

**A Review of the Teaching and Learning Research Programme
(TLRP) and Its Implications for Northern Ireland**

Final Report for the Department of Education

Prepared by

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(Note that this document is fully hyperlinked with links internally to appendices and externally to the Internet)

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1 Introduction

- 1.1 The Teaching and Learning Research Programme (TLRP) was launched in 1999 and is the largest educational research programme ever to be undertaken in the UK. It was established as an Economic and Social Research Council (ESRC) programme, comprising a network of projects, and was funded by the Higher Education Funding Council for England (HEFCE), the Department for Children, Schools and Families (DCSF), the Scottish Government, the National Assembly for Wales and the Northern Ireland Assembly. The ESRC managed the programme on behalf of the funders with a steering group, an appointed director and a part-time team of associate directors. The main-phase TLRP¹ was completed in 2009 and represented an investment of approximately £43m, which has produced in excess of 1,500 research-informed resources.
- 1.2 The TLRP mission was: *‘to promote high quality research on education, focused on improving outcomes for all types of student and designed to be relevant to the practice of teaching and learning’*. Key priorities of the TLRP projects included: (i) the involvement of practitioners in contributing to and using research for user engagement, designed to guarantee relevance and quality; (ii) the development of research capacity in the field through the professional development of both researchers and practitioners; (iii) forming partnerships for sustainability; and (iv) collaboration between disciplines and sectors.
- 1.3 Recognising the importance of the TLRP work from early years education to work-based learning and, in order to maximise the dissemination of the research findings from the programme to policy-makers,² the ESRC created placement fellowships in conjunction with government departments. The fellowship arrangement in Northern Ireland was negotiated with the ESRC, the Department of Education (DE) and the Department for Employment and Learning (DEL) by representatives from Queen’s University, Belfast and the University of Ulster. This report seeks to illustrate how the

¹ Although the TLRP was completed in 2009, the ESRC and the Engineering and Physical Sciences Research Council (EPSRC) have created a Technology Enhanced Learning (TEL) extension phase to 2012.

² In Scotland this took the form of a fellow developing working papers on resilience in young people and evidence from TLRP to support recommendations from the OECD. In Wales, eight part-time fellows are being funded to review TLRP’s implications for four separate themes: the Foundation Phase, Improving teaching for 7-14 year olds, Improving learning by taking account of learners’ perspectives, and Social inclusion. No fellowship arrangement has been made for England.

TLRP research addresses the research priorities of the Northern Ireland funding partners and how it can contribute to their future research agendas.

2 TLRP Projects

- 2.1 TLRP was made up of more than 100 investments including four research networks (three in the schools sector and one in post-compulsory education); 56 research projects (22 in schools and 34 in post-compulsory education); six associated projects; two career development associate-ships; five research training fellowships; 25 'Meetings of Minds' fellowships; 20+ thematic initiatives and two Directors' Fellowships. Listings of the TLRP projects relevant to this report can be found in [Appendix 1](#) (including lists by sector and by funding phase).
- 2.2 The TLRP work focused on ten education stages: Early Years; Primary Education; Secondary Education; Across School Phases; Further and Post-16 Education; Higher Education; Workplace Learning; Professional Learning, Lifelong Learning and the final phase, Technology Enhanced Learning. The TLRP's focus was squarely on teaching and learning outcomes in these stages and therefore, by design, there are many important educational issues that fall outside the Programme's remit.
- 2.3 The main funding phases of the TLRP were as follows:
- Phase I (2000-2003) which supported three networks of projects in the school sector and one in post-compulsory education;
 - Phase II (2001-2004) which supported six projects in the school sector and three in post-compulsory areas;
 - Phase III (2003-2008) which supported 12 projects in post-compulsory areas.
- 2.4 'Extension projects' were also funded in Scotland (four projects from 2003-05), Northern Ireland (three projects from 2004-07) and Wales (four projects from 2004-07). These projects extended the work undertaken by Phase II projects. The 'Widening Participation in Higher Education' phase (2006-08) also supported seven projects in England.

3 Northern Ireland's TLRP Projects

- 3.1 Northern Ireland had one 'main phase' project, 'ACTS II: Sustainable Thinking Classrooms' ([McGuinness and Sheehy](#)), which continues to have considerable UK-wide and international impact. Focusing on thinking skills in primary classrooms, the project's findings challenge teachers to examine their beliefs about how children learn.

- 3.2 The Northern Ireland ‘extension phase’ of TLRP comprised three projects. The first considered ‘A Values-based Approach to Teacher Education’ (*Smith et al*). The highly topical uncertainties around the selection system and the introduction of a new curriculum in Northern Ireland were some of the challenges a group of PGCE students had to face as they were tracked through their induction and early professional development experiences in schools.
- 3.3 A second project, ‘Consulting Pupils on the Assessment of their Learning (CPAL)’ (*Leitch et al*) built on TLRP’s Phase I network project ‘Consulting Pupils about Teaching and Learning: Process, Impact and Outcomes’ (*Rudduck et al*). The Northern Ireland project focused on the ‘pupil voice’ in the context of the introduction of Assessment for Learning methods in schools in Northern Ireland and the development of the Annual Pupil Profile (which had been proposed as part of the system replacing the 11+ Transfer Tests).
- 3.4 The third extension project, ‘Learning In and For Interagency Working: Multi-agency Work in Northern Ireland’ (*Gallagher et al*) examined how to make interagency work more effective in the context of children at risk of being expelled from schools.

4 Review Methodology

- 4.1 Reviewing the TLRP research projects and relating their findings to the research agendas and policy concerns of the two Northern Ireland departments (Department of Education and the Department for Employment and Learning) was the main task of this fellowship. The methodology involved in-depth familiarisation with both departments’ research and policy priority areas and how they overlapped.
- 4.2 The key documents that were relevant to the Department of Education’s priorities included the 2008-09 *Business Plan*³ and the strategy document: *Every School a Good School*⁴. The process also involved liaising with and interviewing key people in the Department with a view to acquiring the most recent information on the Department’s priorities and then triangulating the information provided with the various documents.
- 4.3 The next stage was to map the main findings and implications of the TLRP projects into the Department’s research priorities and policy concerns, once these were

³ Business Plan 2008-09, Department of Education, http://www.deni.gov.uk/final_business_plan_2008_09_pdf_200kb.pdf

⁴ Every School a Good School, 2008, Department of Education, http://www.deni.gov.uk/literacy_and_numeracy_strategy_-_english.pdf

identified. This involved taking the synthesis of the main findings, outcomes and implications of each TLRP project and assessing the extent to which they were relevant to the Department's priorities. The report enables the reader to access project summaries and Internet resources through hyperlinks in the text and appendices.

