NERF Bulletin
Evidence for Teaching and Learning

Issue 5 - Spring 2006

In this issue:

Plus

NERF
National Educational Research Forum

Comment

As usual, teaching and learning are at the heart of this Spring 2006 issue of the *Bulletin*. From problem solving in primary maths to the alternative curriculum for fourteen year olds, we've looked for good evidence about what works and we hope you enjoy reading about it and that it provides food for thought. In the light of your positive feedback about our experiments with case studies we've included more of these too.

We're also looking hard for funding to sustain and develop the *Bulletin* in the long term. Feedback from you the reader always helps us make the case. Send us your comments and ideas, and let us know your views about whether subscriptions would work. And if you know of anyone who is looking for a good sponsorship opportunity, please contact us at: ***info@nerf-uk.org***

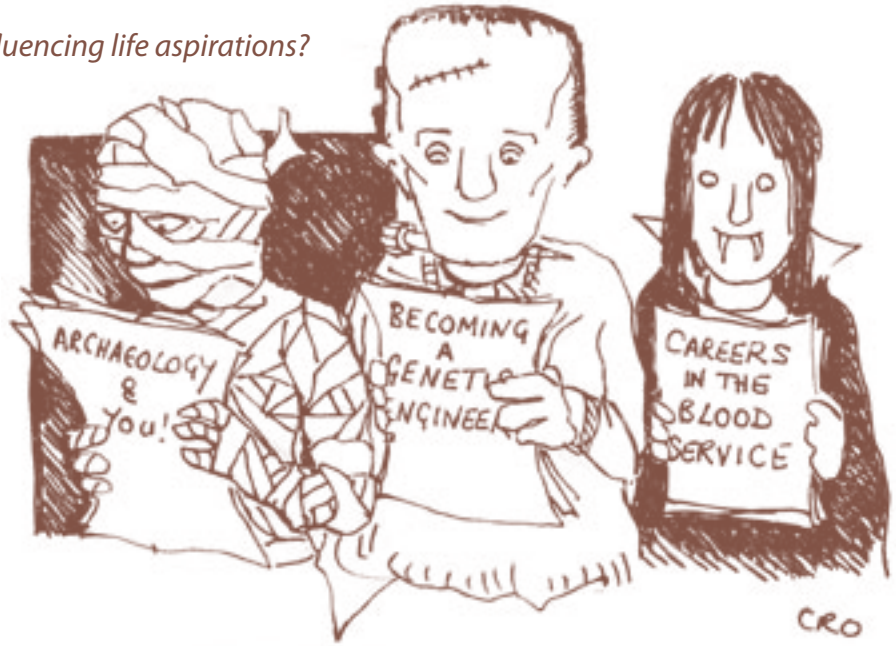
2006 and still stereotyping?

Among the other topics in this issue we have used a range of research reports to take a good look at what's happening to the 90,000 (and rising) young people who are still at school, but also taking vocational options in further education colleges. The good news is that it really seems to be making a difference in terms of self-esteem and motivation, and some very productive partnerships between schools and colleges are flourishing. Progression is improving too.

One thing that struck us was the high proportion (40%) of students who planned to further their studies *in the same subject area* as they were already studying – and who planned to get jobs in the same occupation areas (20%). A recent Equal Opportunities Commission report, based on original, recent research, has found that the UK workforce is still very highly segregated. Men make up just 2% of the childcare workforce, for example, 1% of construction workers are female and only 22 girls in the whole of England enrolled in plumbing apprenticeships in 2003/4. Women are still working mostly in lower paid areas – what the EOC calls the 5Cs: cleaning, catering, caring, cashiering and clerical work.

In Issue 3 we reported on research about the importance of good quality careers education and guidance and the fact that young people said they would have liked to have this earlier than KS4. We think the EOC findings about workforce segregation reinforce the need for enhancing career expectations much earlier on. There is certainly support for change among young people themselves. The EOC found that 80% of girls and 55% of boys were interested in learning to do a 'non-traditional' job and most of them said they would like to try work normally done by the opposite sex before making a job choice.

How are you influencing life aspirations?



How can you use some of the evidence in this issue?

There are plenty of ideas to be gained from this issue. Here are a few to start you off:

- take a look at the article on page 11. Researchers found strong evidence that putting students of mixed achievement levels into the same group was better than having groups with the same achievement level – provided, of course, that effective group processes are in place.
- ICT can support young children's learning and development, but it won't just happen by itself. There's evidence on page 5 of what helps – the guidance teachers can give and ways of integrating ICT into the curriculum, which you could try.
- 'personalising' learning may be harder than it sounds. A first step, according to the article on page 12, is to find out as much as you can about your students' learning from the students themselves. You'll find a handy website link on this page too, which connects you with some of the tools you might find useful when seeking student views.
- if you look at page 14 you'll get a sense of the beneficial results of working together closely and openly – observing colleagues, or being observed by them and discussing each other's classroom practice and students' responses. Are there opportunities in your day-to-day work for this kind of collaboration? How about collaborative lesson planning for a start?

Parental involvement

Parental involvement in their children's education makes a big difference to their academic progress. A major review of research on parental involvement found that the impact of parents on pupil achievement was, in fact, far greater than that of schools in the primary years, and was still an important factor at secondary level. The most crucial factor was the extent and quality of parental engagement with their children at home. The review found that parental involvement acted out within school has little or no impact on achievement, although this is not to say it has no value in other areas, such as home-school communication. So should there be a change of focus in home-school liaison policies?

The importance of home parenting in a child's educational development

The reviewers found that the most important element of parental involvement is the relationships parents have with their children – the interest they show and the conversations they have. For younger children, parenting provides the environment in which they can develop school related skills, as well as the psychological qualities of motivation and self-worth. For older children, above all, it is the motivation to achieve which parental involvement can encourage.

The effects of family circumstances

A recent survey in Scotland showed that a large number of children experience a lack of parental support at home. Although the majority of parents (56%) said they spent at least one hour a week reading with their children, with 32% doing three hours or more a week, 35% of parents spent less than an hour a week reading with their children. Not surprisingly, the review of research into parental involvement found that lower levels of parental support were associated with lower socio-economic factors, such as material deprivation.

An encouraging finding from the review, however, was that socio-economic factors in themselves have less impact on student achievement than levels of parental involvement. And, whereas schools can do little to change the former, there are practical steps they can take to positively influence the latter. So what can schools do to encourage positive child-parent interaction in the home? In Issue 3 we presented an example of how parents were encouraged to talk with their children through interactive homework activities. Here we describe another approach. This involved parents reading and talking together.

Case study: Co-opting parental support on the Fast Start reading programme

One small-scale case study of a US primary school found that when the school took a systematic approach to getting parents to support their children's reading at home, the children made measurable progress. The researchers ran a sixty-minute training session for parents and their children. They demonstrated a sequence of activities, starting with the parent reading to, and with the child, until the child felt confident enough to read independently, and finishing with consolidating activities such as word sorts and sentence building using word cards. Parents spent on average eleven minutes each day reading with their child.

The programme had a marked success with lower ability pupils, some of whom only knew about half of the letters of the alphabet and no words at the start of the programme. Just as important, however, were the parents' positive views of the experience. The parents felt that the programme had helped their child get a good start in reading, and they also commented on the enjoyment they and their child had got out of it. By providing parents with a clearer idea of how to help their children, the programme had not only secured academic progress for the children, but had also engendered positive attitudes among parents to school work.

Although a number of pupils benefited from the approach, not all did so. For example, one child, who was already an independent reader, rejected the idea of his parents reading with him altogether. This sounds a note of caution for teachers that any single approach to involving parents will need adapting to individual circumstances.

How do we know this?

An interpretative review of around 150 research studies published between 1990 and 2003 that examined the impact of naturally occurring parental involvement and interventions designed to enhance levels of parental involvement.

