

# School meals: education for guided choice

Richard Day & Mary Kinsella

West Cumbria Health Authority

School lunches offer schools the chance to support nutrition advice with 'healthy' choices at the counter. In past issues we have reported on schemes aimed at influencing food selection, the scheme described here is now in its second year of operation, and has been taken up by neighbouring schools as well. It made the children 'far more aware of the type of food they were eating and the effect of different foods on their health'.

---

Even before the project started at Wyndham School, West Cumbria, several changes had been made in the interests of 'healthy' eating, such as using wholemeal flour in pastry and reducing the amount of fat used in the preparation of various dishes. In many cases, however, the pupils were not making sensible food choices, nor taking advantage of the facilities the school meals service were offering. Also, there were few opportunities for any guidance to be given at the meal hatches. For this reason, in 1986, the School Meals Organiser in Copeland, West Cumbria, drew together an interested group at Wyndham School, including teachers, the District Dietician, and the District Health Promotion Officer, to address the concept of *education for guided choice*. This is an account of what happened in this one school.

After discussion, it was decided that a project was needed which would make the children more aware of the nutritional value of different foods offered for sale as a choice on the school menu. It was agreed that the children needed to be involved in the project, which initially was aimed at one group of 11-12 year olds (1st-year reception children), who

used a separate dining-room from the rest of the school.

Ideas about how the nutrition education of the children could be achieved were discussed. A 'traffic light' system of labelling good foods green and bad foods red was rejected, as it was felt to be too negative. It was felt that a more positive approach was needed, and a 'star system' was suggested, whereby the more 'healthy' foods would be given a greater number of stars, thus encouraging the pupils to collect them.

The aim of the project was to:

1. Encourage the pupils to make a good choice of food in the school canteen;
2. Encourage the children to develop an awareness of simple nutritional principles, by using the star system as a guide.

## The school meal stars system

In order that the children could understand the working out of the star system, it was decided that we had to keep the system as simple as possible. The system measured just four parameters:

1 star for the presence of fibre

1 star for the presence of protein

1 star for the presence of vegetable  
1 star for no extra added fat

Using this system, we went through all the main-course recipes and gave each item a star rating. We did have to make certain assumptions — for example, short-crust pastry was given a total of two stars, made up from 1 star for fibre (50% wholemeal flour was used) and 1 star for no extra added fat; whereas puff pastry was given a zero star rating, since it was made using white flour, and a much higher percentage of fat is used in the preparation of puff pastry.

Some discretion on our part was also used in awarding the star rating to certain dishes — for example, if milk or egg was used in certain recipes in relatively small amounts, then this was not given an extra star for protein content. For the pudding dishes we had more problems in deciding which parameter to use — eventually we decided to award three stars to a pudding if it was high in fibre and it contained either fruit or protein, but only one star was awarded if the dish was high in fat and sugar.

Each non-sugary dish was awarded one star, and sugary drinks were not awarded any stars at all. Lemonade and Coca-cola were taken off the menu altogether. Pure fruit juice was available, as were milk and milk products, and their use was encouraged by the District Dental Officer. As pure fruit juice was costly, a fruit drink was made available at a lower cost.

Water was awarded one star in the hope that children who could not afford to buy a drink could still have a drink free of charge and gain a star.

**Setting up a target**

We had to give the children a target to aim at: this target had to be realistic, and not favour the children who had most money and could therefore buy expensive foods in order to make up the number of stars. We also had to make sure that the children who were entitled to free school meals and had an allowance of up to 68p-worth of food could also achieve the target easily within this allowance. With all these factors in mind, the daily target for school lunch was set at eight stars.

The children themselves were involved in the project by making posters advertising the star system — for example, *STAR TIME IS HERE!* The menu boards were all labelled with the star value next to the name of the dish and its cost, and once the star system had started, the children were asked to total up the 'number of stars they had eaten'. Their own graphs of their daily total were kept within the classroom.