5 Department of Education Policy and Research Priorities

- 5.1 The Department of Education is responsible for the central administration of all aspects of school and early years education and related services. The recent Review of Public Administration recommended a restructuring of the education system to improve the quality of education services. It is anticipated that in 2010, a new Education and Skills Authority will provide support to schools while the Department will focus on policy formulation and providing direction for the education sector.
- 5.2 Currently, the Department's main areas of responsibility are for pre-school, primary, post-primary and special education; the youth service; the promotion of community relations within and between schools; and teacher education and salaries. Its primary statutory duty is to promote the education of children and young people of Northern Ireland and to ensure the effective implementation of education policy. Through the Education and Training Inspectorate, the Department is also responsible for the evaluation of and reporting on the quality of teaching and learning, and teacher education.
- 5.3 The vision of the Department is 'to ensure that every learner fulfils his or her full potential' and its business plan focuses on a set of relevant public service agreements (PSAs)⁵. Of particular relevance are PSA 10 and 19:
- PSA 10 - Helping our children and young people to achieve through education;
 - PSA 19 - Raising standards in our schools.
- 5.4 Following the most recent ETI Chief Inspector's report for the period 2006-08⁶, five priorities were identified to help achieve the Department's PSA objectives. These are:
- Raising standards for all;
 - Improving access to high quality education;

⁵ DE Business Plan 2008-09, http://www.deni.gov.uk/final_business_plan_2008_09_pdf_200kb.pdf

⁶ Chief Inspector's Report, 2006-2008, The Education and Training Inspectorate (2009) http://www.etini.gov.uk/ci_report.pdf

- Developing the education workforce;
- Improving the learning environment;
- Transforming educational administration.

5.5 The TLRP programme is very broad and does not specifically address all of these priorities but this review seeks to offer insights that do have relevance to Northern Ireland policy matters. For example, in the context of improving learning outcomes and raising standards, a TLRP project in England (*Nunes et al*) found that teaching about ‘morphemes’ and their role in spelling can help with both spelling and vocabulary. The researchers also found that using simple concepts like ‘sharing’, with which children are familiar, can help them understand more complicated mathematical concepts like fractions. This and other examples of research findings from TLRP will be presented later in the report with a view to informing the Department’s policy making.

5.6 The Department commissions research that is important to both practitioners and policy-makers. A main objective for recent research has been to raise standards in literacy and numeracy focusing on the Foundation stage of early years and Key Stage 1. The Department recognises that literacy and numeracy underpins the curriculum and the importance of reaching children at this early stage. Authoritative research evidence will be particularly relevant as the Education and Skills Authority comes into operation in 2010 and in particular will help inform how professional support to is provided to ensure that standards in literacy and numeracy are improved in schools.

6 TLRP Findings and the Northern Ireland Context

6.1 Discussions with Department officials highlighted their particular concern about literary and numeracy standards. The most recent Chief Inspector’s report recorded, for example, that by the time they leave primary school “...one fifth of children in Northern Ireland do not attain the level of literacy and numeracy expected for their age” (p 33⁷). The difference in achievement levels across the sector, which can often be observed in neighbouring schools with the same catchment and intake profiles, is a particular concern highlighted by the Organisation for Economic Cooperation and Development’s (OECD) 2006 Programme for International Student Assessment

⁷ Chief Inspector’s Report, 2006-2008, The Education and Training Inspectorate (2009) http://www.etini.gov.uk/ci_report.pdf

(PISA) report⁸. Of the OECD member countries, Northern Ireland ranked lowest in the tables of all participating countries in terms of its distribution of performance in mathematics (36th), science (50th) and reading (41st) across schools.

6.2 Although the situation is exacerbated by the selective education system, which de facto creates differentiated outcomes between selective and non-selective schools, this is not exclusively the case. There are, therefore, overarching concerns about how to improve the quality of education and learning outcomes for all students. At the heart of the matter is the need to improve access to high quality education for all, particularly in the early formative years where the development of literacy and numeracy skills is a crucial platform for later success and for closing the gap between low and high achievers. Improving literacy and numeracy therefore remains a central concern for the Department as does school leadership and the effective use of assessment for school improvement.

6.3 The TLRP projects with relevance to the Department's priorities have a focus on early years, primary and post-primary education and there are a number of ways of examining them with a view to addressing the issues that are of most interest. For the purposes of this report the categories of analysis are as follows:

- Improving learning outcomes and raising standards
- Improving learning opportunities and motivation
- Improving teaching
- Implications for policy and practice

6.4 Clearly there will be much overlap in any context that covers learning and teaching. For the most part the following sections therefore attempt to focus on the most relevant aspects of the TLRP research relating to the category under analysis.

7 Improving Learning Outcomes and Raising Standards

7.1 The improvement of learning outcomes is inextricably linked with improving teaching and learning. Many of the TLRP projects point to implications in relation to teaching and teachers' professional development. The issue of improving teaching is addressed later in this report). However, TLRP has also developed insights into learners' needs, some of which are considered in this section.

⁸ Programme for International Student Achievement 2006, Organisation for Economic Cooperation and Development http://www.oecd.org/document/2/0,3343,en_32252351_32236191_39718850_1_1_1_1,00.html

- 7.2 Across the world governments and education systems are constantly aiming to improve the outcomes of schooling. In Northern Ireland there is an acknowledged ‘tail’ of under-achievement in primary and post-primary schools, and specifically in aspects of literacy and numeracy. TLRP had three projects that specifically looked at improving learning outcomes in aspects of literacy and numeracy, and conceptual understanding in reading, mathematics and science.
- 7.3 *Nunes and* her colleagues, for example, focused on improving numeracy and literacy standards at Key Stage 2 and argued that insufficient attention is given to children’s learning about ‘morphemes’ (the small units of reading that have meaning, e.g. ‘un-’, ‘break’ and ‘-able’ in the word ‘unbreakable’). In their survey of over 7,000 primary school children they found difficulties being experienced in spelling words with similar sounding but different endings e.g. magician and emotion. They concluded that children’s vocabulary and spelling can be improved by helping them to become aware of the role of morphemes. Using an IT game format, and working with over 1,000 children, they developed materials that successfully enable children to: add and subtract morphemes from words; make analogies; count morphemes; guess the meaning of invented words comprising real morphemes; and discover grammatical categories for selected morphemes.
- 7.4 *Nunes et al* also found that children improve their understanding of basic mathematical concepts such as fractions if they are able relate them to personal experiences. So-called ‘extensive quantities’, such as a number of items, are definitive and relatively easy to understand and use. However, ‘intensive quantities’, such as speed or fractions, are relative and children do not find it easy to grasp how to use them; a failing that can endure into adulthood. The project showed that the understanding of fractions can be significantly improved if the learning involves everyday personal experiences such as sharing. For example, children by and large understand that if one child gets half of a large cake and another gets half of a small one, they are not receiving the same amount. The research study showed that between five and eight specially designed intervention lessons were needed to help children use their insights from everyday experiences as a basis for successful learning.
- 7.5 In a Scottish extension project, *Howe et al* confirmed the relevance of ‘intensive quantities’ in a project with a similar focus, conducted with 5 to 14 year olds. It showed that the teaching of ‘intensive quantities’ is also largely neglected in Scotland and leads to enduring difficulties. Developing good understanding of ‘intensive quantities’ was shown to be very important, not only for numeracy standards but also,

for the linkage between mathematics and science. It was found that mastery does not develop without specific teaching and that just a few hours of intervention teaching can improve learning outcomes in this area.