Desforges, C. and Abouchaar, A. (2003) ***The impact of parental involvement, parental support and family education on pupils achievement and adjustment*** London: DfES RR 433 [Online] Available at: ***http://www.dfes.gov.uk/research/data/uploadfiles/RR433.pdf***

An evaluation of a Scottish advertising campaign aimed at encouraging parents to read more with their children based on 400 interviews with parents.

Market Research UK (2005) ***Home reading – 2004 Reading Together post-campaign evaluation.*** Edinburgh: Scottish Executive

An evaluation of the effectiveness of a home reading programme using letter/word identification tests that involved thirty US primary children and their parents. Rasinski, T. & Stevenson, B. (2005) ***The effects of Fast Start reading: a fluency-based home involvement reading program, on the reading achievement of beginning readers*** Reading Psychology, 26, pp.109-125

Details of the Fast Start reading programme are available in: Padak, N., & Rasinski, T. (2005) ***Fast Start for Early Readers: A research-based send-home literacy program that ensures reading success for every child*** New York: Scholastic

Problem solving

How can we help children tackle division effectively?

Many pupils find division the hardest of the four operations in arithmetic. Why does division cause them so much difficulty and does it help to teach a standard algorithm? Two studies conducted by the same researcher five years apart (before and after the introduction of the Numeracy Strategy), shed some light on this perennial problem. In both studies, pupils were given two division tests and were asked to record how they worked out their answers to give the researcher a window into their thinking. In between the two tests, the pupils were taught division using standard algorithms. What did the researcher discover?

When the researcher compared the pupils' two test scores, she found that only about half the pupils had improved at division and many showed no change or had even deteriorated:

- 52% answered more questions correctly;
- 19% answered the same number of questions correctly; and
- 29% answered fewer questions correctly.

The pupils used standard algorithms the most in both tests, but the most effective methods used by the pupils were high level chunking and mental calculations. Some methods, such as low level chunking were rarely successful.

Why did many pupils make mistakes?

Many of the errors the pupils made were due to mistakes with applying the standard algorithm. The researcher suggested that a reason why using the standard algorithm was an unsuccessful method was that it seemed to replace the intuitive procedures the pupils used rather than enhance them. When pupils used the standard algorithm, they recorded the answers even if they were bizarre. She recommended that when teachers introduced written methods of division, they should focus on developing pupils' informal methods to enable them to improve without losing their understanding.

And what helped them improve?

The National Numeracy Strategy explicitly encourages using different informal methods to increase pupils' understanding of what they are doing, as well as teaching at least one standard written method of calculation for each operation. So what difference did using the methods advocated by the Numeracy Strategy make? In the second study, the researcher found that the pupils made more use of informal strategies than the pupils in the earlier study and their scores were 5% higher overall. The researcher suggested it was the informal strategies that had led to the biggest improvements – pupils were more successful if they had been taught to record their informal strategies in a structured way.

Did girls and boys tackle division problems in the same way?

In the first study, the girls were more successful than the boys, although they tended to use lower level strategies (such as repeated addition and tallying) more often than boys. Boys tended to use higher-level strategies, including mental methods of calculation, but they were also more likely to guess or omit the answer. In the second study, the boys performed better overall than the girls. The researcher suggested this may have been because they used informal methods most and with considerable success. Another reason may have been the Numeracy Strategy's strong emphasis on mental work – the first study revealed that boys used the mental strategy more frequently and more competently than girls. What helped the girls the most was the chunking method. This was probably because the girls liked to organise their work and this gave them an efficient and understandable method of doing so.

Where do we go from here?

According to the evidence from these studies, we can enhance pupils' competence in division by helping them to structure how they record their informal methods and encouraging them to build on their mental methods, rather than rely solely on using a taught algorithm.

Jargon Buster

Algorithm *– a standardised written procedure for solving a numerical problem.*

High level chunking *– a method for decomposing numbers in efficient ways using known relationships e.g. in the sum 432 ÷ 15, 432 can be 'chunked' as 300, 60, 60 and 12 to make division by 15 easier.*

Low level chunking *– a method for decomposing numbers in less efficient ways e.g. in the sum 432 ÷ 15 repeatedly subtracting 60.*

How do we know this?

275 Y5 pupils in ten schools completed two tests containing ten division problems, five months apart. The tests contained five 'context' problems (e.g 96 flowers are bundled in bunches of 6. How many bunches can be made?) and five 'bare' (e.g. 98 ÷ 7 = ?) The second test contained the same problems as the first, but the context and bare questions were interchanged to reduce the likelihood of the pupils remembering the problems from the previous test. Anghileri, J. (2001) ***Development of division strategies for Year 5 pupils in ten English schools*** British Educational Research Journal 27 (1) pp.85-103

The researcher repeated her study five years later with 308 pupils from nine of the original schools and another school that closely matched the tenth. Anghileri, J. (2005) ***'Some impacts of the National Numeracy Strategy on students' written calculation methods for division after five years implementation',*** in Hewitt, D. & Noyes, A. (Eds) Proceedings of the sixth British Congress of Mathematics Education held at the University of Warwick [Online] Available at: ***http://www.bsrlm.org.uk/IPs/ip25-1/BSRLM-IP-25-1-03.pdf***

Is it a useful tool for early years?

Some practitioners believe strongly that using ICT with young children is inappropriate. They argue that it deprives them of valuable play activities, limits the development of their social skills, interferes with their cognitive development, and can be dangerous for their health. Are there any grounds for such a negative view? A recent review of 80 or so studies from around the world found no clear evidence to support these claims. In fact, it found evidence of the reverse – that, when used well, ICT can support young children's learning and development.

Of course, as we know, this won't just happen by itself. In our first issue we reported research evidence showing that the effectiveness of ICT in schools depends on how teachers use it: how they use the available resources, the quality of the guidance they give their pupils and the extent to which they integrate ICT into their teaching. This is just as true for education in the early years, even though it gives unique emphasis to practices that focus on, for example, children's social and emotional development.

Providing opportunities for collaboration

A number of the studies reported in the review showed ways ICT has been used to aid collaboration and cooperation between children. Examples included pairs of children using walkie-talkies in an indoor/outdoor game and a group of children using a PC and printer in an imaginative role-play about being "in the office". One pre-school made their computer a "social centre". Three rules were introduced to encourage helping and sharing behaviour at the computer:

- "find a friend" – two or more children had to play at the computer at all times;
- "help a friend" – children were expected to help the child with the mouse by pointing, and providing directions and information;
- "share the mouse" – children had to take turns with using the mouse.

But it was important that teachers helped the children to follow the rules and integrated the computer-based activities with the curriculum topic areas they were focusing on at the time – 'mouse wars' occurred when they didn't!

Assisting children's cognitive development

The review also found evidence that computers can help young children develop their mathematical ideas, provided teachers choose and use these tools in ways that scaffold and extend their thinking – for example, through using a simplified version of Logo to introduce children to turtle geometry. Several studies have shown ways that ICT can support learning for children with special learning needs, or from culturally or linguistically diverse backgrounds. For example, one study found that children learned new words from listening to a story read to them by the computer. Although the children did not gain as much from listening to the computer read a story as they did from listening to their teacher, the evidence does suggest that teachers can use a computer to target and provide extra help to those children who are struggling at specific language skills.

Sharing and reflecting on children's learning and development

An exciting development noted by the review is the way digital cameras, video and computers etc have been used to document, share, and reflect on children's learning. When used in this way, ICT helps teachers children and their families recognise, celebrate, and support the child's learning, both in the early childhood setting, and at home. ICT has also helped teachers to share and discuss their emerging ICT practices with staff from other early years centres.

What about health and safety risks?

The hazards of extended computer use for adults (such as repetitive strain injury) are well known. Few studies have investigated the hazards of computer use for young children, but those that have, note some potential risks, such as children having to tilt their heads up or slouching to view the screen. They recommend that part of children's learning with ICT should include how to avoid the potential risks and manage their own ICT use responsibly – for example, by sitting on chairs of the right height and limiting the amount of time they spend working at a computer.

