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Summer 1998 Volume 4 Number 2

Introducing the National Numeracy Project in an EBD School

by Jo Audus



The **M** *Mathematical*
Association

Keywords: National Numeracy Strategy, EBD

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Leicester, LE2 3BE.

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The report, *A Trend Towards Inclusion, from the Centre for Studies of Inclusive Education (CSIE)* reveals:

“that the majority of pupils with statements of Special Educational Need are now attending mainstream schools. Some 58 per cent across England. The most inclusive LEA was the London Borough of Newham with 89.2 per cent of statemented pupils in mainstream education”.

Eleanor Smith EBD School teaches in accordance with the National Curriculum and the school agrees that,

“The National Curriculum must take a prime place in a special school for EBD children because it acts as a symbol of the normal process of education. It gives to the pupil and the teacher a sense of a proper educational environment. It is a therapeutic tool which can give the environment of the special school authenticity. It has a commonality with all other schools which bridges the gap between special and mainstream education”.

The intentions of the school are to set up, as far as possible, a learning environment similar to that of a mainstream primary school, but with strategies and techniques in place that have already been proved to be successful in our schools in general. For example, higher teacher to pupil ratios, smaller class sizes, positive reward systems, circle times and behaviour modification programmes.

The Teaching and Learning of Mathematics at Eleanor Smith School

Students at Eleanor Smith spend part of the week in their mainstream schools. It is impossible to teach the whole of the National Curriculum in only part of the week, so we worked in consultation with the Borough to decide what areas of the curriculum would be offered to children, depending upon the amount of time spent at Eleanor Smith School. Our planning for the curriculum areas (especially core curriculum areas of English, Mathematics and Science) has to be clearly mapped out so that we can share it with mainstream schools and attempt to ensure as much progression and continuity for each child as possible, by working in partnership with the mainstream class teachers.

Deciding Upon the Right Scheme for Our School

We felt it was fundamental for the children to gain a good basic understanding of number and skills that would be transferable to a wide variety of mathematical learning experiences.

It was acknowledged that the style of teaching was important and that the work presented had to be fun and relevant for the children. It also needed to allow opportunities for the children to acknowledge what they were learning and the progress they were making.

We decided, upon having short ‘bursts’ of topics and revisiting them regularly rather than working on topics

for half a term each. Each topic and elements of number taught were to be changed approximately every three weeks, and taught twice within each academic year.

Why the National Numeracy Project?

Unlike most schemes I had previously seen, the National Numeracy Project appeared to be a feasible option for our school. It focuses upon improving “practical teaching strategies”, by using “detailed plans, practical guidance” and “offering out-of-school courses and in-school support for professional development”. N.N.P. (1997).

At last, here was a scheme that had been compiled by experts, working together to ensure continuity and progression, whilst improving the quality of teaching and learning in the area of mathematics, specifically in relation to number.

“as a child’s understanding increases, he becomes able to perform mentally certain operations on classes or sets, and on relations, out of which develops an understand of numbers and operations on them. The structure and behaviour of operations of number is the subject-matter of a large part of mathematics.”

Williams. E. and Shuard. H. (1982).

It also offered a means by which links with mainstream schools could be effectively developed and continuity and progression ensured in a manner that was easily understood by all.

The style of teaching suggested by the N.N.P. where whole class mathematics teaching takes place but activities are differentiated, is the same way as staff at Eleanor Smith were already working. It was excellent to see two and a half pages of guidance in the *Questions Answered* section, explaining to teachers how to use the Project and include differentiated work; plan for mixed age-range classes; how to include pupils with SENs and EAL; as well as how to include support staff in the teaching of the N.N.P.

For Eleanor Smith School this helped raise the self-esteem and morale of staff, as much of the advice on good teaching practice was already being practised at our school. For example, all our sessions are organised to include a 10-15 minute introduction, a 20-30 minute activity and a 10- 15 minute plenary. For our school this organisation is most beneficial for sharing ideas and explaining tasks, practising the skills and then discussing how they were used and what was learnt from the activ-

ity, for the children it offers immediate feedback on what they have learnt.

As most Newham schools were expected to use the N.N.P. framework and the suggestions contained in it, we felt it would be easier for our pupils to work in two schools if the classroom organisation and the objectives and contents of lessons were similar.