- 7.6 TLRP research has indicated that knowledge acquired from the home environment is an important source of pupil knowledge which is often not taken into account. Home-school links is a particular focus of 'Every School a Good School'⁹ and *Hughes et al's* TLRP project has shown that home-school knowledge exchange was found to have a positive impact on pupils' attainment in literacy and mathematics and particularly in progress in literacy from Year 6 to Year 7 (equivalent to Year 7 and 8 respectively in Northern Ireland). However, it must be said that the gains were not statistically significant in mathematics and the literacy gains were not uniform across the schools involved. A related project by *Brookes* also demonstrated the benefits of home-school knowledge exchange for gifted pupils at secondary transfer.
- 7.7 *Millar et al* also looked at conceptual understanding, this time in science. Many of the findings related to teaching and the project developed short teaching sequences that were shown to improve the pupils' grasp of scientific concepts relating to uncertainty, testing, interpretation of data and contributions to society.
- 7.8 Developing thinking skills at Key Stage 2 was another technique that showed improved learning outcomes for most children when it was applied in Northern Ireland classrooms by *McGuinness and Sheehy*. The main emphasis was on explicit teaching of thinking skills. Children with moderate to highly developed abilities (80% of those involved) benefited the most while the 20% with poorer cognitive abilities needed longer time and more attention.
- 7.9 *Plowman and Stephen's* project found that learning outcomes for nursery children from ICT encounters are enhanced when they are guided by their teachers and are less effective when they use the ICT in free play, as and when they like. Guided interaction was shown to promote young learners' positive disposition to learning, improve their knowledge of the world and their operational skills, their hand-eye coordination.
- 7.10 An 'associate' project, '*Effective Pre-school and Primary Education*', (EPPE) (*Sylva et al*) investigated the effects of pre-school education on children's development. The initial project was Europe's largest longitudinal investigation into the effects of pre-

⁹ Every School a Good School, 2008, Department of Education, http://www.deni.gov.uk/literacy_and_numeracy_strategy_-_english.pdf

school education on children's developmental outcomes at the start of primary school (3,000 pupils, 141 pre-school settings). The researchers found that pre-school attendance per se, with an early start (before 3 years), is related to better intellectual development at ages 6 and 7 and that it enhances independence, concentration and sociability. The latest phase (EPPE 3-11) is a five year extension and has found evidence that the benefits from pre-school education endure for 10 year olds at Key Stage 2.

8 Improving Learning Opportunities and Motivation

- 8.1 Part of the rationale for the Revised Northern Ireland Curriculum (RNIC) is to ensure that the learning and teaching environment is tailored to each and every student. To quote the recently published policy document *Every School a Good School*, the Department's vision is:

'...To ensure that every learner fulfils his or her full potential at each stage of her or his development.' p3

- 8.2 One aspect of this aim relates to providing a range of learning activities across the curriculum and often in a thematic manner. While no particular TLRP project addresses this innovative approach to curriculum there are some research findings that focus on developing more variety and opportunities for learning.
- 8.3 For example, *Plowman and Stephen's 'INTERPLAY: Play, Learning and ICT in Pre-School Education' project*, suggested that in addition to enhanced learning outcomes promoted by good teacher guidance, pre-school children can become more motivated to learn by using ICT in a balanced environment where child-initiated as well as adult-led activities are employed. The project findings also led to the conclusion that, in addition to computer, other forms of technology such as mobile phones, digital still and video cameras and other electronic toys could promote additional opportunities for learning.
- 8.4 Promoting motivation for all but especially for disadvantaged pupils is another challenge for teachers as disaffection and lack of engagement in learning is a problem in many schools and is an underlying cause of underachievement. This of course is not a new phenomenon and schools in Northern Ireland have made great strides through projects such as the 'Multi-agency working in Northern Ireland' project, which looked into how the various agencies can better work together in order to fight social exclusion in schools. *Gallagher et al* found that for these collaborations to work, agencies needed to build relationships of trust and that these relationships need to focus on tangible outcomes. They also found that greater involvement by

external agencies was needed. The move to increase pupils' engagement in their own education should gain increasing impetus by the greater autonomy given to schools to tailor curricula for their own pupils through the RNIC.

- 8.5 One of TLRP's Phase 1 networks, '*Consulting Pupils about Teaching and Learning: Process, Impact and Outcomes*' (*Rudduck et al*) pointed to aspects of the school environment as being crucial to engaging pupils more fully. This project found that pupils who feel they are important in their school, and are consulted about school processes, become more engaged with and committed to learning. *Rudduck et al* found that consulting pupils on their learning can encourage them to take more responsibility for their own learning. *Leitch et al* have also provided evidence that pupils can be consulted directly and effectively on educational policy (in this case their views on a mechanism for profiling their progress) and that consulting them on classroom processes, for example in assessment for learning, can contribute to higher levels of participation and engagement with learning.
- 8.6 *Ainscow* and his colleagues have argued that it is not possible to achieve better learning outcomes simply by teaching the curriculum in a more rigorous manner. Instead, they have identified the benefits in learner outcome terms of teachers reflecting on evidence of their pupils' experiences of school in relation to their own practices, and then setting out to strengthen pupils' enjoyment in learning and their self-esteem.
- 8.7 *Blatchford* and his colleagues worked with pupil groups in Key Stage 1-3 classrooms and their findings suggest that group work promotes pupil engagement in higher level discussions and also improves their disposition and behaviour. Successfully implemented group work had significant positive effects on pupils' progress with effect sizes ranging between 0.22 and 0.62 for Key Stage 1 reading and mathematics, and between 0.21 and 0.58 for Key Stage 2 science. Teacher-pupil and pupil-pupil relationships were considered to have improved and there was evidence of participation being more evenly distributed in the classes, with more 'on-task' and sustained learning-related interactions.
- 8.8 In a Scottish extension study that involved over 600 upper primary pupils in 24 schools *Christie et al* also examined the potential for properly implemented group work. The project demonstrated the potential for gains across a number of measures in science and identified the social processes of sharing, discussing, agreeing and recording as key activities in the effectiveness of the group work.

- 8.9 Identifying the benefits of group work and how it can be supported by the use of ICT was also feature of *Kennewell et al's* project. This project found that ICT can help pupils engage with the lesson content, though teachers have to be vigilant that pupils do not only improve ICT related skills but also achieve the appropriate learning objectives.

9 Improving Teaching

- 9.1 Very little of what has gone before in the previous two sections, whether relating to learners' learning outcomes, opportunities or motivation, can be successfully divorced from the requirement for teachers to be fully engaged in and facilitative of the learning process. According to the *McKinsey Report (2007)*¹⁰ getting the quality of teaching right is a major step in improving learning outcomes and performance; and TLRP has provided a number of significant insights into how teaching can be made more effective. In terms of the Department's priorities it is implicit in PSA 19: 'Raising standards in our schools' and comes under the specific area of developing the education workforce. The Chief Inspector, Stanley Goudie, has also recently emphasised teacher professional development as an inadequately addressed and pressing need.