Jargon Buster

***ICT** includes anything that allows us to get information or communicate with each other using electronic or digital equipment, such as computers, digital and video cameras, the Internet, telecommunication tools, programmable toys and electronic musical instruments.*

How do we know this?

An interpretative review of ICT studies which explored children's experiences of ICT in early childhood education settings – the effects of using ICT (both positive and negative), investigations of children's behaviour and their interactions around computers, and case studies of ICT used innovatively in early childhood settings. Most of the studies focused on computer use. Bolstad, R. (2004) ***The role and potential of ICT in early childhood education: A review of New Zealand and international literature.*** Report prepared for the Ministry of Education by the New Zealand Council for Educational Research [Online] Available at: ***http://www.minedu.govt.nz/web/downloadable/dl10074_v1/ictinecefinal.pdf***

A study that used pre-test, post-test data to compare the vocabulary learning of five and six year olds from listening to a story read to them by a teacher and by a computer. Segers, E., Takke, L., & Verhoeven, L. (2004) ***Teacher-mediated versus computer-mediated storybook reading to children in native and multicultural kindergarten classrooms.*** School Effectiveness and School Improvement 15 (2) pp.215-236

Modern Foreign Languages

Evidence that languages benefit the whole school

A recent OFSTED survey has shown that pupils in schools which require them to learn a foreign language achieved much better than national figures for schools where languages are optional. The survey looked at the characteristics of those schools in deprived areas and found that the survival of foreign language learning depended very much on the commitment of school leaders. The survey showed that 92% of students in the 13 schools took a foreign language in Year 10, because there was a clear expectation they do so. How fragile this can be was illustrated by one school where this figure dropped to 40% when it achieved specialist status in another subject area. The message from the report is clear – schools that are committed to foreign languages for all, can succeed.

Following the decision to remove MFL as a compulsory KS4 subject, the government is now concentrating much effort on expanding foreign language teaching in primary schools. Another OFSTED team took a look at how we are progressing with this.

They found that nearly half of all primary schools in the pathfinder project in which nineteen local authorities are participating were providing modern language lessons to their pupils. The government's eventual aim is for all English primary schools to offer foreign languages by 2010. But how can this happen in the present situation of apparent teacher shortages in foreign languages and fewer students opting to study languages in secondary school? Training is part of the answer. Many teachers receive coaching by specialists, who also model good practice. In OFSTED's judgement, teaching in seven out of ten of the Pathfinder schools is good or better. Classroom practitioners also seem to teach to their strengths, focussing on listening and speaking skills.

Some primary schools have taken the opportunity to be imaginative about what language learning means. In one school, for example, the teacher used a Harry Potter novel in German, French and Spanish to develop broader awareness of foreign languages, and to develop children's skills in deducing the meaning of words based on their existing knowledge.

Ofsted (2005) ***Implementing languages entitlement in primary schools*** London: Ofsted (HMI 2476) [Online] Available at: ***www.ofsted.gov.uk***

Ofsted (2005) ***'You don't know at the time how useful they'll be...': Implementing modern foreign languages entitlement at Key Stage 4*** London: Ofsted (HMI 2481) [Online] Available at: ***www.ofsted.gov.uk***

Talking ourselves out of it

In this country, it seems, we call anyone belonging to the small group who succeed in learning Spanish or Dutch, say, as 'having a gift for languages'. Why is it then that much larger proportions of people in foreign countries become proficient in English? Is it because other nations have a greater 'gift for languages'? One study has suggested that we can actually talk ourselves into not being able to learn a language. The researcher surveyed 594 students aged 16-19 and interviewed 28 of them to find out their attitudes to language learning. She found important differences in how groups of students viewed the reasons behind their perceived success, or lack of it, in French. At age 16, the highest achievers in foreign languages, and those choosing to continue language study post-16, considered linguistic ability important, but also put their success down to effort and effective learning strategies. Those who had done less well in French, and those giving it up after GCSE, were more likely to think that perceived 'failure' was due to a lack of ability, or because they were given language tasks that were too difficult. They were less likely to consider that they could improve their performance by adopting different approaches to learning. The researcher recommended that teachers encourage learners to explore the causal links between their learning strategies and their progress in foreign languages.

Graham, S. (2004) ***Giving up on modern foreign languages? Students' perceptions of learning French*** The Modern Language Journal 88 (2) pp. 171-191

Inside the black box of language learning

In a Dutch study, 105 Year 8 students took part in training sessions designed to accelerate their acquisition of English vocabulary. Words in English appeared on a computer screen and students had to decide which of two possible Dutch translations was correct. As students repeated the exercise they were given less time to select an answer. The researchers found that, although students were able to recognise familiar words more quickly as a result of the training, the benefits did not go beyond that. The students' overall reading speed or higher-order reading comprehension did not improve.

Fukkink, R. et al. (2005) ***Does training in second-language word recognition skills affect reading comprehension? An experimental study*** The Modern Language Journal 89 (1) pp. 54-75.

Developing reasoning

How can we develop students' investigative skills?

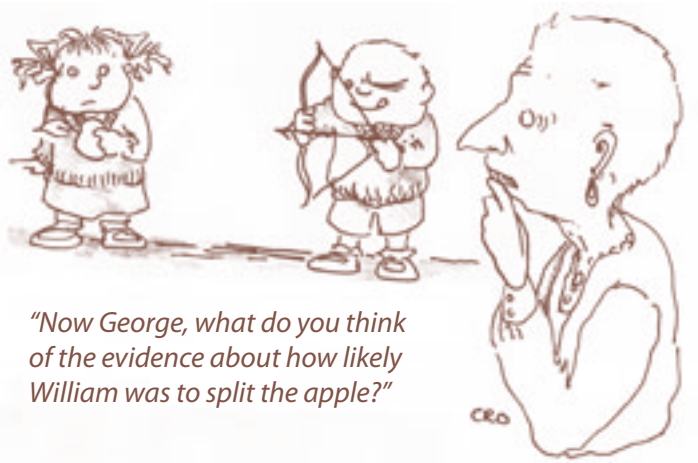
Rote learning, rote writing... we get what we teach. For example, according to evidence cited in a recent study, if we're not careful, students rely on their teachers' and textbooks' interpretation of historical events rather than work from different documents to make their own interpretation of an issue. One reason for this may be because some textbooks present history as a single view of what happened and as a list of events, which may leave students unaware that research involves particular ways of thinking and problem solving. Also, they are not as skilled as expert historians at evaluating and interpreting fragmentary and contradictory sources of evidence. But it doesn't have to be like this. Although we couldn't find any large-scale studies we have found two carefully conducted empirical case studies that show how students can learn to use the same strategies used by experts.

Helping students to improve their reasoning and writing skills

One study investigated the impact of a training programme delivered jointly by a history and English teacher that was designed to help students to reason and present their arguments. The history teacher created six sets of documents for a series of history units. Each set included one textbook source and two primary sources (for example, newspaper articles from the time) that gave conflicting points of view or conflicting information about the topic. The students were trained to reason by, for example:

- taking part in a mock trial based on an historical event to help them understand how different interpretations of an event could lead to conflicting historical accounts;
- reading a textbook version plus first hand reports of the event; and
- the teacher modelling how she generated notes from the various sources, using a set of organising questions (such as whether an event was described differently in different documents) as a guide.

The teacher also described and modelled how historians use important clues about a source (such as the author's purpose) to interpret its usefulness and how they compare details in different sources, looking for inconsistencies etc. Gradually, the history teacher helped the students learn to use the historical reasoning strategy themselves. She did this by providing several days of guided instruction whilst the students first worked in groups, then on their own, to apply the strategy to other sets of documents.



"Now George, what do you think of the evidence about how likely William was to split the apple?"

