

## **HOME SCHOOL KNOWLEDGE EXCHANGE PROJECT – EXPERIENCES FROM THE FIRST TWO YEARS**

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*The Home School Knowledge Exchange Project is part of the ESRC Teaching and Learning Programme. The project has three strands, of which one focuses on Numeracy in Key Stage 2. We are working with teachers in four schools, two in Cardiff and two in Bristol to develop activities which will support knowledge exchange between pupils' homes and schools. We have found parents were initially interested in learning more about the mathematics curriculum and how it is taught, while teachers were concerned to inform parents of similar issues. Over the course of the project the range of knowledge exchange has broadened and we have focused on trying to find ways to bring the pupils' home and out of school experiences into their school learning.*

### **AN OUTLINE OF THE PROJECT**

The Home School Knowledge Exchange Project is a Phase 2 Teaching and Learning Research Programme (TLRP) project funded by the ESRC. The project began work in summer 2001 and runs until December 2004.

The project is based at the University of Bristol Graduate School of Education and works in liaison with the LEAs of Bristol and Cardiff. Its overall aim is to develop new ways in which knowledge can be exchanged between home and school and to evaluate the impact of this exchange on children's attainment and learning dispositions.

The choice to work in Cardiff and Bristol has allowed the project to consider factors in the national contexts of the two cities in creating differences or similarities in the ways schools and teachers work with parents. We recognise that we are seeing a very small snapshot of practice in the two cities, and that factors connected with much more local conditions are just as important as the national context. However, this variation does allow an extra dimension to the project's work.

The project has three strands, Literacy at Key Stage 1, Numeracy at Key Stage 2 and Transfer from Key Stage 2 to 3. Each of these strands has a similar structure and this paper will focus just of the work of the Numeracy strand. In this strand we are working with 4 schools – 2 in Cardiff and 2 in Bristol. The schools were selected on the basis of achieving a balance of one each designated 'high free school meals' and one 'low free school meals' in each city. We also selected schools with a proportion of pupils of varying ethnic origins in each city. Schools were initially asked to express an interest in involvement and, as far as was possible, these schools were chosen, in preference to schools which we approached. In addition, four 'comparison schools', selected to match the project schools reasonably closely, have also been chosen. In each of the project schools one Year 4 class was chosen (by the school) to

work on the project. This class has now moved into Year 5 and in some cases the situation has become more complex as classes have been split into different groupings and teachers have changed. In all cases we are now working with a different class teacher from last year and in some cases we have worked with several teachers in one school.

In the summer of 2001 the project appointed three full time researchers and three 0.6 teacher researchers. The researchers work across all three strands, while the teacher researchers work just in one strand, either Literacy, Numeracy or Transfer. The researchers have been engaged in gathering data from the project and comparison schools, while the teacher researchers have been initiating and supporting activities designed to promote knowledge exchange in the project schools – these activities will be described more fully later. In comparison schools data on pupils' attainment and dispositions has been collected but no activities carried out.

The data being collected consists of standardized test data (using PIPS from the University of Durham), data on pupils' learning dispositions (using versions of the Effective Lifelong Learning Inventory developed in the Graduate School of Education by Ruth Deakin Crick and others (Deakin Crick et al., 2003)), interviews with teachers and more detailed data on a sample of pupils from the project classes. This consists of interviews with families, videos made by many of the children and collection of other relevant materials. In each strand a number of children (approximately 4-6) have been identified for 'case studies'. Each of these children is being observed in school and interviewed informally with their families at home in an attempt to build up a richer picture of how they learn and the role of their family and other out of school factors in their school learning.

## **BACKGROUND TO THE PROJECT**

In England and Wales there is a long history, particularly in the area of reading, of parents supporting their children's learning, with mixed reports of its effectiveness (Jones and Rowley, 1990; Toomey, 1993; Macleod, 1996). In numeracy there is a less strong background of work involving pupils' out of school learning, although the IMPACT project (Merttens, 1996) and the work of the Leverhulme Numeracy Research Programme (e.g. see Baker, 2001) are both examples of projects in this area. The IMPACT programme sought to provide activities for parents and children to work on together at home to develop their mathematics skills. The Leverhulme work looks at underachievement in mathematics through a perspective of the subject as social. In addition SHARE (CEDC, 1998) is a programme developed as a 'family learning project' to involve parents with their children's learning. This has been used in some Cardiff schools.

All of these previous projects have been considered and drawn on in the thinking behind the Home School Knowledge Exchange project. We have been concerned to try to find ways of involving parents which avoid the concerns raised by Dyson and Robson:

The model of parent-child relations and of family values embedded in the parental involvement movement may well operate as a form of cultural imperialism, devaluing the practices and values of families who may already be somewhat marginalized (Dyson and Robson, 1999, p15)

We have tried, with varying success, to recognise the '*funds of knowledge*' (Moll and Greenberg, 1992; Moll et al., 1993) possessed by communities and families so as to draw on and utilise the skills, information and strategies which families have available to maximise the life chances of themselves and their children. This has meant that we have tried to involve parents and families in the direction of the project, although we recognise that to some extent we are inevitably seen as 'agents' of the school system and cannot avoid that.

## **NUMERACY ACTIVITIES**

In the Key Stage 2 numeracy strand of the project a range of activities have been going on in the four project schools.