'... There is proportionately insufficient investment in the development of the teachers and the educational workforce compared with that invested in changing structures and systems. The need to ensure a range of continuing professional development for those who lead, manage and teach has never been greater. There is a need for more multi-disciplinary, continuing professional development for the staff working across the education, training and youth services to provide more adequate and holistic support for our children and young people...' Chief Inspector's Report (2009). p67¹¹

- 9.2 It is clear that while Northern Ireland has a very high calibre of teachers there is always room for improvement and, in particular, continuous improvement on a reflective practice basis (GTCNI¹²). Therefore any insight that TLRP can offer in this area will have immediate importance for Northern Ireland. The following summary highlights projects that have indicated how teaching may be improved in a number of contexts, as well as what constitutes good professional development for teachers.

¹⁰ How the World's Best-Performing School Systems Come Out on Top, McKinsey and Company, 2007, http://www.mckinsey.com/App_Media/Reports/SSO/Worlds_School_Systems_Final.pdf

¹¹ Chief Inspector's Report, 2006-2008 The Education and Training Inspectorate (2009) http://www.etini.gov.uk/ci_report.pdf

¹² Teaching: The Reflective Profession, General Teaching Council for Northern Ireland, <http://gtcni.openrepository.com/gtcni/handle/2428/12403>

- 9.3 The TLRP 'associate' project, '*Variations in Teachers' Work, Lives, and their Effects on Pupils, VITAE*' involved 300 teachers and considered aspects of teacher/teaching quality and effectiveness. The project researchers (*Day et al*) found that committed and resilient teachers were more likely than their less committed peers to experience wellbeing and job satisfaction. Their pupils are also more likely to succeed. However, sustaining and enhancing commitment and resilience is a key quality and retention issue.
- 9.4 *Millar et al* found that science teachers' success in lessons depended on their teaching methods and, particularly, on their ability to generate dialogue in the classroom. In conjunction with the project participants, the researchers developed teaching materials, based on research evidence about how best to teach aspects of science that can enhance pupils' learning. They also found that when research is used by teachers in developing such teaching materials, both teaching practices and pupil learning are enhanced.
- 9.5 Professional development for teachers is important in many contexts and, as mentioned above, *Plowman and Stephen* found it necessary to help practitioners use techniques, such as guided interaction, when introducing pre-school children to ICT. ICT in teaching was examined by *Kennewell et al*, who concluded that effectiveness was increased when it was used to promote reflection and dialogic interaction. This project also reflected on the use of interactive white boards and the need for teachers to consider how they can support their teaching effectively. As mentioned above, the projects on literacy and numeracy by *Nunes et al* found that techniques such as teaching about morphemes and their role in spelling can help children's difficulties with learning how to spell many words.
- 9.6 New technologies and their potential to enhance learning were the focus of a TLRP research project by *Sutherland et al*, which looked into how pupils could build on their 'out-of-school' learning, such as ICT skills developed at home, to enhance their learning at school. The project distinguished between 'idiosyncratic' and 'intended' learning – the one arising from personal engagement (perhaps for extended periods of time); the other often requiring input and guidance by a teacher. They concluded that the teacher's input remains central to the successful use of ICT in learning and improved teaching with ICT must be the subject of appropriate professional development. *Kennewell et al*'s ICT-related project also point to the importance of facilitating reflective dialogue between the teacher and an observer - to discuss and reflect on their teaching.

- 9.7 Two TLRP projects (*Ainscow et al* and *Davies et al*) looked into how to engage teachers best in more inclusive practices. Both projects reached the conclusion that teachers have to challenge their pre-conceptions and any misplaced assumptions regarding their pupils' abilities and what is the best way to teach them. Such assumptions were found to cause barriers to pupils' learning. Engaging with research evidence about their pupils' experiences and their own practice was also found to help teachers become more inclusive.

10 Implications for Policy and Practice

- 10.1 There are implications for policy and practice throughout the TLRP research as a whole. For example, *James et al* suggest that policy contexts can act as barriers to innovation or can encourage changes in the schools. *Rudduck et al* claimed that innovative teaching practices at schools could form the basis for policy development.

The following digest of implications from the TLRP projects (drawn largely from James and Pollard, 2008)¹³ is set out under four categories: Improving Learning Outcomes and Raising Standards, Improving Learning Opportunities and Motivation, Improving Teaching, and Policy. It is acknowledged that the boundaries between them are not absolute and that many issues overlap.

¹³ Learning and Teaching in Primary Schools: Insights from TLRP, James, M. and Pollard, A. (2008) Research Report 2/4, The Primary Review ... Children, Their World, Their Education, Esmee Fairburn & University of Cambridge, <http://gtcni.openrepository.com/gtcni/handle/2428/26633>

10.2 Improving Learning Outcomes and Raising Standards

<p><i>Nunes et al:</i></p>	<ul style="list-style-type: none"> • Teachers should be made aware of the role of morphemes in spelling and that systematic teaching about morphemes should be introduced into primary schools. • Teaching pupils about fractions should include a focus on logical relations, but this should build on pupils' intuitions. • Teacher education needs to help teachers become aware of pupils' intuitive understanding of the logic of fractions and the situations in which they are most easily understood.
<p><i>Howe et al:</i></p>	<ul style="list-style-type: none"> • Intensive quantities, and the use of fractions to name them, should be explicitly taught in primary schools because pupils cannot be expected to generalise their knowledge from extensive contexts to intensive ones. • Short teaching programmes have been found to be effective in helping pupils to assimilate the relational concepts of intensive quantities.
<p><i>Kennewell et al:</i></p>	<ul style="list-style-type: none"> • Learning can be improved if resources and professional development encourage teachers to use ICT to support dialogic interaction, including forms of talk in group work.

10.3 Improving Learning Opportunities and Motivation

<p><i>Blatchford et al:</i></p>	<ul style="list-style-type: none"> • Group work can be made to work with benefits to attainment, motivation and behaviour. • Group work skills need to be approached developmentally: social skills first, then communication skills, then problem-solving.
<p><i>McGuinness and Sheehy:</i></p>	<ul style="list-style-type: none"> • Developing pupils' capacity to learn takes time and special attention needs to be paid to those with poorer cognitive and social resources. This in turn requires teachers to develop both their practices and their beliefs about learners.