**Assessing the effect**

The purposes of the star system were two-fold:

1. To encourage the choice of better foods, as indicated by the NACNE report;
2. To improve general knowledge of nutritional principles.

They are placed in this order because in this instance the school is being considered primarily in its practical role of health promoter, discharging its responsibility to provide 'healthy' choice and ensure 'healthy' choosing. It is, however, recognised that knowledge is one route to behaviour change, and the scheme may well reinforce the nutritional education going on elsewhere in the school.

However, the main purpose of the pilot study was simply to test this new idea of a star rating system — to see if it was workable, and if it would be used once set up. This aspect is dealt with more fully below.

Three major indicators were used in an attempt to assess if the intervention had any or no effect on food choices or nutritional knowledge:

1. *Quiz evaluation* The pupils' knowledge gain was evaluated by a two-part quiz (see box) tackled by the trial group (who had been exposed to the system for a whole term) and by a control group who had been exposed for one week. The intention of this was to compare the effects of long-term experiential learning with the often confusing short-term interest aroused by novel treatments.

2. *Purchases made* A sample day of till receipts for the trial group and the

*The quiz used to evaluate the level of nutritional knowledge in the two groups of pupils.*

**TICK THE CORRECT ANSWER**

- |  |                   |
|--|-------------------|
| 1. Fat is present in .....                                 | 1. Chocolate cake |
|  | 2. Jacket potato  |
| 2. Tooth decay can be caused by eating .....               | 1. Boiled sweets  |
|  | 2. Cheese         |
|  | 3. Bread          |
| 3. In which of these foods would you find fibre? .....     | 1. True           |
|  | 2. False          |
| 4. Brown eggs are better for health than white eggs .....  | 1. True           |
|  | 2. False          |
| 5. Which fruit has the highest content of Vitamin C? ..... | 1. An apple       |
|  | 2. A banana       |
|  | 3. A grapefruit   |
| 6. Baked beans are high in fibre .....                     | 1. True           |
|  | 2. False          |

Plan your favourite meal, bearing in mind your 8-star target

FIRST COURSE .....

SECOND COURSE .....

NUMBER OF STARS .....

NAME .....

CLASS .....

Closing date: 2.00 p.m. on Tuesday 3 February 1987

**PRIZE: SURPRISE!**

control group was chosen to compare general patterns of spending—for example, did the pupils who spent more on dinners also spend more on 'healthy' choices?

3. *Choices* The overall sales of particular items were used to compare 'healthy' and 'non-healthy' choices between the trial and control groups.

**The results**

*Quiz evaluation* Table 1 indicates that a marked difference exists in the knowledge of the children in the two groups, as measured by their responses to the quiz.

*Purchases made* Table 2 shows that the pupils in the trial group managed very much better than those in the control group with respect to using the free-meal allowance to its best advantage, and we should like to think that this was as a result of the knowledge gained from the project.

It is noticeable, from Table 3, that nearly a quarter of the control group spent only between 10p and 20p on school lunch, compared with only 3% in the trial group; also that a quarter of this group spent between 61p and 70p, compared with 11% in the control group.

**Table 1.** How the pupils in the control and trial groups performed in the evaluative quiz.

Quiz performance	Length of 'exposure'	
	Control (one week)	Trial (one year)
Incorrect top section . . . . .	72%	38%
Correct top section but incorrect star rating . . . . .	17%	26%
All correct . . . . .	10%	36%
Number of pupils responding	58	53

**Table 2.** Comparison of spending by pupils qualifying for subsidised school meals.

Amount spent	Control group	Trial group
31 - 40p . . . . .	8%	0%
41 - 50p . . . . .	18%	3%
51 - 60p . . . . .	34%	41%
61 - 70p . . . . .	40%	47%
71 - 80p . . . . .	0%	6%
81 - 90p . . . . .	0%	3%
Number of pupils . . . . .	38	32

It might be summarised that the pupils in the trial group were placing a greater value on their school lunch.

