

PROCEEDINGS OF THE NUTRITION SOCIETY

The Two Hundred and Eighty-sixth Scientific Meeting (One Hundred and Fourteenth of the Scottish Group) was held at Queen Margaret College, Clerwood Terrace, Edinburgh, on 7 November 1975

SYMPOSIUM ON 'NUTRITION EDUCATION'

Nutrition education in Scottish schools

By HAZEL MITCHELL, *Dundee College of Education, Gardyne Road, Broughty Ferry, Dundee DD5 1NY*

Nutrition is a subject which has been taught directly and indirectly in Scottish schools for about a hundred years. Nowadays it is closely linked with food preparation (cookery), but over the years it has had a chequered career. When the Education (Scotland) Act of 1872 (Great Britain: Parliament, 1872) was passed knowledge of the subject was slight and little effort was made to teach it.

The 1872 Act made schooling compulsory but it was several years before it became fully operable, as existing buildings had to be acquired and additional premises built. By 1884 the report of the Committee of the Council for Education in Scotland (1885) stated: 'Cookery is taught in thirty-six schools. . . . After elementary subjects and sewing no subject is of as much importance for the class of girls who attend our schools'. Nutrition teaching at this time, if any, related to the purchase of food. Teachers were untrained, some having learned skills at a school of domestic economy in a city while others were assistant female teachers who had completed a short theoretical course in cookery, food purchasing, home management and needlework at the Normal College. Most had minimal practical experience and therefore tended to rely on home experience for their craft skills. Any nutrition education was acquired by rote learning, and, from contemporary reports, understanding was minimal.

As building increased, progress in the subject advanced. By 1903, cookery was taught in 704 schools, and lessons comprised 'food, its preparation and culinary treatment, function and nutritive value'. Unfortunately buildings did not expand as rapidly as the school population and classes of 154 pupils were recorded. In such instances teaching was by demonstration followed by note-taking. Where circumstances were appropriate demonstrations were followed by practical work done by groups of four pupils preparing the dishes together. Both practices were undesirable, there being no true opportunity to test skills. Teaching remained unsystematic and learning largely by rote, this being a direct consequence of the teachers' own training. Improvement in training was essential but several years elapsed before recognizable training was instituted.

In 1897 a report (Committee of the Council for Education in Scotland, 1897) stated: 'A peculiar thing about Cookery is that there is no scheme drawn up to guide the teachers'. After the 1872 Education Act a 'Scotch Code' was published annually to instruct school managers and headmasters regarding management, money and teaching. Syllabuses were laid down for elementary subjects. These had to be followed rigidly, regular inspection taking place. Disregard led to withdrawal of grants, cuts in salaries and occasionally to dismissal. The inspectorate were all men, although a woman directress assisted with needlework problems. The men, feeling incompetent to deal with domestic economy, inspanned an English inspectress to review the situation. Her recommendations included: (1) a maximum of fifty-four pupils to attend demonstrations; (2) practical work with pupils practising in pairs; (3) keeping of records, and (4) provision of a scheme of work. These suggestions were gradually implemented and an inspectress appointed. Her immediate requests were that the minimum age of pupils should be 12 years and practical classes should be for 2 h periods. The former generally applies today and many teachers would wish the latter also applied. Regarding teaching, the recommendation that 'whenever possible by simple experiments the pupils should be made to understand and apply the reason why' was urged and today the same suggestion may be heard. Lack of interest in such an approach is one of the disappointments which one meets.

Many teachers considered domestic economy inferior to 'the literary side' but by 1907 a report (Committee of the Council for Education in Scotland, 1907) states: 'Head teachers now support the work more cordially and attach to it a place of greater importance in the curriculum'. Soon the subject was offered at higher level for the Scottish Higher Leaving Certificate. Meantime boys were taught with apparent success.

In 1908 an Act was passed (Great Britain: Parliament, 1908) concerning the provision of school meals. The Act merely recommended that the meals should be provided and not until the First World War was this made compulsory (Committee of the Council for Education in Scotland, 1914), despite the yearly reports of the Medical Officer of Health concerning high incidence of anaemia, bad teeth and general undernourishment. Children frequently suffered from lack of sleep, over-work (many having jobs before and after school as well as in the dinner-hour) poor feeding and overcrowded home conditions. Poor home management and disinterest in cooking were reported, indicating lack of impact of the school training. Obviously other factors within and outwith the home affected the situation but comments such as 'the main diet in certain areas is tea, potatoes, bread and jelly' must have disheartened those concerned.

During the war years the situation deteriorated further: food was short and school practice consisted largely of making the compulsorily provided school dinners. Little was done to help those pupils who were obliged to prepare breakfast and evening meals for themselves and other siblings. Fortunately more care was taken to provide school dinners with adequate 'roughage, fats and proteids'. One might hope that some learning was acquired from these.

