The final report of the Williams committee (DCSF, 2008: 68) argues that the revised mathematics Framework (DfES, 2006) ‘should be reconsidered to achieve a more suitable, user-friendly form’. It might also have added that there is not much help and support in it for early years teachers. A much more useful document is the Practice guidance for the early years foundation stage booklet (DfES, 2007), as it provides details of the Problem solving reasoning and numeracy (PSRN) area of learning and development from birth to 60 + months. In this article I examine the approach to teaching number outlined in the two sections Numbers as labels and for counting and Calculating (pp. 63-69), comparing this approach to that exemplified in the reception section of the original Framework for teaching mathematics from Reception to Year 6 (DfEE, 1999).

Numbers as labels and for counting

Matching

The emphasis in the first two sub-sections (birth to 20 months) is on number rhymes and songs, and on familiarising children with the number names and their specific order. From 16 to 26 months the emphasis shifts to ‘sorting and matching’ and ‘one-to-one correspondence’. The examples given at this point, namely, ‘give each dolly a cup’ and ‘one hole for each button’ (p64) suggests a return to the ‘pre-number activities’ that were very much in evidence before the advent of the national numeracy strategy (NNS) in 1999, and which many of us thought had been laid to rest by the NNS when it shunned this approach (see Thompson, 1994).

There is no denying the fact that a very important aspect of the counting process involves the accurate matching of number names to the objects being counted; indeed it is one of Gelman and Gallistel’s (1978) famous ‘counting principles’. But it is important to ask why children should make any connection between the physical activities of laying the table or fastening their coats and the important ‘one-one’ principle involved in the mental activity of oral counting. It would seem much more likely that, just as they learn to talk by engaging in the process of talking – making errors, correcting these themselves or having them corrected for them – children will come to apply Gelman and Gallistel’s ‘one-one’ principle by engaging in the counting process itself.

Counting

From 22 to 36 months the emphasis is on getting children to create their own symbols and marks; developing their familiarity with our system of numerals; and helping them appreciate how we use counting to find out ‘how many’. From 30 to 50 months children have to be given reasons to count; come to recognise groups with one, two or three objects (technically known as ‘subitising’); and use the ordinals (first, second...) accurately. Practitioners have to introduce number labels to use outdoors for house and bus numbers. There is also a rather strange exhortation to ‘Enable children to note the ‘missing set’…’ – a phrase I have never encountered in 40 years involvement in mathematics education! The next stage (40 to 60 + months) builds up to the four early learning goals (ELGs) relevant to this section, with children progressing from counting three objects to accurately counting 10 of them; estimating and checking by counting; counting objects that cannot be moved or are irregularly arranged; recognising the numerals 1 to 5; and knowing that numbers identify how many objects are in a set.

There is obviously, and quite correctly, an
emphasis on counting, and in the following discussion the word ‘recitation’ will mean the act of saying the number words in the correct order, whereas ‘enumeration’ will mean correctly allocating one, and only one, number word to each item in a group of objects (see Threlfall, 2008). What is missing from this document are the useful activities for helping children develop these two skills; activities that are to be found in the original framework (DfEE, 1999). These include recitation activities such as:

- continuing the recitation when it is begun from 1 by someone else;
- continuing the recitation when given a specific number name to start from;
- starting the count from one given number name and stopping at another;
- correcting the recitation of a puppet, Miss Count, who miscounts; and enumeration activities such as:

- counting objects in different orders (eg, starting with the middle object);
- counting sounds in regular or irregular patterns;
- counting fleeting movements (eg, skipping, jumping, etc);
- counting objects that are out of reach;
- correcting Miss Count when she enumerates in different incorrect ways.

Interestingly, there is no mention of counting backwards – a very important skill for subtraction strategies to be developed later – until the very end of this section, where ‘counting back in ones’ is lumped together with the much more advanced skills of ‘counting backwards in twos, fives and tens’. Consequently, the backwards recitation activities, which are similar in structure to those listed above, and which were included in the original Framework (DfEE, 1999) are – sadly – missing from the EYFS (DfES, 2007) document. It is also here at the end of the section that ‘counting on’ is mentioned for the first and only time in the whole document. However, it is clear from the context that what is actually meant is simply ‘counting forward’ (see Thompson 2006 for a detailed discussion of counting on). All of this suggests that an impoverished experience of counting is being recommended in the EYFS publication.

**Calculating**

Because of the age of the children involved in the EYFS, the **Calculating** section contains much less detail. By the time they are three years old, children should appreciate that a group of things changes in quantity when something is added or taken away. Between 30 and 50 months they should be able to compare two groups, saying when they have the same number; separate a group of objects in different ways; and should experience the idea of ‘one more than’ when being read stories. In the final stage (40 to 60 + months) they should be able to find the total number of objects in two groups by counting them all, say the number that is one more than a given number; and select two groups to make a given total. They should also be able to count repeated groups of the same size (a ‘pre-multiplication’ requirement) and share objects into equal groups, counting to find how many there are in each group (a ‘pre-division’ requirement).

This means that by the end of the foundation stage the only methods children will have available for them to use in addition or subtraction situations will be the limited (and limiting) ‘count forward three times’ strategy. For example, to find the total number of items in a group of three items and a group of four items the child will have to count the first group – ‘One, two, three’ – then the second – ‘One, two, three, four’ – and finally the whole combined group – ‘One, two, three, four, five, six, seven’. Similarly, if a child has to find out how many bricks would be left if she started with seven and removed three of them, she would have to count out seven bricks – ‘One, two, three, four, five, six, seven’ – then count and remove three of them – ‘One, two, three,’ – before finally counting the remaining bricks – ‘One, two, three, four’.

What happened to the ‘counting on’, ‘counting back’ and ‘counting up’ strategies from the original Framework for reception children: strategies that had been carefully introduced through preparatory activities explored earlier in the children’s development? The **Primary framework for literacy and mathematics** (DfES, 2006: 2) informs us that:

– ‘The changes contained in the renewed Primary Framework for literacy and mathematics... are built upon research and evaluation undertaken since the late 1990s’.

As a keen follower of research into the teaching and learning of early number, I do not recall reading any such research suggesting that children will acquire the calculation skills of counting on, counting back and counting up by osmosis! The Williams report (DSCF 2008: 68) raises questions about the effectiveness of the revised Frameworks when compared with the preceding versions in terms of their respective formats; I raise similar questions about their respective contents.

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**References**


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