**Choices** Table 4 indicates the percentage of pupils in the two groups selecting certain food items, as derived from an analysis of overall sales. We may summarise by saying that the trial group tended to choose 'healthy' foods and the control group tended to select 'unhealthy' ones - in the case of the figures for fruit, which contradict this trend, there were in fact great differences in presentation at the point of sale.

The figures in parentheses, which were derived from a check one term later, indicate a noticeable difference between the selection of chips, and a substantial difference between the selection of vegetables.

The conclusions to be drawn from all these results are as follows:

1. The star system seems, over a long period of experience, to be associated with greater learning of intended nutritional knowledge.

2. Those pupils with the guidance of a star system seemed to be more content with the school meals - the available choices were the same for both groups.

3. The star system was associated with an increase in the percentage choosing 'healthy' food and a decrease in the choice of 'unhealthy' food.

### Lessons learned from the star-system experiment

Any new system, when devised on paper, can never be evaluated properly until the system is in action and all the pitfalls can be seen. Our aim had been to find a simple method of guiding schoolchildren to make sensible choices for their school meals, and, to a greater or lesser extent, we have achieved this. This has been achieved not just by using the star system but also by the great efforts that had been made in the classroom by the teachers, who had

Having now had time to reflect on the star system, we feel that the basic idea of giving children a positive target to aim for is good, and feel that children will respond more readily to positive aims than to

being told negative facts all the time - for example, "don't eat chips because they are bad for you". However, having done the experiment for a full school year, we felt there should be a few amendments to the basic parameters used for the star system. We proposed an increase in the number of parameters from four to five, and that the same parameters should be used for both the main course and the pudding, as the two different sets originally used (see above) did cause some confusion.

The proposed amendment to the way stars are awarded to each food item or dish was as follows:

- 1 star if it is high in fibre
- 1 star if it contains protein
- 1 star if it contains fruit or vegetable
- 1 star if it contains no added fat
- 1 star if it contains no added sugar

Using this system, we feel that each dish can easily be given a star rating. The

extra star for no added sugar must be given for the main course dishes in order to maintain the differential between the main course dishes and the puddings; otherwise we may get certain puddings with a higher star rating than the main courses, which could lead to confusion and poor choices from the children.

As far as the drinks are concerned, we decided to leave them with the same rating as in the previous year. We also recommended that a new 9-star or 10-star target be set for the children to achieve.

There is no doubt that we shall find further amendments needing to be made each time we run the experiment, but we now feel that we have a good base from which to work.

**Contact:** Richard Day (District Health Promotion Officer), West Cumbria Health Authority, Whitehaven Hospital, Flatt Walks, Whitehaven, Cumbria CA28 7SS. Telephone: Whitehaven (0946) 5551.

**Table 3.** Comparison of spending by pupils taking non-subsidised school meals.

Amount spent	Control group	Trial group
0 - 10p . . . . .	1%	1%
11 - 20p . . . . .	23%	3%
21 - 30p . . . . .	8%	7%
31 - 40p . . . . .	17%	14%
41 - 50p . . . . .	20%	14%
51 - 60p . . . . .	17%	21%
61 - 70p . . . . .	11%	23%
71 - 80p . . . . .	1%	10%
81 - 90p . . . . .	1%	3%
91 - 100p . . . . .	0%	2%
Number of pupils . . . . .	82	146

**Table 4.** Food choices derived from an analysis of sales. (The figures in parentheses came from a check one term later.)

Items bought	Control group (%)	Trial group (%)
Fruit . . . . .	5	12
Chips . . . . .	47 (50)	66 (62)
Vegetables . . . . .	44 (93)	23 (0.5)
Lasagne/cauliflower cheese (new dishes) . . . . .	7	0
Hot dogs . . . . .	13	38
Jacket potatoes . . . . .	20	7