Meanwhile, the students also learned to write argumentative essays during English lessons. The English teacher used the same process of modelling, followed by guided instruction whilst the students worked in groups, then on their own. The students were also given a writing framework that structured essays into five sections, whilst prompting them to generate and organise their ideas and consider both sides of an argument.

After just a few weeks of training, the students were writing longer essays, which were historically more accurate and contained more arguments.

Developing students' investigative skills through mystery games

In another study, the teacher devised two mystery games, one of which made use of ICT. The students took on the roles of history detectives investigating the disappearance of the Princes in the Tower in 1483 and the suspected murder of Sam Whitehouse in Warley Woods in 1822. For the first mystery, the students worked from clues printed on cards. For the second, they used the computer with the clues hyperlinked together in MS Word.

Both the card and electronic versions of the investigations were effective at developing the students' historical understanding, whilst the hyperlinked version particularly helped the students to make links between different pieces of information. What's more, the students enjoyed working in this new way:

"I really enjoyed a lot of it, the best thing was hypothesising, thinking for myself".

How do we know this?

A comparison of essays written by a group of 70 mixed-ability students aged 13-14 years after they had received 10-12 days training in historical reasoning and argumentative writing with a matched control group that did not receive the training.

De La Paz, S. (2005) ***Effects of historical reasoning instruction and writing strategy mastery in culturally and academically diverse middle school classrooms.*** Journal of Educational Psychology 97 (2) pp.139-156 [Online] Available at: ***http://www.apa.org/journals/supplemental/edu972139/edu972139_supp.pdf***

A case study of a teacher who used ICT linked to literacy within the history curriculum with a class of 11-12 year olds.

Nichol, J., Watson, K., & Waites, G. (2003) ***Rhetoric and reality: using ICT to enhance pupil learning – Harry Potter and the Warley Woods Mystery – case study 2.*** British Journal of Educational Technology 34 (2) p.201-213. Details of the mysteries are available at: ***www.ex.ac.uk/historyresource***

One foot in school, the other in college

Is it making a difference for the 90,000 14-16 year olds involved?

In the last *Bulletin* we featured evidence from a research review about the strategies which helped young people benefit from vocational learning in general. In this issue, as promised, we focus on the Increased Flexibility for 14-16 Year Olds Programme (IFP) in which over 90,000 school students are now involved. Naturally, the DfES, the schools and the colleges want to know whether the programme is working. Especially as the 2005 White Paper promised a new Level 1 diploma and "more choice of places to study, mixing school, college and workplace". So are students enjoying their education and learning more? What are they studying? Are more students staying on in education? What about the colleges? How have they coped with their youthful new recruits? And how are colleges and schools working together?

IFP enables FE colleges to form partnerships with schools and other agencies so that school students can study at a college or with a training provider for one or two days a week. There are now around 300 partnerships between further education colleges, schools, training providers and others. About 2,000 schools are involved and the fourth cohort of students began this year. Typically, students study off-site at a college, or training provider, for one or two days a week throughout KS4. A national evaluation of the programme as a whole, a national college survey and several regional college research networks have been investigating the questions we posed above. They can't deliver all the answers, but some clear patterns are starting to emerge.

The benefits of the Increased Flexibility Programme

The national evaluation found that generally students had benefited from accessing a broader curriculum. The majority of the first cohort who took new GCSEs and GNVQs attained their qualifications (91% and 80% respectively), gaining higher point scores than would have been expected given their prior attainment and background. Most students were more positive about their schools than they had been and 80% of the students from the first cohort of IFP had continued into further education or training post-16.

The evaluation also found that:

- students had developed their social skills and their confidence in their employability skills, including inter-personal, communication and problem-solving skills;
- around half the students said the IFP course had helped them decide what to do in the future, whilst 40% planned to further their studies in the same subject area and 20% planned to get jobs in the same occupation areas; and
- most of the students who were undertaking a course post-16 were pursuing a qualification that was at a higher level than the level of the course they had undertaken through IFP.

Many of the schools and colleges had developed their criteria and processes for identifying students to participate and most partners had increased the amount of information about the students, which they shared before and during the course. Collaboration was also evident at classroom level. The survey found that in the majority of schools (62%) a member of staff accompanied students to their course, often supporting the tutor with classroom management, observation or individual student support.

Challenges faced by schools and colleges

42% of schools had problems with timetabling, largely because of the inflexibility in the days and times of the courses students attended. Other challenges identified by the schools and colleges concerned the management of the programme, resources and selecting students. About two thirds of lead partners and more than half the schools had had to subsidise the IFP. Most schools and about half the colleges and training providers also found time problematic. They needed more time to keep in touch with partners and, for schools, to monitor student welfare.

The view from the colleges

So that's the broad picture, but it's not the only source of evidence about the IFP. Another country-wide study looked at the IFP from the colleges' perspectives. You'll have to read the full report for all the details, but here are some highlights.

Subjects and patterns of study

The rate of growth in pre-16 provision in colleges has been huge in the last three years. The number of nationally recognised qualification aims studied went up by 144%. Just three popular vocational areas account for over half of all the qualification aims: engineering, construction and hairdressing and beauty therapy. Most students spend one day a week or less in college. As it has grown, the student profile has broadened in terms of behaviour, engagement and academic level. Many schools continued to target disaffected or poorly performing students, but colleges reported over half of their partner schools as offering the provision to all pupils.

College benefits and concerns

Colleges saw the major benefits to be:

- improved relations with local schools (97%);
- fulfilling the college's social mission (72%);
- helping improve the retention and achievement of those who subsequently enrol (69%); and
- improving college recruitment (63%).

Like the evaluation, the study identified major concerns about funding and warned that funding levels could put the whole programme at risk.

The view from the regions

Practitioners in the college sector have been busy collecting information about the IFP too. In the East Midlands, West Midlands, and London and the South East, networks of FE practitioners have been investigating college school partnerships on a regional basis, identifying trends and highlighting good practice. These regional findings are broadly in line with those of the two national reports.

How have colleges adapted to the new intakes?

Responses from colleges reported in one or more of the studies revealed that:

- many colleges had trained teams of support workers and experienced teachers dedicated for this work, although there was heavy reliance on 14-16 college coordinators;
- colleges used mixed delivery methods – in-fill (where students joined existing courses) and separate groups for 14-16s; and
- college staff have revised activities and resources designed for 16+ learners to accommodate younger students.

What challenges have they faced?

Funding was a major issue in all the regional studies. For example, one study noted that colleges found it hard to "invest in decisions to create a 14-16 centre, or put more specialist resources into vocational areas such as engineering or construction" because of the short-term nature of the funding available.

Some learners believed they were on college programmes because they were 'failures' or 'rejects', although they enjoyed college nevertheless. Colleges reported stressing the importance of interviewing, selecting, and inducting students. Once the students were established on courses, successful approaches included holding ceremonies to celebrate and reward their achievements.

Colleges have encountered problems with schools recalling students for exam or school work, especially towards the end of the second year, but were becoming more proactive about timetabling and scheduling programmes in conjunction with schools.

Colleges have also found supporting the literacy and numeracy needs of their younger learners and managing their behaviour problematic. But using ICT to support the students' needs has helped, as has staff development in behaviour management together with a "raft of policies and procedures developed in conjunction with schools".

What have been the benefits?

Amongst the benefits reported by the regional networks were:

- students were happy attending college – they appreciated the more adult environment and liked working with students from other schools;
- students gained greater independence, self-esteem and self-management skills;
- healthy student progression rates – students were returning for similar or different programmes and generally got off to a "flying start"; and
- a deep sense of moral purpose amongst staff – examples were cited of where once critical staff "are now enthusiastic and enjoy student success".

