Primary Data

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Teaching;
Infant;
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Summary

This article gives a rare insight into the way in which statistical thinking may be introduced in the primary school classroom.

◆INTRODUCTION◆

IF you are not used to it an Infant classroom may be a bewildering place. The tables and chairs are low, very low. There is a range of equipment and apparatus which is difficult to absorb, some of which requires imagination to define a use. The children are about waist height and because you are a stranger will eye you suspiciously and say things like "why are you here?". Or "I don't like your jumper, my Dad had one like that but he got rid of it". There is a computer with a concept keyboard operated perfectly adequately by a five year old who says "No" when you ask him politely if he will explain what it is he is doing. There is sand, water play, a home corner, interest table, number games, flash cards, paint, chalk, plasticine, beads, cubes, jigsaws, books, crayons, tracing paper, a gerbil called 'Jaws' and a mop and bucket. It seems to be a long way from spreadsheets, medians and distribution curves. Yet is it?

The development of an awareness of data collection, recording and interpretation begins here, not just in a haphazard or incidental way as a component of something else the children happen to be undertaking but as a planned, rigorous pathway towards the discussion of ideas, communication of findings, the introduction to a new terminology.

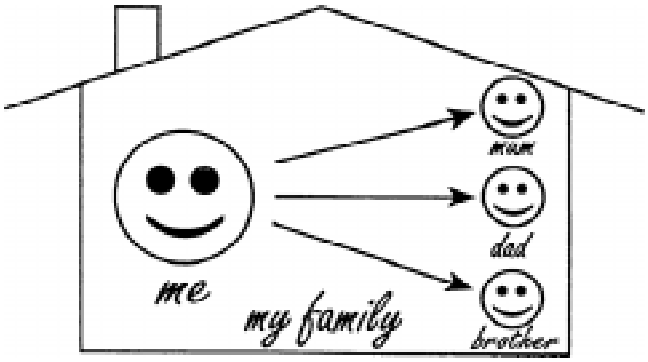
◆THE CONTEXT ◆

It starts with the child, with the child's most immediate experiences - otherwise there is no meaning. Where else can you begin? The children may not have a high level of reading or numeracy skills as yet, although there can be a wide range of ability in an Infant class. The introduction of data handling was intended to be integrated within the topic of 'Family and Homes'. This topic forms a part of the school wide (three year) topic cycle.

It was a mixed ability, multi-cultural Year 1 class. The general aim of the topic was to introduce the notion of 'community'. That is to see the child in the home, the home as part of a locality, and from there to investigate the inter-relating factors which go into the making of that community such as houses, shops, transport and the jobs people do. Of course, being Year 1 children the actual topic content was fairly simple, but ways of communicating this knowledge were complex. Much of the emphasis was on the development of spoken language and vocabulary.

The immediate objective was to allow the children to place themselves within a family and the family within a home. To give the children the opportunity to talk about themselves, and to a certain extent about their surroundings. The resources needed included a photograph of themselves, access to the usual materials such as paper, crayons and scissors.

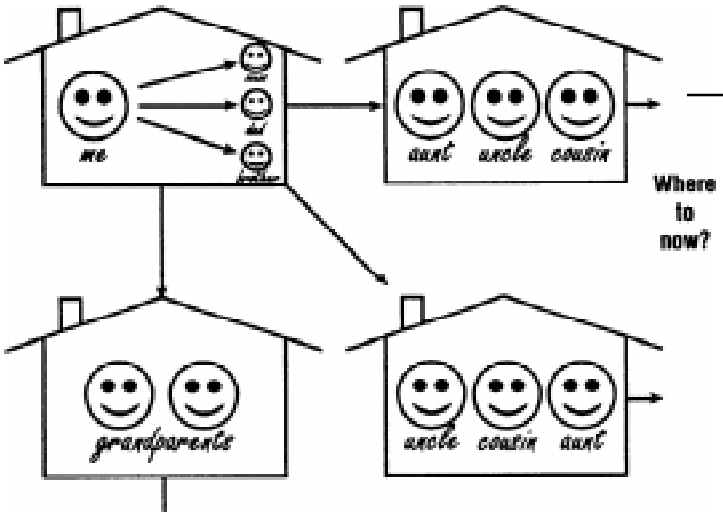
The starting point was the children themselves. The photograph was placed on a large sheet of paper and arrows drawn to pictures of their family, or at least the people they lived with. A degree of sensitivity was required here for reasons you can probably understand. Once completed they talked about the results to the teacher and other members of the class.



From there the diagrams were taken to the family 'outside the house' such as grandparents, aunts and uncles. They were asked specifically to talk about visits to relatives, describe where they lived, perhaps think of special occasions when they might get together in an attempt to see the links between themselves and other

people, and then to show these links by the use of arrows on the diagrams. The results were placed either on the floor of the carpeted area, the playroom, or the walls of the classroom, thereby prompting further discussion.

This was a very personal piece of work, so the children worked initially as individuals, coming together at regular recall sessions.



As we are in the fortunate position of having a large shared area, all available space could be utilised as the work expanded. The idea was to foster a way of looking at things, develop mathematical thinking through the search to see links, to record them, to question and begin the process of stressing certain factors while ignoring others. For example, there were decisions to be made about the inclusion of people living temporarily in the house from larger extended families. One child asked about recording pets for her the dog was a real member of the household. We had to decide on that one. Did we include cats and dogs but leave out the goldfish? These may seem trivial to us but are important issues to the children, Much of this valuable talk centred on 'recall times', a short period when the lesson was discussed by the children. It presented the chance to assess the activities on a whole class and individual basis, to draw out any points which may have been raised. The activity was basically about relationships, linking the child to others and recording those links. As Caleb Cattegno stated

> "Awareness of relationships *per se* is what distinguishes mathematical thinking from all other thinking".

At an early stage children are beginning to realise that data are about people rather than just numbers, that they tell a story. In fact the children were asked several times to 'tell a story about their diagram'.

◆ASSESSMENT ◆

The recall sessions were the mechanism by which mathematical thinking could be recognised. This was supplemented by informal observation during the course of normal classroom interaction. The diagrams were large and colourful, lending themselves to reaction. They may even be considered as replacements for the actual person, so the first stage of a modelling process.

◆CROSS-CURRICULAR ◆ IMPLICATIONS

The activity naturally draws into its sphere experiences and skills from other areas of the curriculum. Some are outlined below with UK National Curriculum Attainment Targets indicated in brackets:

Technology: *I can tell other people about my work (AT3.2a)*

Geography: *I can talk about a place I know (AT1.1ib)*

English: *I can talk and listen within a group of my friends (AT 1.1a)*

As far as mathematics is concerned some of the attainment targets which can be developed during the course of the topic are:

- using mathematics as an integral part of practical classroom tasks (AT1 .la)
- talking about their own work and responding to questions (AT1 .lb)
- making predictions based on experience (AT1.1c)
- recording with objects or drawing and commenting on the results (AT5)
- creating simple mapping diagrams showing relationships and interpreting them *(AT5).*

◆CONCLUSION ◆

The children quickly understand that data handling is relevant, a part of everyday life, and that they have an element of control over the work they are asked to carry out. If someone has produced a diagram which is not clear they can ask immediately for an explanation, and will do so. The relationships between the family and the wider community can then be explored through investigation of jobs, location of shops, schools, leisure facilities, and so on. Such an approach enables, children as young as 5 or 6 years of age, as in this case, to 'use and apply' mathematics in a way which is exciting and relevant.