The first step was to find out what was already happening in each school and what both teachers and parents would like to see happening. This information was collected by a combination of questionnaires and interviews and in each school a starting point was found for a series of activities. A common pattern was that parents wanted to know more about the National Curriculum in mathematics and about how topics are taught to their children. Teachers, on the other hand, wanted parents to know how mathematics is taught and what methods of calculation are used. Some teachers wanted to know more about pupils' activities at home.

The activities which seemed likely to help meet these requirements were those which shared information between home and school. So, in two schools regular newsletters were produced which pupils took home. These contained information about activities the class were involved in, not just mathematics. Another similar activity was the use of a Home-school book. This is an attractive, personalised A5 ring binder in which each pupil can keep regular weekly information sheets which explain the mathematics currently being taught and offer suggestions of related activities that parents and children can do together at home.

One 'find' for many schools was the range of materials available from the DfES to inform parents about the school curriculum and teaching methods. Many of these are available in a wide range of community languages. Supplies were ordered for schools and distributed by teachers.

In some schools, parents have been invited into school to take part in various activities. Some parents have taken part in sessions in which they have learned about Numeracy Strategy methods, some have joined their children in lessons so they can understand how they are being taught and some have come to 'Maths Workshop' events. In one school, language has been a particular focus, because a wide range of languages is spoken by parents. Here the activities have concentrated on finding ways to ensure communication is effective, using translated materials and interpreters. In

this school parents joined their children in a lesson, as mentioned above, so that their children could act as interpreters. A pupil profile sheet has been used by some schools as a way for parents to share information about their children. Teachers have found this a valuable way of learning more about the children's activities and interests out of school.

Finally, over the summer some schools have distributed a brief 'diary' to accompany a disposable camera. Children have been asked to use these over the summer holiday to record some of the mathematical activities they take part in. The cameras were returned to school and the photos developed. Children then worked with the teacher researcher to produce displays showing some of their mathematical activities.

In the second year of the project the activities described above were adapted and new activities developed to reflect the interests of the new teachers of the classes as they moved into year 5. We were concerned to broaden the range of activities to focus more strongly on the flow of information from home to school as the emphasis seemed to have been on information moving from school to home. New activities have enabled us to do this. Children brought into school board games they play at home, to play in the classroom, and a number of mathematical games were sent home from school. A display of the photographs the children took of mathematical activities outside school was produced, with written commentaries from the children, in the main school thoroughfare. Project Open Days were held, as well as the teacher researcher attending the normal school Parents' Evenings, to give the parents the opportunity to ask questions and exchange information about mathematical learning both at home and in school. Some parents, for whom English is a second language, were visited at home with an interpreter, and they were invited to come into the school for a special meeting which the interpreter attended. Some of these parents subsequently joined their children's maths lesson and made and played games in school, which they then took home. Other new activities include videos being made of the children explaining mathematical methods, which will be shown to parents, and an after school maths club was set up, in which parents were invited to participate.

### **SOME FINDINGS AND ISSUES FOR FURTHER EXPLORATION**

One early finding is that the diversity of parents needs, even within one class of children, means that activities will often only work for a few. We cannot therefore judge success solely by breadth of take up of an idea – even if only a few take part in a particular activity it may well be an important experience for them and make a difference to their engagement with their children's learning. We have a range of activities taking place in each class working on the project with parents and children involved at different levels in them. Teachers have valued the different interactions they have had with some parents through these, and the fact that different parents are involved at different times has been an advantage.

Another key factor is the involvement of the teacher and the importance of these activities being relevant to them and seen as valuable by them. We have needed to provide support for teachers in producing materials, but it has been crucial that teachers have had ownership of the activities if they are really to value their involvement in this project. Schools and classrooms are busy places and activities need to have an immediate relevance if they are going to carry on beyond the life of the project. The place of the project within the school is also important for the same reason – the idea of knowledge exchange with homes needs to be embraced by a wider school community so that it has a place in schools' policies and practices. This is very difficult to achieve in a world of competing priorities.

The final year of the project, starting in September 2003, is one in which we wish to examine sustainability of some of the ideas which schools have been working with. We are exploring ways of doing this which will enable schools to go on developing activities, with support, while also examining what has become 'embedded' in practice. One key aspect of this phase of the project is going to be strengthening work with schools and teachers so that activities become a part of the life of the school. The teachers we have worked with this year have taken part in collaborative sessions which have shared experiences between schools; they are keen to support this work during next year. An important part of this will be to link together the three strands of the project. While we have clearly divided the project, for practical reasons, into the strands of literacy, numeracy and transfer, there has been much overlap between these three parts. Within the project team much exchange of experiences has happened throughout the project, but we also want to make this more explicit in our work with schools as the project comes to a close.

We recognise that the issue we are exploring is a very complex one and that immediately quantifiable data in term of higher levels of achievement in standardised tests may not be forthcoming in the short term. We have been looking at pupils' attitudes to their learning and expect that data on this issue will provide some useful insights. The case studies of a range of pupils will help us see how individuals have been affected by the activities generated by the project. We feel that the variety of types of data collection being undertaken will enable the project to create rich 'stories' about the experiences of pupils, parents and teachers involved in the project and that these will enable us, in the final reports from the project, to offer conclusions about what is effective in supporting learning through sharing knowledge between homes and schools.

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