Gender health warning

Girls and boys entering training and work are still largely stereotyped, according to a recent review of research by the EOC. Only 2% of the childcare workforce are men and only 1% of construction workers are female. Only 22 girls in England took up plumbing apprenticeships in 2003/04. Yet most of the girls and boys in the research said they would like to have more information about non-traditional jobs. There was little evidence about gender in the studies of the IFP we looked at, but clearly there is a strong need for good guidance at fourteen because so many of the students, according to our studies, go on to train or work in the occupational area in which they start while still at school. (See Viewpoint, Page 2)

How do we know this?

Golden, S., O'Donnell, L., & Rudd, P. (2005) ***Evaluation of Increased Flexibility for 14-16 Year Olds Programme: The Second Year.*** NFER, DfES RR 609 [Online] Available at: ***http://www.dfes.gov.uk/research/data/uploadfiles/RR609.pdf*** Data sources included surveys, attendance and achievement and destinations data, case studies and interviews.

Golden, S., O'Donnell, L., Benton T., & Rudd, P. (2005) ***Evaluation of Increased Flexibility for 14-16 Year Olds Programme: Outcomes for the first cohort*** NFER, DfES RR 668 [Online] Available at: ***http://www.dfes.gov.uk/research/data/uploadfiles/RR668.pdf*** The attainment of students on the IFP programme was analysed through multi-level modelling.

Styles, B. & Fletcher, M. (2005) **Provision for Learners aged 14-16 in the Further Education Sector: an initial analysis.** LSDA . Data were collected from FE practitioners via a postal survey.

Data for the three regional reports was collected using a mix of case study, survey and interview materials.
First Phase Report. The London & South East Research Network Project: meeting the needs of younger learners in Further Education LSRN, 2005
What works for learners? Case Studies of 14-16 provision in FE Colleges in the West Midlands. LSRN, 2005
The nature of 14-16 collaborative partnerships between schools and colleges in the East Midlands, and the impact of this on provision. LSRN, 2005

Equal Opportunities Commission (2005) ***Free to Choose.*** [Online] Available at: ***http://www.eoc.org.uk/PDF/occseg_finalrep_england.pdf***
A synthesis of evidence from seven empirical studies.

Research Round-up

Self-management as a strategy for managing behaviour

We have been searching for positive evidence about what teachers can do to pre-empt and respond to behaviour challenges for a long time. Surefire evidence and a silver bullet would be nice to have – or would it?

Every situation is different and what works with students with EBD in one context won't necessarily work in another. The solution may be to put the students themselves in control of selecting behaviour management strategies – a recent review found good evidence from 22 studies that self-management techniques, which students were taught and expected to implement themselves, produced large, positive effects on academic outcomes.

What's different about these studies is that they focused on academic interventions, centred mainly around maths, writing and reading. As the researchers point out, most behavioural interventions have focused on inappropriate social behaviours rather than targeting academic skill deficits. Yet students with emotional and behavioural disorders usually also struggle academically.

The researchers identify the five commonly used self-management techniques as self-monitoring, self-evaluation, self-instruction, goal setting and strategy instruction. Only one study used goal setting, and self-monitoring was the most widely used strategy. The researchers defined self-monitoring as a "multistage process of observing and recording one's behaviour." First the student identifies the occurrence or non-occurrence of a target behaviour, then s/he records some aspect of the target behaviour at set, or cued, intervals.

Although the researchers are quick to point out that the studies took place mainly outside of mainstream classrooms – and more research is needed - the evidence from this review indicates strong potential for self-management, content-based interventions for increasing the academic achievement of students with EBD. There's benefit for teachers and fellow students too. By transferring responsibility for behaviour management from the teacher to the student, teachers can spend less time on classroom management and more on teaching and supporting student learning.

Mooney, P., Ryan, J.B., Uhing, B.M., Reid, R., Epstein, M.H. (2005) ***A Review of self-management Interventions targeting academic outcomes for students with emotional and behavioural disorders*** Journal of Behavioural Education 14 (3) pp.203-221

Evidence that after-school programs improved achievement and attitudes amongst disadvantaged children

There is strong research evidence to show that children growing up in economically disadvantaged circumstances are less likely to achieve well at school than their more affluent peers. A recent study in the US evaluated different kinds of after-school care for impoverished children and found that after-school programs had significant effects on the children's school achievement.

The research involved 599 primary-aged boys and girls from an urban, economically disadvantaged city over the course of a year. Researchers looked at the students' academic performance (school grades and reading achievement) and at motivational attributes (e.g. expectations of success.) They identified four patterns of after school care: after-school programme (ASP), parent care, combined parent/self-sibling care, and combined other adult/self-sibling care.

The ASPs were carried out in state schools between 3 and 6pm. Teachers were supported by adult staff, youth workers and volunteers. Activities included time for snacks, homework, enrichment learning (e.g. computers, musical instruments), supervised recreation (e.g. basketball or boardgames) and art. All of the children who took part were among the most disadvantaged in the city, with 57% living in poverty according to official thresholds.

The study found that children in ASP care showed significantly higher reading achievement at the end of the school year than children in all three alternative patterns. These children were also rated by their teachers as having higher expectations of success than the rest. Engagement was an important feature of the ASP care. The positive association between ASP care and academic-related outcomes increased when engagement in programme activities was high.

Mahoney, J.L., Lord, H., & Carryl, E. (2005) ***An ecological analysis of after-school program participation and the development of academic performance and motivational attributes for disadvantaged children.*** Child Development 76 (4) pp. 811-825

'Knowing is a process not a product'

In the first issue of the *Bulletin* we produced a brief insight into the key messages from Vygotsky, one of the most influential education theorists whose work is still current.

Many of you have asked for more of these snapshots, so here is a brief portrait of **Jerome Bruner** whose book 'Process of Education' (1960) was a landmark text.

At the time, Bruner was a psychology professor in America. He had been invited to chair a ten-day conference in 1959 attended by 35 delegates (scientists, historians, psychologists and educators) who had gathered to discuss the nature of the learning process and its relevance to education. After the conference Bruner developed the key areas of their discussions in what has become a 'classic' book.

The book presents a view of children as active problem-solvers and made the case for a 'spiral curriculum'. Bruner argued that:

- enabling students to understand subject 'structure' (rather than simply mastering facts and techniques) is central;
- using intuition to make a decision or find a solution is an essential feature of productive thinking;
- having an interest in the material to be learned (rather than using external goals, such as grades) is the best stimulus for learning; and
- teaching important areas should not be postponed because they are deemed 'too difficult'.

Bruner, J. (1960) ***The Process of Education*** Cambridge Mass: Harvard University Press

Group work

Why group pupils and when does grouping work best?

In previous issues of the *Bulletin*, we have presented evidence of the benefits of structured group work for students' learning. In this issue, we are pleased to bring you the results of a research review that provides a rich picture of the types of collaborative activities that can make group work so effective. The review also confirms and underlines the evidence about the value of well-structured group work for learning and the benefits of having mixed ability groups.

The key issue with group work identified by the review was the problem of motivating students to actually *work together.* Unless there was some reason for the group to interact, students tended to tackle the problem as individuals – even if everyone was expected to contribute something towards a shared goal. In other words, students tended to work cooperatively in groups, but not collaboratively.

How might we make group work effective?

The review found that making sure group work is effective depends crucially on to the way we set the problem up, the procedures we put in place and the roles we give the students. Specifically, the procedures we use need to be matched closely to the particular kind of learning we want to take place. For routine learning and problem solving, short exchanges of information between students are adequate. But to bring about deep learning, with understanding, longer, more elaborate explanations and information exchanges between students are necessary.

The kind of strategies that help students to collaborate effectively on group tasks included:

- developing and agreeing rules for exchanging dialogue, and sharing ideas and information;
- giving students specific strategies to use which aimed to improve their comprehension skills and help the students to monitor their understanding, such as questioning, clarifying, summarising, predicting;
- introducing controversy in order to encourage children to evaluate their own ideas and to contrast them with those of others – role play was particularly helpful for this;
- training students how to keep the group on task, through praising and encouraging others and checking to see that everybody in the group understands; and
- giving groups specific feedback, and encouraging them to reflect, on what they were doing.