Immediately after the war, stringent financial cuts became necessary and subsequently little progress was made in teaching food subjects. Numbers fell sharply in 1928, when 'commercial' courses with apparent greater job opportunities were advocated. A strong recommendation that 'Cookery with instruction in food values and economical buying should form a part of the training of every schoolgirl whatever the course she is taking' fell on stony ground, but a new Allied Science syllabus in 1933 (Education Reports (Scotland), 1934), whereby 'the principal constituents of food, vitamins, food values and presentation of food' were included along with physiology and hygiene, was accepted as a move in the right direction.

From the mid-thirties to the Second World War little change took place. Methods of teaching varied and depended largely on the motivation of the teacher and the methods by which she was taught. More interest was taken in nutritional aspects, but only a portion of current knowledge was available. Techniques were simple, rote learning with minimal application being common. There remained a marked leaning towards teaching craft skills rather than an amalgam of these skills, applied food science and nutrition. This probably arose from (a) a genuine confidence in craft skills, (b) training which tended towards specific teaching of science and nutrition with only tenuous links with craft and (c) short class lessons where the expectations of class and teacher alike were in terms of a 'dish'. To this day college training appears a major affecting factor in terms of teaching methods and a survey might indicate that the methods taught in specific subjects will be used in the teaching situation rather than methods recommended at a college of education, irrespective of whether they are suitable for the class or the teacher. 'New' methods are frequently resisted as change appears synonymous with uncertainty, and lack of initial success blamed on a faulty method rather than lack of practice in a new system. To investigate techniques in current use in terms of pupil learning might be interesting.

The present situation with regard to nutrition education is complex. The report *Primary Education in Scotland* (Scottish Education Department, 1965) gives suggestions for content and method. Many teachers have put these into practice and pupils learn not only sources and functions of the main nutrients but attempt to evaluate some of the foods which they eat. School dinner menus provide excellent material and pupils learn good selection from the choices available, albeit this may not be put into practice. Eating patterns are related to varied home circumstances and should the occasion arise comparisons of eating habits and patterns of different ethnic groups are considered. Radio and both channels of television run programmes on food education which are used in schools when possible. Most of the learning, however, comes from discussion, reading, film, film-loops, and occasionally from practical food preparation. Many infant rooms have small cookers and pupils 'cook' in groups. Such exercises are related to language, number and measurement. Similar work continues throughout the school where facilities are available. Contrary to expectations of home economics teachers, there appears little effect on attitudes to the subject in Secondary schools.

Secondary school pupils are required to take a common course for 2 years to allow for orientation to the new environment, school subjects and methods of teaching. Specific recommendations are given in Curriculum Paper no. 2 (Scottish Education Department, 1972a) regarding subject groupings, time and locations. Most girls complete short courses in food studies, some boys having equal opportunities. Nutrition is taught also in aspects of social studies, science, physical education, health education and guidance. Occasionally conflict arises, in terms of nomenclature and interpretation for example, and integration is obviously necessary. Encouragement given by the Scottish Education Department to co-operative teaching in terms of co-ordinated courses is helping to break down subject barriers (Scottish Education Department, 1971a).

In food studies pupils learn to divide food into groups. These may be from three to seven in number according to the ability of the pupils and the teacher's preference. Smaller groupings are easier to remember but not very accurate, so a happy medium is frequently struck. Forty years ago and earlier three groups: body-builders, heat and energy foods, and protective foods were used. The inaccuracies and problems are obvious. Currently many teachers use a 'Basic Four' in which foods are divided into four main categories. Pupils make their own model on a card indicating the four groups as follows: (a) milk and cheese, four servings (yellow); (b) eggs, meat and fish, two servings (red); (c) bread and cereals, four servings (blue); (d) fruit and vegetables, four servings (green). The four areas are arranged in a 2x2 square with (a) and (b) above (c) and (d), so that the animal food sources of protein are above and the plant food sources are below. The areas are coloured accordingly to help poor pupils with category identification, and the particular placing of the squares assists with easy meal planning. Recommended allowances of essential nutrients are covered should the appropriate quantities of food be provided, irrespective of the meal pattern. The recommended servings in terms of food to be purchased are listed accordingly on the reverse of the card, with emphasis on food selection. The guide is used for daily purchase or use of foods for any food budget. Problems arising regarding the eating of flesh or other taboos are dealt with immediately should they be necessary, otherwise the problem is discussed at a later stage. In these instances a fifth category is introduced in the form of pulse foods, usually inserted between animal and plant food sources. Other additions to the data include recommendations to eat liver and oily fish once/week, and to take additional fat in the form of butter or margarine and the like.

As pupils increase their repertoire of dishes, more time is spent on economical cookery where pulses, bread and other vegetable-protein-rich sources are used to provide appetizing, cheap dishes. Particular stress is laid on flavour, texture and smell as well as general appearance and cost. In some schools lessons are short and accommodation is at a premium. Lessons may be taken in form rooms where food may not be used. Materials from school resource centres, school libraries and manufacturing industries may be used along with programmes from radio and television, live or taped. Teaching techniques need not comprise 'talk and chalk'. Pupils can learn through role play, interviews, discussion, problem-solving,

experimenting and reporting or from outside visits or visitors. Where money is available tape-slide units make an excellent learning medium, and have the advantage that teaching aims and objectives have been especially well scrutinized for maximum cost-effectiveness.

