al, 2007). It would have been useful to triangulate these results with interviews where the analysis provided interesting patterns, but this was not possible for this study. Both qualitative and quantitative data was collected through the questionnaires using open and closed questions. All questions allowed for cross checking; for example 'do you enjoy food technology' and 'would you describe food technology as fun'. Benson and Lunt's (2007) research into pupil perceptions in primary schools was used as a benchmarking tool for the question design.

A pilot study was conducted which highlighted issues of ambiguity, interpretation and bias. Some questions were modified in light of suggestions about wording. An analysis of the responses indicated that the information gathered should support the research.

A cohort of schools in the West Midlands was identified using the database of schools from a PGCE secondary teacher training data base. Twenty schools that teach food technology as part of design and technology were invited to join the research. Six responses came back within the time limit; it was these that were used for the research. It was decided to target year 8 groups as it was hoped that this cohort would have gained experience in food technology. Due to the policy of some schools to deliver GCSE courses in year 9 it was decided that the older year group would be less appropriate as this would target pupils who had 'opted' for the subject.

Confidentiality, consent and clear understanding as to the nature of the research were major considerations. The sample was informed by e-mail about the research, providing the opportunity to pre-view the questionnaire before agreeing to administer it to their groups. The purpose of the

questionnaire was explained on the first page of the survey. It was made clear that answers would be kept confidential, and that individuals would not be identified. The school that they attended was included for analysis purposes.

Fig 1.Survey Overview

School	male	female	Totals
School 1	8	15	23
School 2	11	7	18
School 3	0	19	19
School 4	7	7	14
School 5	13	9	22
School 6	21	3	23
Totals	60	60	120

Findings and discussion

The information was gathered over four weeks. Six schools completed the questionnaire with teachers identifying one year 8 group that they taught. This elicited 120 responses with equal numbers of boys and girls.

Did pupils enjoy food technology?

Evidence came from three questions the children were asked in the first section of the survey: Do you enjoy food technology? Would you describe food technology lessons as boring? Would you describe food technology as fun? A majority of 80% responded that they always/usually enjoyed food technology, although 48% did consider food technology to be sometimes boring. Overwhelmingly respondents thought the subject was always/usually fun (71%). Triangulated by a latter question 81% of pupils agreed that they like food technology lessons because it is different from most other lessons. Furthermore, in response to the statement 'it puts a smile on your face when you have made something of your own' 80% of respondents agreed. Very few females 2/60 disagreed with this statement.

Gender analysis shows that the majority of responses concerning enjoyment of the subject were in the 'always and usually' category for both genders but with slightly more girls (88%) than boys (72%) making positive responses. More boys considered the subject to be 'sometimes' or 'never' enjoyable (30%) compared to girls with only 12% of girls responding that it was 'sometimes' enjoyable and 0 females responding 'never'.

Fig 2 Do you enjoy food technology? Would you describe food technology as boring?

Do you enjoy food technology?	male	female	Totals
always	19	28	47 (39%)
usually	24	25	49 (41%)
sometimes	12	7	19 (16%)
never	5	0	5 (4%)
Totals	61	60	120
Would you describe food technology as boring?	male	female	Totals
always	4	2	6 (5%)
usually	11	4	15 (13%)
sometimes	28	30	58 (48%)
never	17	24	41 (34%)
Totals	60	60	120

Would you describe food technology as fun?	male	female	Totals
always	15	26	41 (34%)
usually	25	19	44 (37%)
sometimes	12	15	27 (23%)
never	8	0	8 (6%)
Totals	60	60	120

These findings were very similar to those of Benson and Lunt (2007) when questioning primary school children about their enjoyment in design and technology. They also found that slightly more girls than boys always or usually enjoyed the subject but, as in these findings, very few girls chose the 'never' category. As there is evidence that girls and women are under-represented in areas of science (Smith, 2011) food technology could be a route to engage more girls into science subjects.

Characteristics of the subject that pupils enjoyed

The evidence concerning characteristics came from two open questions asking about most enjoyable features and least enjoyable. The pupils' qualitative responses were categorised using word cloud data analysis software (www.survey.bris.ac.uk).

The data analysis identified words such as 'cook(ing)', 'food', 'fun', 'practicals' and 'making' as enjoyable features of the subject. There were references to designing 'I like designing things I cook', 'I like planning what to make'. There was also reference about independence 'so you feel confident enough to go home and try it out'. Forms of the term 'eating' were prevalent as was 'getting messy' and 'getting hands dirty'. The interaction with ingredients seem to be key characteristics to pupil enjoyment supporting Rutland's 2011 research that that designing and making food products should remain central in the subject.

Results for the least enjoyable aspects were dominated by the word 'writing'. This supports findings from earlier studies in secondary schools (e.g Hendley et al, 1996; Hughes 2001 and Neal 2003). Although the cognitive, conceptual and epistemic context is important for the subject's accountability teachers need to ensure that theory is delivered through practical application as this engages the pupils and is arguably one of the unique features of food technology.

What were the pupils' perceptions about the value of food technology?