There was strong evidence that putting students of mixed achievement levels into the same group was better than having groups with the same achievement level. Contrary to popular understanding, working in mixed achievement groups benefited both low and high-achieving students. There was evidence that the thinking of lower achieving students improved through interaction with higher achieving students. Providing effective support to lower achieving students helped the higher achieving students develop their explanatory skills.

A Case Study

In one school, classes of students aged 12-14 years worked in groups on map work tasks. The first 15 minutes of the lesson consisted of teacher instruction, then the students worked in mixed ability groups. The group discussions lasted 45 minutes a day for 25 days. In some classes (the experimental group), students were given the role of 'learning leader' whose task was to restate and summarise the main discussion points or 'learner listener' who had the job of asking probing questions and seeking clarification etc. In other classes (the control group) the students were simply told to discuss the material following the teachers' input. At the end of the study, the students in the structured group work classes had achieved significantly better results than the control group.

Group work poses different challenges in primary and secondary schools. In a recent UK study of within-class grouping strategies in secondary schools, researchers found that practical factors such as the length of the lesson, classroom space, manoeuverability of furniture and the availability of practical equipment sometimes dictated group size. They also found that teachers often used groups as a form of behaviour management. Grouping strategies varied through the phases of the lesson. For example, whole class grouping was typically used at the start and end of lessons and enabled teachers to control the cognitive content of the lesson. English and science teachers used group work more than mathematics teachers. Unfortunately, we haven't found any parallel evidence about conditions that affect group work in FE. Let us know if you have some!

How do we know this?

A review of empirical research (or reviews of such research) into the conditions which increase the effectiveness of small group learning. The reviewer selected over 50 studies that contrasted alternative forms of group learning, in order to identify the types of group work most likely to instigate genuine collaboration leading to higher-level thinking. Cohen, E.G. (1994), ***Restructuring the classroom: conditions for productive small groups*** Review of Educational Research 64 (1), pp. 1-35

In this study of existing within-class grouping strategies and teachers' rationales for using them, the researchers collected interview data from 36 teachers from eight curriculum areas. Kutnick, P., Blatchford, P., Clark, H., MacIntyre, H. and Baines, E, (2005), ***Teachers' understandings of the relationship between within-class (pupil) grouping and learning in secondary schools*** Educational Research 47 (1), pp. 1-24

Pupil voice

What might we learn from our students?

Companies and service providers often ask consumers for their views of a product, or what they think about a service, to help them identify ways of improving them. In the past, the 'consumers' in schools – the students – have rarely been asked for their views. Recently though, more and more practitioners as well as researchers have started to consult pupils of all ages. In our third issue, we looked at how asking young people for their views can be a first step towards personalising learning. Here, we explore the kinds of information that can be gathered from students and teachers' experiences of making use of such information.

Finding out students' views

Questionnaires are an obvious way of finding out students' views and they can reveal some interesting trends. For example, a recent survey of students' attitudes towards school science revealed that boys and girls were interested in quite different aspects of the subject – whilst girls showed a keen interest in topics related to health, the mind and well-being, boys were more interested in destructive technologies. Some topics (such as environmental issues) interested all students, whilst other topics (such as famous scientists) were of little interest to any of them. Such information could be useful when planning lessons. For example, although this survey found students were uninterested in learning about famous scientists, varying the teaching approach – such as introducing students to a particular scientist's discoveries through practical work – might result in a different view.

Another study used questionnaires to find out what students enjoyed most and least about learning geography and history. Perhaps predictably, the researchers found that students disliked writing essays and making notes from textbooks, but liked doing fieldwork, map work and carrying out investigations. Of greater surprise was that both the science and humanities questionnaires revealed that when students said they enjoyed a subject or found it interesting, this didn't mean they would opt to study it at GCSE. It might be interesting to do a survey with your students to explore what does motivate them to study it.

"Maybe we can avoid this questionnaire if we keep our heads down and walk fast..."

Acting on the information

Asking students to give their views can provide useful information, but clearly this isn't enough. What teachers do with the information they've gathered is important too. Another study not only investigated students' views about what helped them to learn – this time through interviews – but explored how teachers responded to their students' ideas. The students suggested they wanted more opportunities to collaborate with their peers because they felt it helped them to develop their understanding. They also appreciated interactive teaching that gave them ownership of their learning. As one student explained:

'If he asked more questions then we'd become more alert instead of just sitting there like, just listening to him all the time'.

The teachers tried making use of their students' suggestions, like doing group work, allowing students to use their initiative, making more use of ICT, and doing more practical work. This didn't work for everybody (perhaps because of the way they went about it), but some teachers experienced great success, and became enthusiastic about the value of consulting students. One such teacher commented:

'...you become aware that some of them have more positive attitudes towards learning than is necessarily apparent ... it's made me aware that I've got into a kind of routine way of working and it isn't necessarily the routine that they would want'.

It's clear that consulting students has the potential to make a positive contribution to teaching and learning. Of course, questionnaires and interviews aren't the only ways of finding out students' views – other methods include asking pupils to keep extended written logs, inviting quick 'postbox' evaluations, focus group discussions, and through drawing and painting pictures. For more information about these and other evidence based tools, why not check out the teachers' toolkit available from the ***http://www.consultingpupils.co.uk*** website?

How do we know this?

A questionnaire survey of around 1300 Y10 students from 34 schools to find out their views about school science, what they would like to learn, and their career aspirations. Jenkins, E.W. & Nelson, N.W (2005) ***Important, but not for me: Students' attitudes towards secondary school science in England*** Research in Science & Technological Education 23 (1) pp.41-57

A questionnaire survey of around 1400 Y9 students from ten schools in the East Midlands to find out the factors influencing students' uptake of history and geography at GCSE. Adey, K. & Biddulph, M. (2001) ***The influence of pupil perceptions on subject choice at 14+ in geography and history*** Educational studies 27 (4) pp. 439-450

Interviews with 36 Year 8 students drawn from six teachers' classes (two English, two mathematics and two science) about their views of teaching and learning, and interviews with their teachers to find out their reactions to their students' comments and ideas, and the use they made of them. McIntyre, D., Pedder, D., & Rudduck, J. (2005) ***Pupil voice: Comfortable and uncomfortable learnings for teachers*** Research papers in Education, 20 (2) pp.149-168

MacBeath, J., Demetriou, H., Rudduck, J. & Myers, K. (2003) ***Consulting pupils: A toolkit for teachers*** Cambridge: Pearson Publishing

Evidence about brain-based learning

Debunking the myths

Brain-based learning has become the subject of increasing interest among teachers, especially in the last ten years or so. While neuroscience is informing our understanding of a range of disorders relevant to education (such as dyslexia and ADHD) there is less evidence to support the growing enthusiasm for basing classroom and student interventions on a neuroscientific basis. A Scottish study, which reviewed recent research on brain development and the possible impact on young people's learning, identified a number of 'neuromyths', or misconceptions that have arisen through scientists' results being misinterpreted or exaggerated.

Right and left brainers?

The idea that the two halves or hemispheres of the brain work in quite different ways is probably one of the most well known 'facts' about the brain. Usually, the 'left brain' is characterised as the logical half, concerned with reasoning, problem-solving and language, while the 'right brain' is characterised as the intuitive and creative side, concerned more with images than words. But, the review found, it is an over simplification, which is not supported by the brain research literature. The idea of brain sidedness was based largely on studies of 'split brain' patients with epilepsy – a highly abnormal circumstance, which results in disruption of communication between the two halves of the brain. In the normal, healthy adult human brain such characterisations do not hold. Even simple tasks, such as identifying numerals or decoding words, activate both parts of the brain. Most tasks require both hemispheres to work together.

'Enriched' environments?