<i>Plowman and Stephen:</i>	<ul style="list-style-type: none"> • Pre-school settings should broaden their focus beyond computers to other forms of ICT and be aware that children develop competence with ICTs at home.
<i>Hughes et al and Brookes</i>	<ul style="list-style-type: none"> • Attention needs to be given to the creation of positive classroom climates characterised by respect, trust and mutual exchange of dignity. • The most fundamental form of education – the process of becoming a person – requires as much careful consideration as the acquisition of knowledge and skills. • Personalised provision in schools should build on an understanding of the development of these strategic biographies, and respond to the social, cultural and material experiences of different groups of learners

10.4 Improving Teaching

<i>Sutherland et al:</i>	<ul style="list-style-type: none"> • Professional development is crucial so that teachers can put ICT to good pedagogical use in the classroom, encouraging pupils to build on their out-of-school learning.
<i>Plowman and Stephen:</i>	<ul style="list-style-type: none"> • Professional development of pre-school practitioners is needed to develop a responsive, reflective teaching approach.
<i>Kennewell et al:</i>	<ul style="list-style-type: none"> • Teachers benefit from mentor support to explore resources, gain skills, develop the confidence to intervene, and to reflect on their teaching with ICT. • If interactive whiteboards are to achieve the claims made for them, there may need to be a new wave of professional development which takes account of the need to embed their affordances in teachers' pedagogical reasoning.
<i>Millar et al:</i>	<ul style="list-style-type: none"> • Research is more likely to influence practice in science teaching where there is a professional culture which encourages awareness of research and experimentation with practice. • Professional networks, which bring researchers and teachers together,

	can facilitate teachers' awareness of research and its likelihood to influence their practice.
<i>Blatchford et al:</i>	<ul style="list-style-type: none"> • Providing teachers with practical 'relational' strategies based on principles provides a successful approach to raising standards and improving behaviour.
<i>Ainscow et al:</i>	<ul style="list-style-type: none"> • Teachers need to question their accepted ways of working.
<i>James et al:</i>	<ul style="list-style-type: none"> • School leaders need to create the structures and cultures that support collaborative classroom enquiry and the sharing of innovations in classroom practice.

10.5 Policy

<i>Hughes et al:</i>	<ul style="list-style-type: none"> • Policy-makers and school leaders should pay more attention to home school knowledge exchange as a means of improving relationships and raising standards.
<i>Day et al:</i>	<ul style="list-style-type: none"> • Headteachers, national associations and policy makers need to consider the connections between commitment, resilience and effectiveness and develop strategies for meeting the needs of teachers in different phases of their professional lives, and in different communities.

11 General Principles for Effective Pedagogy

It is not unreasonable to assume that learning will be best served if teaching is of the highest quality. To this end it is incumbent on all partners in the education system to ensure they are striving to recruit the best teachers, to provide these teachers with the best training, and to expect them to deliver the highest quality of teaching. To this end the TLRP provides an overarching guide as to what constitutes good teaching. The programme focused on research into how teaching and learning across the various education phases and sectors can be improved. Its most widely cited output is its set of ten research-informed principles¹⁴ defining ‘effective pedagogy’. The original 2006 set of principles¹⁵ was amended as the programme was coming to an end (2009) and these are presented here in full as the conclusion of the report.

The essential argument of this conclusion is that improving pedagogy is a key to improving opportunities to learn and increasing learners’ motivation, and ultimately to raising standards and improving outcomes. The ten principles for effective pedagogy are:

Effective pedagogy ...

11.1 ... equips learners for life in its broadest sense.

Learning should aim to help individuals and groups to develop the intellectual, personal and social resources that will enable them to participate as active citizens, contribute to economic development and flourish as individuals in a diverse and changing society. This means adopting a broad conception of worthwhile learning outcomes and taking seriously issues of equity and social justice for all.

11.2 ... engages with valued forms of knowledge.

Pedagogy should engage learners with the big ideas, key skills and processes, modes of discourse, ways of thinking and practising, attitudes and relationships, which are the most valued learning processes and outcomes in particular contexts. They need to understand what constitutes quality, standards and expertise in different settings.

11.3 ... recognises the importance of prior experience and learning.

¹⁴ The relevant research evidence for the principles is provided in: *Improving Teaching and Learning in Schools: a Commentary by the Teaching and Learning Research Programme*. James, M. and Pollard, A. (Eds) (2006) Swindon: ESRC

¹⁵ These principles are the most recent version of the ‘Evidence-Informed Principles for Teaching and Learning’ (James and Pollard, 2006 above), which have been amended to focus more on general pedagogical issues and both “to broaden the conception of what is to be learned, beyond the notions of curricula and subjects associated with schools” and to give “more prominence to the importance of learning relationships which are crucial in all sectors”
<http://www.tlrp.org/docs/TLRP10Principles.pdf>

Pedagogy should take account of what the learner knows already in order for them, and those who support their learning, to plan their next steps. This includes building on prior learning but also taking account of the personal and cultural experiences of different groups of learners.

11.4 ... requires learning to be scaffolded.

Teachers, trainers and all those, including peers, who support the learning of others, should provide activities, cultures and structures of intellectual, social and emotional support to help learners to move forward in their learning. When these supports are removed the learning needs to be secure.

11.5 ... needs assessment to be congruent with learning.

Assessment should be designed and implemented with the goal of achieving maximum validity both in terms of learning outcomes and learning processes. It should help to advance learning as well as determine whether learning has occurred.

11.6 ... promotes the active engagement of the learner.

A chief goal of learning should be the promotion of learners' independence and autonomy. This involves acquiring a repertoire of learning strategies and practices, developing positive learning dispositions, and having the will and confidence to become agents in their own learning.

11.7 ... fosters both individual and social processes and outcomes.

Learners should be encouraged and helped to build relationships and communication with others for learning purposes, in order to assist the mutual construction of knowledge and enhance the achievements of individuals and groups. Consulting learners about their learning and giving them a voice is both an expectation and a right.

11.8 ... recognises the significance of informal learning.

Informal learning, such as learning out of school or away from the workplace, should be recognised as at least as significant as formal learning and should therefore be valued and appropriately utilised in formal processes.

11.9 ... depends on the learning of all those who support the learning of others.

The need for lecturers, teachers, trainers and co-workers to learn continuously in order to develop their knowledge and skill, and adapt and develop their roles, especially through practice-based inquiry, should be recognised and supported.

11.10 ... demands consistent policy frameworks with support for learning as their primary focus.

Organisational and system level policies need to recognise the fundamental importance of continual learning - for individual, team, organisational and system success - and be designed to create effective learning environments for all learners.

Appendix 1: Lists of Relevant Projects Hyperlinked to Internet URLs

Referenced TLRP Projects (Alphabetic)

- Ainscow, Booth & Dyson, [*Understanding and Developing Inclusive Practices in Schools*](#)
- Blatchford, Galton & Kutnick, [*Improving the Effectiveness of Pupil Groups in Classrooms*](#)
- Brookes, [*Provision for Gifted and Talented Pupils at Secondary Transfer*](#)
- Christie, Topping, Tolmie, Livingston & Howe, [*Supporting Group-work in Scottish Schools*](#)
- Davies, Howes, Carroll & Farrell, [*Facilitating teacher engagement in more inclusive practice*](#)
- Day, Stobart, Sammons, Kington & Gu, [*Variations in Teachers' Work, Lives, and their Effects on Pupils \(VITAE\)*](#)
- Gallagher, Daniels & Kilpatrick, [*Learning in and for Interagency Working: multiagency work in Northern Ireland*](#)
- Howe, Nunes & Bryant, [*5-14 Mathematics in Scotland: The Relevance of Intensive Quantities*](#)
- Hughes, Pollard, Andrews, Feiler, Greenhough, Johnson, McNess, Osborn, Salway, Scanlan, Stinchcombe, Winter & Wan Ching Yee, [*Home-School Knowledge Exchange in Primary Education*](#)
- James, McCormick & Marshall, Learning, [*How to Learn, in Classrooms, Schools and Networks*](#)
- Kennewell, Thomas, Thorpe, Parkinson, Beauchamp, Tanner, Jones & Norman, [*ICT and InterActive Teaching*](#)
- Leitch, Lundy, Clough, Gardner, Galanouli, Mitchell & Odena, [*Consulting Pupils on the Assessment of their Learning \(CPAL\)*](#)
- McGuinness & Sheehy, [*ACTS II: Sustainable Thinking Classrooms*](#)
- Millar, Leach, Osborne & Ratcliffe, [*Towards Evidence-Based Practice in Science Education*](#)
- Nunes, Bryant & Hurry, [*The Role of Awareness in the Teaching and Learning of Literacy and Numeracy in Key Stage 2*](#)
- Plowman & Stephen, [*INTERPLAY: Play, Learning and ICT in Pre-school Education*](#)
- Rudduck, Arnot, Fielding, MacBeath, McIntyre, Myers, Reay & Flutter, [*Consulting Pupils about Teaching and Learning: Process, Impact and Outcomes*](#)
- Smith, Moran, McCully & Clarke, [*A Values-based Approach to Teacher Education*](#)
- Sutherland, Robertson & John, [*InterActive Education: Teaching and Learning in the Information Age*](#)
- Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, [*Effective Pre-School and Primary Education \(EPPE 3-11\)*](#)