Analysis, Evaluation and Reflection

We began using the project at the beginning of the academic year 1997-8. We agreed that the first term until Christmas should be used for people to ‘practise’ teaching in the manner suggested and using the framework. We have attempted to allocate time by using the sessions we have available to achieve the same balance of lessons as the Numeracy Project advises for pupils studying in one institution for five days per week, for example, with a two day a week class, one session of mathematics will focus on the numeracy objectives set out in the framework, whilst the other session will be spent studying shape, space and measures. Data handling work should appear in planning for science every three weeks.

At present I feel the important issue for ensuring success is making sure that the staff feel supported and find the project useful. Therefore I have been allowing one morning non-contact time per week to be dedicated to monitoring and supporting staff in the use of the project framework.

This has taken place in a variety of ways including team teaching with other class teachers, writing lesson plans from the framework provided, helping people with their planning and obtaining more ideas and materials and collating them in a resource bank in the teachers resource room. I have not yet formally observed any staff teaching but have been present in the room in a team teaching capacity.

Staff feedback has so far been mainly positive. There have been confusions with planning and record keeping (as there would be with any new scheme of work) but people have asked for assistance in understanding, which means they must have at least looked at it. Staff are trying out ideas and materials suggested to them and have been particularly impressed with Anita Straker’s *Mental Mathematics* book. When in class I have seen evidence and have received feedback to suggest that staff are trying out new ideas. For example, I ordered enough blank playing cards for each child to have their own set

of ten cards numbered 0 - 9. I suggested to staff that the children could decorate the backs of their cards to give them more pride in them, and therefore be less likely to rip them up or lose them. The cards are useful when doing mental mathematics activities involving number. It is apparent that every child in the school now has a very proudly owned set of cards which they keep in their trays. At assemblies we have had four classes show their cards, at the request of the children who decide what work they want to show.

We have informed all mainstream teachers of our involvement in the project and they have access and copies to our planning objectives for each half term. Staff said it is definitely easier to discuss continuity and progression and even IEP targets when both schools are referring to the same document.

We now have language lists available to every member of staff, suggesting when is the most appropriate time to introduce new terms and their meanings. It is planned that these will be displayed in the classrooms (as some staff are already doing).

Perhaps the most noticeable and important discovery made during the last six weeks is how able our children are at thinking mathematically. When Anita Straker came to discuss the project at the Institute of Education she showed some graphs to illustrate how children compared when tested mentally and in written form on their mathematical ability. The graphs showed that if a child was recognised as having SENs they generally achieved better in mental mathematical tests than children without SENs did. Teaching mathematics with a more mental based approach the children at Eleanor Smith has reinforced this idea.

In my class it has been interesting to notice the reaction of the children in response to the change in teaching styles. Mathematics is usually an area that EBD children quite enjoy because it does not require much writing, so doesn't pose as much of a threat to their self-esteem as perhaps English might. It is also appealing for the children because they can use apparatus, so is similar to play. Also there is usually a fairly quick and clear response as to whether they have got something right or not. The reactions of the children have been mixed, but their experiences have all been beneficial, I feel. Children who like to answer page after page of sums have found it difficult to understand that work does not have to have a visual result. Some have found having to

think a frustrating experience, especially if they don't understand straight away. One child in my class produced hardly any work in mathematics last year and always declared he hated maths: after the change I was shocked by how good he is at thinking about mathematics and number and how quickly he picks up new ideas. He always used to be a quiet child in class who would need encouragement to talk and would get upset if he didn't know the answer. Now I have to ask him to stop calling out the answers and to let someone else have a chance at answering.

For all the children the introductory and plenary sessions have been extremely useful in their mathematical and emotional and behavioural development. They see these sessions as fun but are constantly aware of how much they have learnt. I now have children stumbling out the door to the playground at lunch time, after a heavy mathematics session, and saying "Oh Miss my brain hurts, I've been thinking so much". That tells me something is going well, especially when they smile as they say it.

We have also been encouraging the children to fill in evaluation sheets from BEAM, at the end of each session. This is very popular as it gives them ownership over their learning and they enjoy having that responsibility. They also know that we want and value their comments as to the content of a lesson, and it fits in wonderfully as part of the plenary.

Concern has been expressed as to what happens to the more and less able children in mainstream classes. Differentiation objectives need to be carefully planned so that the progress of these children is not hindered. In a class of only ten children it is feasible to set up two, three or even four different ability groups. In mainstream it is more difficult to do this with only one member of class in the room, and to ensure all the children are on task and learning appropriately.

We have only been using the project for a short while but already the positive implications of it tend to outweigh the negative.

Eleanor Smith School