There are many who argue that children should be brought up in an enriched environment to enhance their learning potential. This view is based upon research on rats raised in 'enriched' or 'deprived' environments. The deprived environment was a normal laboratory cage for a single rat, while the enriched environment included various toys such as wheels and ladders and also other rats for company. The rats brought up in the 'enriched' environment were found to have greater density of synapses in their brains and performed learning tasks better than the deprived rats. But this has been a case of extrapolating facts from a study of rats to humans in a way that goes way beyond the evidence. What the study actually showed was the detrimental effects of an artificially 'deprived' environment, a finding that is further evidenced by studies of deprived orphans in Romania.

'Critical' periods for learning?

The argument that certain learning needs to occur at set times, especially in the first three years of life should also be treated cautiously. The critical period argument was derived from studies of animals. For example, scientists found that as kittens grew, the number of synapses first increased rapidly, then slowly fell back to adult levels. One problem with applying this research is that once again it assumes that animal research can be extrapolated to humans; another is that the studies relate only to the development of sensory systems. It also assumes that more synapses means more brainpower.

Neuroscientists have however identified 'sensitive periods' when the brain may be at its optimum for learning certain things. Learning a musical instrument or a foreign language, for example, benefits from the learning that takes place before the age of about twelve. There is also research evidence that learning can occur throughout our lives – for example, imaging scans of taxi drivers have shown enlarged hippocampi, which the researchers related to the growth of specialised (in this case geographical) knowledge. So it seems it's also never too late to learn – which is good news for lifelong learning.

What *is* the evidence for 'brain-based learning'?

There is relatively little scientific evidence to support brain-based learning because our knowledge about the brain is incomplete and also, in some aspects, inaccurate. So what does this mean for popular activities such as 'brain gym' for which there is no scientific evidence yet thousands of enthusiasts? The lack of scientific evidence for these sorts of activities doesn't mean we shouldn't do them, but it does suggest the need to be cautious about the claims made for them and that we should consider neuroscientific ideas carefully before we base our teaching around them.

Jargon Buster

***Neuroscience** is the study of how the brain works. The brain is split into two **hemispheres**, the right and left. These are connected by a mass of nerve fibres that carry messages between the two. Each hemisphere is divided into four **lobes**, which are associated with particular cognitive tasks, such as planning and action, hearing, object recognition, and sensation. Within the brain, is the **hippocampus**, which is concerned with the formation of memories. The 'grey matter' of the brain consists of billions of **neurons** (nerve cells) connected by **synapses** (junctions), which are responsible for our mental activity.*

How do we know this?

We have reported the findings from a review of around 70 international studies about brain research drawn from cognitive neuroscience and educational psychology. However we know from consulting eminent practitioners about this article that there are other sources and other views. Send us your sources and we'll publish a synthesis in the next issue of the Bulletin.

Hall, J. (2005) ***Neuroscience and education: A review of the contribution of brain science to teaching and learning*** The Scottish Council for Research in Education [Online] Available at: ***http://www.scre.ac.uk/resreport/pdf/121.pdf***

Teachers do it best in collaboration

Every teacher has memories of disappointing INSET days. These one-off, one-day programmes are increasingly being replaced with longer-lasting, structured CPD programmes with built-in opportunities for teachers to practise what they have learned together in their classrooms. That's because we have increasing evidence that teacher collaboration – in which professional conversations prompt reflection and stimulate action - is a very effective way of developing new skills and knowledge. The first review of CPD for teachers of the 5-16 age range (see Issue 1) highlighted the importance of working with peers for both sustaining the CPD and extending the reach of expensive external specialists. Two recent reviews continued this work by comparing collaborative CPD with individually oriented CPD and by unpacking further the processes of effective CPD. What was it that teachers did together that helped them to change their teaching and improve learning outcomes for their students?

Collaborative ways of working

Teachers collaborated through:

- structured discussion about evidence from classrooms about what teachers and pupils are doing;
- experimenting with new ideas - observing each other and discussing what did and didn't work was more effective than reflective conversations alone;
- ongoing peer support – this helped sustain the CPD and provided a safe environment; and
- working together in pairs or small groups in their own schools – evidence suggested that this helped to 'tune in' the CPD programme to their own needs and what they know already.

Working together to embed new knowledge and skills

Specialist expertise was a key feature of CPD with positive outcomes. After intense specialist input at the start of the programmes, teachers worked together to embed new knowledge and skills into their practice, often with ongoing specialist support. Most of these programmes aimed to accommodate teachers' individual starting points.

Because they don't want to let each other down, teachers are an important resource in supporting and sustaining the development of their own and their colleagues' practice. The research found that when the CPD arose from externally imposed changes (when the focus had not been identified by the teachers themselves) collaborative discussion, especially discussion about what the programme means for specific students, helped them to develop ownership and commitment to the new strategies.

Working together:

- helped increase motivation: 'It provided a sense of purpose and energised teachers at different stages of development to take risks and to examine their practice on an ongoing basis';
- developed teachers' peer coaching skills: 'A coach can provide the procedural and affective support teachers need when they take risks to implement new methods which may be different from those they have used in the past'.

Yet collaborating with colleagues was not always painless:

> 'You are forced to open up, and you are forced to let down your guard...It was not just a matter of being afraid if you were right or wrong, you were just open.'

The reviews found that in CPD involving collaboration between teachers, there was evidence they learned more and made more changes to their teaching than teachers involved in CPD which did not feature collaboration.

A study from the third review illustrates coaching of mathematics teachers. In a Jamaican high school, four mathematics teachers undertook the CPD. It began with specialist input about reflective coaching that aimed to engage the students of the participating teachers in metacognitive activity (thinking about their reasoning in mathematics), to develop their understanding and to develop greater flexibility in the way they solved problems. Working with the specialist, the teachers adapted the strategies to their own teaching. After the seminars, the teachers individually tried out the new approaches with their students. Later they formed two pairs in which each acted as both coach and coachee. Through observation and feedback, they helped each other refine their use of the coaching methods. Regular sessions with the specialist offered the opportunity for debriefing, sharing experiences and reflecting on practice. In the early phase, the specialist coached teachers individually and later, in pairs. The teachers were enthusiastic about the coaching:

> 'This collaboration served to build a learning community.'

> 'Whereas prior to PDP [the CPD] teachers utilised the direct teaching methodology... so they were always telling and showing students how to do, instead, they are now allowing the students to learn by understanding for themselves the concepts they need to learn.'

How do we know this?

The two reviews followed an earlier systematic review of evidence about the effects of teachers' professional development on teaching and learning of pupils in the 5-16 age group. About 19,000 titles and abstracts were screened. Studies that met the inclusion criteria were analysed using the EPPI Centre's 'data extraction' software. Fourteen studies of CPD with pupil outcomes and 11 studies of collaborative CPD with teacher only outcomes provided good evidence and were synthesised into two reports.

Cordingley, P., Bell, M., Thomason, S. and Firth, A. (2005) ***How do collaborative and sustained CPD and sustained but not collaborative CPD affect teaching and learning?*** [Online] Available at: ***http://eppi.ioe.ac.uk/EPPIWebContent/reel/review_groups/CPD/cpd_rv2/cpd_rv2.pdf***

Cordingley, P., Bell, M., Evans, D. and Firth, A. (2005) ***What do teacher impact data tell us about collaborative CPD?*** London: EPPI-Centre, Social Science research Unit, Institute of Education [Online] Available at: ***http://eppi.ioe.ac.uk/EPPIWeb/home.aspx?page=/reel/review_groups/CPD/review_three.htm***

Hot websites

This issue we've brought you four subject association websites – geography, modern foreign languages, maths and science. You can find out more about joining the associations on the websites.

Geographical Association (GA)

http://www.geography.org.uk/

This is a down-to-earth (no pun intended!) site which has a real personal flavour. The News section contains letters from the President and CE of the association, and 'Clare's Place' is a weekly updated 'diary' by a trainee teacher which gives a refreshing outlook on current geography-related events and ideas on how they can be related to the classroom.