Analysis related to the qualitative question 'why do you think we learn about food in schools' included the words 'cook', 'food' and 'eat' as well as terms related to nutrition ('diet, grow, healthy'), function (feed, family, yourself, future/older, job) and process (equipment/safety, know). Apart from the vocational reference to 'job' the perceived value seemed centred on food technology in the home. This contradicted a later question asking about the vocational context of food technology where 74% of pupils (with similar responses between the genders) agreed 'food technology lessons are important for life because it is useful in lots of different jobs' suggesting a dichotomy identified by Ofsted (2006:1) between 'teaching food to develop skills for living and using food as a means to teach the objectives of D&T'. Some critics (Owen-Jackson, 2007) suggest this is a false tension as practical cookery skills and nutrition can be used to develop food products and vice versa.

Pupils concluded in the qualitative statements that the least enjoyable aspect of food technology was 'writing' the findings of 'I would prefer just to get on and make, not to design (e.g. research, think about, plan)' are not conclusive amongst boys with only 52% agreeing compared to 72% of girls. This contradicted the response given to the statement about the value of designing with 67% responding positively. 'Problem solving' generated a mixed response between both sexes with a relatively high number of 'not sure' (28%). There may be many reasons for this and without further interviewing it is not possible to draw conclusions but due to the impact of the Licence to Cook programme (2007) it may be fair to judge that pupils are not given the opportunity to 'problem solve'

and 'design' in food but are given a more prescriptive curriculum based on skill development. This supports Rutland's (2008) research that questioned whether Licence to Cook was the 'death knell' of food technology due to its focus on practical skill development rather than an understanding of the properties of food so that pupils can make design decisions.

Fig 3

Statement	Agree	Disagree	Not sure
I would prefer just to get on and make, not to design (e.g. research, think about, plan).	Boys 52% Girls 72% Total 62%	Boys 32% Girls 20% Total 26%	Boys 16% Girls 8% Total 12%
I think designing is really important if you want to make a good product	Boys 64% Girls 70% Total 67%	Boys 23% Girls 15% Total 19%	Boys 13% Girls 15% Total 14%
In food technology lessons you have to think really carefully to solve problems.	Boys 40% Girls 45% Total 42%	Boys 35% Girls 25% Total 30%	Boys 25% Girls 30% Total 28%

The majority of pupils identified creativity and autonomy as positive values associated with the subject. For these pupils the opportunity to be autonomous problem solvers was evident. Work to encourage autonomy is a valued characteristic that supports Flutter and Ruddock's (2004) characteristics of a good lesson.

Fig 4

Statement	Agree	Disagree	Not sure
I like food technology because we get to use our own ideas rather than just being told what to do.	Boys 63% Girls 68% Total 66%	Boys 25% Girls 17% Total 21%	Boys 12% Girls 15% Total 13%
In food technology lessons we learn how to be creative (e.g think up ideas in different ways, try out different ways of making).	Boys 74% Girls 74% Total 74%	Boys 13% Girls 12% Total 12.5%	Boys 13% Girls 14% Total 13.5%

The final question focused on the issue of pupils cooking at home questioning Kerr and Horne (2003) noted the 'erroneous assumption' that children are taught to cook at home. This survey supported this opinion with 74% disagreeing with the statement 'learning to cook is a waste of time as I can learn this at home' with a further 7% unsure. There was a significant gender difference in responses perhaps due to the term "cooking" and the stereotypical imagery that this term may generate.

Statement	Agree	Disagree	Not sure
Learning to cook is a waste of time as I can learn this at home.	Boys 30%	Boys 60%	Boys 10%
	Girls 8%	Girls 87%	Girls 5%
	Total 19%	Total 74%	Total 7%

It must be remembered that this study was a small pilot, and whilst some evidence can be cross checked through analysis from different questions there are some areas that require further investigation through interviews with teachers and pupils. It is always tempting to offer the opportunity for further comment but this makes the data collection timely to complete and difficult to analyse. It also makes the data collection a written exercise that alienates some pupils from wishing to offer opinions. If offering pupils a choice of answers this may also limit the scope of the response.

Conclusion

It appears that whilst pupils (male and female) perceive food technology as enjoyable when it is 'hands-on'; they do not see as having a narrow "craft-skill" utilitarian function. They recognise the unique contribution it makes to the curriculum being 'different from most lessons' as it 'puts a smile on your face when you have made something of your own'.. Although popular with both genders it is enjoyed slightly more by girls. Is this a problem or could it be an advantage? With an increased emphasis on science could the subject be a route to engaging girls in the sciences?

Characteristics pupils enjoy include the practical interaction with ingredients. As with Benson and Lunt's (2007) research into primary school pupils' perception of design and technology pupils appear to enjoy thinking and investigating in practical ways and it is perhaps this engagement with ingredients and processes that is fundamental to the position of the subject in the curriculum. Designing and creativity are also features that they enjoy and through several strands of the research the theme of independence and autonomy seems to be welcomed. Perhaps predictably the least enjoyed aspect is writing but the potential to engage pupils in theoretical aspects through practical application is an opportunity so that pupils think and investigate in practical ways. Perceptions of the value of the subject seem to go beyond 'cooking' and 'food' but also to include nutrition and its functions in the home and the world of work as well as equipment and safety. Perceptions about the need to perform design, research and problem solving tasks varied and further research would be needed to investigate the reasons for this and the possible impact of the Licence to Cook programme. Whilst pupils perceived that food technology was more than just cooking they also recognised that learning how to cook was not something they would learn at home.

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