Referenced TLRP Projects (Sector)

Early Years and Foundation

Plowman & Stephen, *INTERPLAY: Play, Learning and ICT in Pre-school Education*

Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, *Effective Pre-School and Primary Education (EPPE 3-11)*

Primary Education

Brookes, *Provision for Gifted and Talented Pupils at Secondary Transfer*

Christie, Topping, Tolmie, Livingston & Howe, *Supporting Group-work in Scottish Schools*

Hughes, Pollard, Andrews, Feiler, Greenhough, Johnson, McNess, Osborn, Salway, Scanlan, Stinchcombe, Winter & Wan Ching Yee, *Home-School Knowledge Exchange in Primary Education*

McGuinness & Sheehy, *ACTS II: Sustainable Thinking Classrooms*

Nunes, Bryant & Hurry, *The Role of Awareness in the Teaching and Learning of Literacy and Numeracy in Key Stage 2*

Secondary Education

Davies, Howes, Carroll & Farrell, *Facilitating teacher engagement in more inclusive practice*

Millar, Leach, Osborne & Ratcliffe, *Towards Evidence-Based Practice in Science Education*

Sutherland, Robertson & John, *InterActive Education: Teaching and Learning in the Information Age*

Across School Phases

Ainscow, Booth & Dyson, *Understanding and Developing Inclusive Practices in Schools*

Blatchford, Galton & Kutnick, *Improving the Effectiveness of Pupil Groups in Classrooms*

Gallagher, Daniels & Kilpatrick, *Learning in and for Interagency Working: multiagency work in Northern Ireland*

Day, Stobart, Sammons, Kington & Gu, *Variations in Teachers' Work, Lives, and their Effects on Pupils (VITAE)*

Howe, Nunes & Bryant, *5-14 Mathematics in Scotland: The Relevance of Intensive Quantities*

James, McCormick & Marshall, *Learning How to Learn, in Classrooms, Schools and Networks*

Kennewell, Thomas, Thorpe, Parkinson, Beauchamp, Tanner, Jones & Norman, *ICT and InterActive Teaching*

Leitch, Lundy, Clough, Gardner, Galanouli, Mitchell & Odena, *Consulting Pupils on the Assessment of their Learning (CPAL)*

Rudduck, Arnot, Fielding, MacBeath, McIntyre, Myers, Reay & Flutter, *Consulting Pupils about Teaching and Learning: Process, Impact and Outcomes*

Smith, Moran, McCully & Clarke, *A Values-based Approach to Teacher Education*

Referenced TLRP Projects (Phase)

Phase I (networks)

Ainscow, Booth & Dyson, *Understanding and Developing Inclusive Practices in Schools*
Millar, Leach, Osborne & Ratcliffe, *Towards Evidence-Based Practice in Science Education*
Rudduck, Arnot, Fielding, MacBeath, McIntyre, Myers, Reay & Flutter, *Consulting Pupils about Teaching and Learning: Process, Impact and Outcomes*

Phase II

Blatchford, Galton & Kutnick, *Improving the Effectiveness of Pupil Groups in Classrooms*
Hughes, Pollard, Andrews, Feiler, Greenhough, Johnson, McNess, Osborn, Salway, James, McCormick & Marshall, *Learning How to Learn in Classrooms, Schools and Networks*
Nunes, Bryant & Hurry, *The Role of Awareness in the Teaching and Learning of Literacy and Numeracy in Key Stage 2*
Scanlan, Stinchcombe, Winter & Wan Ching Yee, *Home-School Knowledge Exchange in Primary Education*
Sutherland, Robertson & John, *InterActive Education: Teaching and Learning in the Information Age*

Scottish Extension

Christie, Topping, Tolmie, Livingston & Howe, *Supporting Group-work in Scottish Schools*
Howe, Nunes & Bryant, *5-14 Mathematics in Scotland: The Relevance of Intensive Quantities*
Plowman & Stephen, *INTERPLAY: Play, Learning and ICT in Pre-school Education*

Welsh Extension

Davies, Howes, Carroll & Farrell, *Facilitating teacher engagement in more inclusive practice*
Kennewell, Thomas, Thorpe, Parkinson, Beauchamp, Tanner, Jones & Norman, *ICT and InterActive Teaching*

Northern Ireland Extension

Gallagher, Daniels & Kilpatrick, *Learning in and for Interagency Working: multiagency work in Northern Ireland*
Leitch, Lundy, Clough, Gardner, Galanouli, Mitchell & Odena, *Consulting Pupils on the Assessment of their Learning (CPAL)*
McGuinness & Sheehy, *ACTS II: Sustainable Thinking Classrooms*
Smith, Moran, McCully & Clarke, *A Values-based Approach to Teacher Education*

Associated Projects

Brookes, *Provision for Gifted and Talented Pupils at Secondary Transfer*
Day, Stobart, Sammons, Kington & Gu, *Variations in Teachers' Work, Lives, and their Effects on Pupils (VITAE)*
Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, *Effective Pre-School and Primary Education (EPPE 3-11)*