Pupils concentrate on sources of protein and carbohydrate in earlier years, with minimal reference to vitamins and minerals. By the end of their fourth year they should have a working knowledge of necessary nutrients, their source, function and average recommended needs in terms of food and food portions. Those pupils taking Higher Grade food and nutrition examinations complete 'A deeper study of nutrition through the use of simple food tables and Government surveys of domestic food consumption in Britain, leading to nutrition consciousness and an awareness of differing dietary needs . . . further work in menu-planning, linking an understanding of the main food groups and our national resources in this respect' (Scottish Certificate of Education Examination Board, 1975). Comparisons of eating patterns past and present form useful exercises in evaluation, as do comparisons of the habits of varied ethnic groups.

Problems of handicapped persons in terms of eating and preparation of nutritious foods are considered, and although the main emphasis is on the adolescent, many pupils spend time investigating the needs of young children and the elderly, combining such exercises with 'community' work outwith and within the school (Scottish Education Department, 1972*b*). Early school leavers have made an excellent contribution in this respect. Many pupils are unwilling learners but well-planned courses in these areas of diet and health can be made acceptable and enjoyable, having the advantage that the interest leads to improvement in speech, language, number, reading and measurement. Numbers in such classes are increasing.

Other subject contributions include the following.

(a) *Curriculum Paper no. 7 (Science)*. Under the heading 'Transport systems', data on carbohydrates, fats and proteins, balanced diet, food testing, digestive system and the elimination of waste are given (Scottish Education Department, 1971*b*). This contribution is especially useful for concurrent science and food preparation courses and where no other source of nutrition teaching is available to pupils it is invaluable.

(b) *Curriculum Paper no. 3 (Modern studies)*. This recommends investigation of 'Food and people' (preferably with the co-operation of other departments) (Scottish Education Department, 1970). Areas to be covered include comparisons of living standards related to food and health, a detailed study of food, essentials of a good British diet and an evaluation by quantity and quality of energy, proteins and minerals. Contributions of geographers and economists to help with a wider understanding of food production, population growth and control and social customs are invaluable.

(c) *Curriculum Paper no. 12 (Physical education)*. This now contains minimal reference to nutritional aspects of health education but a strong link is seen in physiology (Scottish Education Department, 1972*c*).

(d) *Curriculum Paper no. 14 (Health education)*. The problems of nutrition teaching are recognized and biology, physical education and homecraft are seen to be essential contributors (Scottish Education Department, 1974).

Areas where contributions may be made are shown and a plea that 'there should be a clear understanding about the responsibility of each teacher concerned' is made. This concurs with recommendations for co-ordinated courses where home economics is the core subject.

Teaching of nutrition as such has taken place for over a hundred years with normal changes in terms of content and methods of teaching. More pupils than ever before are having the opportunity to study the subject and most should have a working knowledge from the various contributory sources before they leave school. Demand for such learning is likely to increase.

REFERENCES

- Committee of the Council for Education in Scotland (1885). *Report*. London: H.M. Stationery Office.
- Committee of the Council for Education in Scotland (1897). *Report*. London: H.M. Stationery Office.
- Committee of the Council for Education in Scotland (1907). *Report*. London: H.M. Stationery Office.
- Committee of the Council for Education in Scotland (1914). *Circular no. 461*. London: H.M. Stationery Office.
- Education Reports (Scotland) (1934). *Circular no. 30*. London: H.M. Stationery Office.
- Great Britain: Parliament (1872). *The Education (Scotland) Act 1872*. 35/36 Vict. Ch. 62.
- Great Britain: Parliament (1908). *The Education (Scotland) Act 1908*. 8 Ed. 7 Ch. 63.
- Scottish Certificate of Education Examination Board (1975). *Scottish Certificate of Education Examinations*. Edinburgh: Banks & Co. Ltd.
- Scottish Education Department (1965). *Primary Education in Scotland*. London: H.M. Stationery Office.
- Scottish Education Department (1970). *Modern Studies for School Leavers. Curriculum Paper no. 3*. London: H.M. Stationery Office.
- Scottish Education Department (1971a). *Co-ordinated Courses for Girls*. London: H.M. Stationery Office.
- Scottish Education Department (1971b). *Science for General Education. Curriculum Paper no. 7*. London: H.M. Stationery Office.
- Scottish Education Department (1972a). *The First Two Years of Secondary Education. Curriculum Paper no. 2*. London: H.M. Stationery Office.
- Scottish Education Department (1972b). *Community Service and Scottish Secondary Schools. Curriculum Paper no. 8*. London: H.M. Stationery Office.
- Scottish Education Department (1972c). *Physical Education in Secondary Schools. Curriculum Paper no. 12*. London: H.M. Stationery Office.
- Scottish Education Department (1974). *Health Education in Scottish Schools. Curriculum Paper no. 14*. London: H.M. Stationery Office.