Go to the resources section for information about finding resources related to current hot topics such as Hurricane Katrina and the Indian Ocean tsunami, and also for research – from small-scale projects submitted by individuals to research on the curriculum on a national scale. You can also send in your own research to include in the "research register".

The 'Projects' section gives information about the Geography Trainers' Induction Programme (GTIP), together with thinkpieces designed to inspire you in your practice, along with other geography-related projects. Interesting case studies of geography departments who have built their own websites are given here too.

'What's new' and 'Hot off the press pages' are kept well up-to-date, with news and resources about current events. The site is open for anyone to use, but if you become a member of the GA, extra benefits include various personalisations when you log in, such as storing your bookmarks, a recently viewed panel to show where you have been on the site, links to the journals you selected to subscribe to, and an email bulletin.

CiLT – National Centre for Languages

http://www.cilt.org.uk/

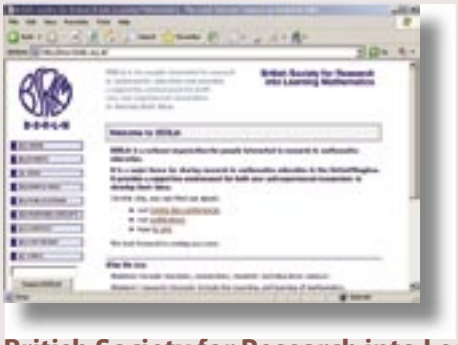
This website covers education and training from the earliest years to language learning in and for the workplace for both qualified and training teachers, researchers, and learners of all ages.

The research resources page is a gateway to language research, linking to sites such as Teachernet for the BPRS reports and NfER News. Details on the Comenius network (a regional framework to support the National Language Strategy), among others, are available in the training and professional development section of the site.

The Centre has an active library service with about 14,000 titles, which can be searched via the online library catalogue. Online helpsheets are provided which help in locating particular resources and research. The FAQs section contains help areas such as citizenship, language learning courses, SEN and finding a job.

You can register to receive alerts from CiLT on events and information that might be of interest to you. These come by post, fax and phone as well as by email.

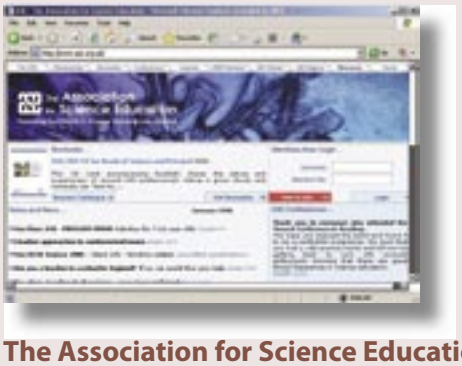
The centre also provides business services, such as translation. And the BLIS portal gives access to thousands of courses, including audio courses around the country. The site also covers community languages, a bonus for those working in schools with large minority ethnic populations.



British Society for Research into Learning Mathematics (BSRLM)

http://www.bsrlm.org.uk

This is a national organisation for people interested in research in maths education, including teachers, researchers, students and education advisors. They organise a day conference every term, and you can download their proceedings from the site. There is a site search engine on the left hand side of the page. Currently, there are two working groups, one focusing on geometry and the other on maths education and applied linguistics. Papers and contact details for these are made available on the site.



The Association for Science Education

http://www.ase.org.uk/home.php

The ASE is the professional association for teachers of science. The busy homepage has links to the latest news, conferences, and related websites. The 'ASE Global' section is worth checking out. It aims to help promote a global perspective in science education – including features on sustainable development, and other ethical, social and political dimensions of science. Training for teachers and technicians supplied by the ASE is available from the website, and the resources section links to sites such as ISSEN (Inclusive Science and Special Educational Needs). ASE publications can be easily browsed and bought from the online bookshop.

Who's taking what?

Some facts and figures about drugs and young people

In the last issue of the *Bulletin* we looked at some of the worrying facts and figures relating to young people's mental health. Mental health is also being increasingly linked with drug abuse, which is damaging the chances of success for students in many of our schools and colleges. Which of our students are most at risk?

Studies have identified the most vulnerable groups of young people as those who have ever been:

- in care (for any time aged between 10 and 16);
- homeless;
- truants;
- excluded from school (temporarily or permanently); and
- serious or frequent offenders.

Research has also identified children from families with substance-abusing parents or siblings and young people with conduct or depressive disorders to be at risk of frequent – defined as the use of any drug more than once a month – drug use.

Class A drugs include amphetamines, heroin, cocaine, ecstasy, magic mushrooms, LSD and unprescribed use of methadone. Other drugs include cannabis and solvents. Poppers is the term for the group of chemicals known as Alkyl Nitrates that include Amyl Nitrite, Butyl Nitrite and Isobutyl Nitrite. They come as a clear or straw-coloured liquid in a small bottle or tube. The vapour is inhaled through the mouth or nose.

- Only 28 % of the young people in the 2003 Crime and Justice Survey were from vulnerable groups. Yet more than half (61%) of the Class A drug users in the survey were from these groups.
- Only 5% of those who were not vulnerable used drugs frequently. Nearly five times as many (24%) of those in vulnerable groups were frequent drug users in the same period.
- Only 4% of those who were not vulnerable used Class A drugs in the last year, while 16% of those in vulnerable groups used Class A drugs during the same period.

Young people who were members of more than one vulnerable group had significantly higher levels of drug use than members of just one vulnerable group. For example, frequent drug use in the last year for those in more than one vulnerable group was 39%, compared with 18% for those in just one vulnerable group.

Research evidence shows that multi-agency approaches are very effective when targeting vulnerable young people. Many schools and colleges are already working together to enhance the life chances of disaffected young people. How could your school or college link up with other service providers to target drug education at those most at risk?

Becker, J. & Roe, S. (2003) ***Drug use among vulnerable groups of young people: findings from the 2003 Crime and Justice Survey*** [Online]. Available at: ***http://www.homeoffice.gov.uk/rds/pubintro1.html*** The Crime and Justice Survey is a large, national survey of people aged 10 to 65 living in a representative cross-section of private households in England and Wales

About this publication

The *Bulletin* has been produced for teachers, lecturers and all the professionals who support learning, wherever it takes place. It is a pioneering publication in the field of education, which aims to bring research evidence to the attention of practitioners to help them directly in their work. It does this by identifying matters of practical concern and selecting reliable research that addresses them.

Further copies are available free of charge by emailing ***nerf@prolog.uk.com***, writing to NERF publications, PO Box 5050, Sherwood Park, Annesley, Nottingham, NG15 0DJ, or phoning 0845 6022260. Please quote reference code NERFB5 for this issue, NERFB4 for Issue 4, NERFB3 for Issue 3, or NERFB2 for issue 2. Issue 1 is now out of stock, but is available on our website.

All previous Bulletin issues and individual articles can be downloaded from ***www.nerf-uk.org***

This is the fifth issue of the Bulletin. We hope to be able to bring you Issue 6 in the summer term. Meanwhile, please let us know what you think by emailing ***info@nerf-uk.org*** What topics would you like to see in the next issue? How can we improve the *Bulletin*?

This is a NERF project directed by Andrew Morris and coordinated by Deborah Wilson and Patricia McLean. The *Bulletin* is produced by the Centre for the Use of Research and Evidence in Education (CUREE) on behalf of NERF. The CUREE team is: Philippa Cordingley, Director; Miranda Bell, Editor; Kate Holdich, Coordinator; Caroline Page, cartoons. Design and layout by Noel Stainer, DfES.

NERF
National Educational Research Forum

The National Educational Research Forum is an independent body with a remit to oversee the developmentof a national strategy and framework for educational research in England.

GTC
General Teaching Council for England

The General Teaching Council for England is the independent professional body for teaching in England.