Appendix 2: Listing of Relevant Projects Hyperlinked to Project Summaries

- Ainscow, Booth & Dyson, *Understanding and Developing Inclusive Practices in Schools*
- Blatchford, Galton & Kutnick, *Improving the Effectiveness of Pupil Groups in Classrooms*
- Brookes, *Provision for Gifted and Talented Pupils at Secondary Transfer*
- Christie, Topping, Tolmie, Livingston & Howe, *Supporting Group-work in Scottish Schools*
- Davies, Howes, Carroll & Farrell, *Facilitating teacher engagement in more inclusive practice*
- Day, Stobart, Sammons, Kington & Gu, *Variations in Teachers' Work, Lives, and their Effects on Pupils (VITAE)*
- Gallagher, Daniels & Kilpatrick, *Learning in and for Interagency Working: multiagency work in Northern Ireland*
- Howe, Nunes & Bryant, *5-14 Mathematics in Scotland: The Relevance of Intensive Quantities*
- Hughes, Pollard, Andrews, Feiler, Greenhough, Johnson, McNess, Osborn, Salway, Scanlan, Stinchcombe, Winter & Wan Ching Yee, *Home-School Knowledge Exchange in Primary Education*
- James, McCormick & Marshall, *Learning How to Learn, in Classrooms, Schools and Networks*
- Kennewell, Thomas, Thorpe, Parkinson, Beauchamp, Tanner, Jones & Norman, *ICT and InterActive Teaching*
- Leitch, Lundy, Clough, Gardner, Galanouli, Mitchell & Odena, *Consulting Pupils on the Assessment of their Learning (CPAL)*
- Millar, Leach, Osborne & Ratcliffe, *Towards Evidence-Based Practice in Science Education*
- McGuinness & Sheehy, *ACTS II: Sustainable Thinking Classrooms*
- Nunes, Bryant & Hurry, *The Role of Awareness in the Teaching and Learning of Literacy and Numeracy in Key Stage 2*
- Plowman & Stephen, *INTERPLAY: Play, Learning and ICT in Pre-school Education*
- Rudduck, Arnot, Fielding, MacBeath, McIntyre, Myers, Reay & Flutter, *Consulting Pupils about Teaching and Learning: Process, Impact and Outcomes*
- Smith, Moran, McCully & Clarke, *A Values-based Approach to Teacher Education*
- Sutherland, Robertson & John, *InterActive Education: Teaching and Learning in the Information Age*
- Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, *Effective Pre-School and Primary Education (EPPE 3-11)*

Understanding and Developing Inclusive Practices in Schools (2000-2003)

Prof Mel Ainscow (University of Manchester)

Prof Tony Booth (Canterbury Christ Church College)

Prof Alan Dyson (Newcastle Upon Tyne)

A Network of researchers from three universities and 24 schools in three LEAs used an action research methodology to facilitate the development of practices to increase the participation and achievement of often marginalised learners. This included a range of groups whose difficulties within the education system are usually treated separately in respect of both policy and research.

The Network worked with the notion of inclusion to address a range of issues relevant in particular schools, around these questions:

- what barriers to participation and learning are experienced by pupils?
- what can be changed to help overcome these barriers?
- do improved practices facilitate improved learning outcomes?
- how can such practices be encouraged and sustained in LEAs and schools?

The main findings and implications of this project are:

Findings	Implications
Many significant barriers to the participation and learning of pupils stem from teachers' misplaced assumptions about what their pupils can do and how best to teach them.	Overcoming barriers requires more than a different way of working – individuals and groups need to question their accepted ways of thinking, and this takes time.
Interruptions to established understandings and practices can be fostered when groups of staff engage with evidence about pupils' experience of school, and about their own practice.	Establishing a focus for school enquiry on a specific issue of genuine concern to many staff is often more productive than imposing whole school change.
For many pupils, it is not possible to achieve improved outcomes simply by teaching the curriculum harder and longer. Instead, teachers have to strengthen the factors that underpin learning, such as pupils' pleasure in learning and their self esteem.	Addressing both underachievement and inclusion requires that the national focus on highly measurable outcomes of school be broadened to include these underlying factors.

More information is available on the project's website at <http://www.tlrp.org/proj/phase1/phase1asept.html>

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Towards Evidence based Practice in Science Education (2000-2003)

Prof Robin Millar (University of York)
 Prof John Leach (University of Leeds)
 Prof Jonathan Osborne (Kings College London) and
 Dr Mary Ratcliffe (University of Southampton)

The aim of the EPSE Research Network was to explore ways in which teachers, and others involved in science education (e.g. textbook writers and examiners), can be encouraged to make greater use of research to enhance pupils' learning in science. In three inter-related projects, they worked with groups of teachers to develop new materials and approaches and to evaluate these in the classroom.

The findings and implications of this work are summarised below:

Findings	Implications
Science teachers' practice and students' learning can be significantly enhanced by providing teaching materials that embody research insights.	If research findings are 'translated' into teaching materials and methods, the scale of their impact is greatly increased.
Pupils following evidence-based teaching sequences are no better than others at questions requiring factual recall.	Science testing regimes that focus heavily on factual recall may over-estimate pupils' understanding of key concepts.
Carefully-designed probes, based on research, can provide good information on students' understanding of key ideas, and inform subsequent action.	More tools which quickly 'measure' understanding of key ideas should be developed.

More information is available on the project's website at
<http://www.tlrp.org/proj/phase1/phase1bsept.html>

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Consulting Pupils about Teaching and Learning (2000-2003)

Prof Jean Rudduck (Homerton College, University of Cambridge)
 Dr Madeleine Arnot (University of Cambridge)
 Dr Michael Fielding (University of Sussex)
 Prof John MacBeath (University of Cambridge)
 Prof Donald McIntyre (University of Cambridge)
 Prof Kate Myers (Homerton College, University of Cambridge)
 Dr Diane Reay (Kings College London)
 Ms Julia Flutter (Homerton College, University of Cambridge) - linked Career Development Associate

From an early age young people are capable of insightful and constructive analysis of their experiences of learning in school and they have a contribution to make to the development of strategies for improving learning and raising achievement.

The Network sought to open up, with teachers, new dimensions of classroom practice where they think pupil perspectives can make a difference, and to disseminate good practice. A Network membership of interested teachers and researchers was built up.

The main findings and implications of this network’s work are summarized below:

Findings	Implications
Pupils who were consulted became more engaged with learning.	Pupils who feel they matter in school are more likely to commit themselves to learning.
Teachers became more responsive to children and gave them more responsibility.	Pupils’ accounts of what helps them to learn can provide a practical agenda for teaching.
School policy was strengthened by including pupils in substantive ways.	Examples of practice and pupil testimony can feed powerfully into whole school policy.
National policy can be enhanced through new insights and practical tools for school improvement.	‘Leading edge’ school practice can provide the basis for inquiry and policy development.

A linked Career Development Associate, Julia Flutter, is analysing the growth of interest in pupil voice and examining the different constructions of childhood and youth it represents. This study is integrated with the Network but is also building a coherent analysis of the growth of interest in ‘pupil voice’ by charting and explaining its development in recent years in the UK and elsewhere.

More information is available on the project’s website at <http://www.tlrp.org/proj/phase1/phase1dsept.html>

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Improving Effectiveness of Pupil Groups in Classrooms (2001-2004)

Prof. Peter Blatchford (Institute of Education, London)
 Prof. Maurice Galton (Homerton College, Cambridge) and
 Prof. Peter Kutnick (University of Brighton)

This project developed and evaluated effective group-work at the primary and early secondary school level. The project aimed to enhance the learning/achievement potential of pupils (at Key Stages 1-3) working in classroom groups, by actively involving teachers in three areas in a programme designed to raise levels of group-work during typical classroom learning activities. The research first evaluated the effect of training pupils in group-work skills, and the effect of different group sizes and different task demands on the quality of group-work.

The results should allow teachers not only to adopt new approaches based on sound evidence of their effectiveness, but also allow them to consolidate and improve current uses of grouping. The findings will have an important contribution to make in a country-wide bid to raise standards and to reduce pupil disengagement. By working closely with practitioners to identify the conditions in which such effects can be maximised, the findings should have an impact on future government policy.

Findings	Implications
Group work can have a stronger influence on academic progress than other forms of teaching and learning.	We need to rethink pedagogical theories which favour teacher-led activities and individual work.
Pupils' behaviour improves because they spend more time on task and engage in higher level discussions.	Given space and time to develop pupils' group working skills, teachers can transform the learning environment.
Relationships improve between teachers and pupils and among pupils themselves.	This suggests an alternative to current approaches to school discipline which aim to control rather than eliminate the problem.

More information is available on the project's website at
<http://www.tlrp.org/proj/phase11/phase2a.html>

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Provision for Gifted and Talented Pupils at Secondary Transfer

Jennifer Brookes (Henleaze Junior School Bristol)

This training fellowship study explored how the needs of pupils were accommodated when they transferred from primary to secondary school to ensure levels of attainment were maintained. This necessitated exploring the influence of home-school contact, school provision, and local education authorities' policies upon their progress. Analysed results were translated into practical suggestions for policy development aimed at enhancing learner achievement.

More information is available on the project's website at <http://www.tlrp.org/proj/rtfbrookes.html>

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Home-School Knowledge Exchange and Transformation in Primary Education (2001-2004)

Martin Hughes (project director), Jane Andrews, Anthony Feiler, Pamela Greenhough, David Johnson, Elizabeth McNess, Marilyn Osborn, Andrew Pollard, Mary Scanlan, Leida Salway, Vicki Stinchcombe, Jan Winter, Wan Ching Yee.

Children live and learn in two different worlds, home and school. However these worlds are often kept separate from each other. In the Home School Knowledge Exchange (HSKE) project we wanted to help teachers, parents and children share their different knowledge of these worlds. We hypothesised that doing this successfully would enhance children’s learning.

The project had three main strands, concerned respectively with:

- Literacy at Key Stage 1
- Numeracy at Key Stage 2
- Transfer from primary to secondary school

Within each strand the project took place in four action primary schools (plus four action secondary schools in the transfer strand) in the cities of Bristol and Cardiff. The schools reflected the social and cultural diversity to be found in these two cities. In these schools we developed, implemented and evaluated HSKE activities which supported the exchange of knowledge between home and school. Some of these activities focused on the exchange of knowledge from school-to-home, and aimed to make parents more knowledgeable about what was happening in their children’s schools. Other activities focused on the exchange of knowledge from home-to-school, and aimed to help teachers understand more about their children’s out-of-school lives. Children attending similar schools but which did not engage in HSKE activities acted as a comparison group.

Findings	Implications
There are substantial “funds of knowledge” in homes and communities which can be used to support children’s learning.	Schools need to recognise these funds of knowledge and make them more visible in the classroom and the school.
Simple home-school knowledge exchange activities can have a positive impact on teachers, parents and children, and on attainment in literacy and mathematics.	Policy-makers and school leaders should give greater priority to knowledge-exchange, to help improve relationships and raise attainment in literacy and mathematics.
Students who attend a school where HSKE activities have taken place make significantly greater progress in literacy from Y6 to Y7, and have better attitudes to learning.	Information-providing activities can help ease children’s anxieties about transfer and help teachers gain a fuller picture of new students.

More information is available on the project’s website at <http://www.tlrp.org/proj/phase11/phase2e.html>

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Learning in and for Interagency Working: multiagency work in Northern Ireland (2005 - 2007)

Prof. Tony Gallagher (Queen’s University, Belfast)
 Prof. Harry Daniels (University of Birmingham)
 Dr. Rosemary Kilpatrick (Queen’s University, Belfast)

The aim of this project was to enhance the interaction between agencies dealing with young people at risk of exclusion from school. It built upon and extended an existing TLRP project on interagency working based in the University of Birmingham. The rationale for a Northern Ireland extension was that problems in interagency working are as relevant to Northern Ireland as other parts of the United Kingdom and that it provides a different context in terms of the range and responsibilities of agencies, and greater community sector involvement.

The project was based on the theoretical framework provided by Activity Theory which was extended and developed by the Birmingham team. This framework highlights the distinctive conditions of interagency working and the need to develop processes of expansive learning in conditions of co-configuration.

Findings	Implications
Effective collaboration is strengthened by relationships of trust among the key partners. These enhance commitment and permit risk-taking.	Collaborative working will be strengthened if attention is given to human factors and relationship-building.
Commitment to collaborative working is enhanced and deepened when it is seen to lead to tangible outcomes.	Sustainable collaboration depends on the identification of meaningful activities with discernible outcomes.
Effective collaboration is related to the autonomy available to key partners and the role of external bodies. Rules set outside this context may constrain effective collaboration.	Processes should be established to allow for the critical examination of rules and the influence of external agencies.

More information is available on the project’s website at <http://www.tlrp.org/proj/gallagher.html>

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Learning How to Learn - In Classrooms, Schools and Networks (2001-2005)

Prof. Mary James (Institute of Education)
 Prof. Robert McCormick (Open University)
 Dr. Bethan Marshall (King's College London)

This research and development project aimed to advance both understanding and practice of learning how to learn in classrooms, schools and networks. More specifically it:

1. Developed and extended recent work assessment for learning (AfL) into a model of learning how to learn for both teachers and pupils, emphasising how the concept of learning how to learn focuses on learning practices which are integrally bound up with learning in subject domains.
2. Investigated what teachers can do to help pupils to learn how to learn, demonstrating the importance for teachers' professional learning and practice of an understanding of the principles that underpin AfL.
3. Investigated the characteristics of schools in which teachers successfully create and manage the knowledge and skills of learning how to learn, especially leadership support for classroom inquiry.
4. Investigated systematically, through network mapping, how educational networks can support the creation, management and transfer of the knowledge and skills of learning how to learn.
5. Attempted to develop a generic model of innovation in teaching and learning that integrates work in classrooms, schools and networks, showing the parallel processes involved in learning how to learn at all three levels.

Findings	Implications
Assessment for learning helps teachers promote learning how to learn in ways which align with their own values. But it is difficult to shift from reliance on specific techniques to practices based on deep principles.	Over time, teachers need to re-evaluate their beliefs about learning, the way they structure tasks, and their classroom roles and relationships.
Classroom-focused inquiry by teachers is a key to promoting learner autonomy. Schools that embed LHTL make support for professional learning a priority.	School leaders need to create structures and cultures that focus on learning and that support teachers in sharing and evaluating innovations.
The policy context can act as a powerful facilitator or barrier to innovation.	A change in the discourse across agencies concerned with schools is needed, focusing on broad support, not prescription, to encourage the transformation of schools into learning organisations.

More information is available on the project's website at <http://www.tlrp.org/proj/phase11/phase2f.html>

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ACTS II: Sustainable Thinking Classrooms (2001-2004)

Prof Carol McGuinness, (Queen's University, Belfast)

Prof Noel Sheehy (Queen's University, Belfast)

This project created and evaluated practical teaching strategies to improve classroom learning in primary schools, enhancing pupils' thinking skills across the curriculum.

The research examined the role of metacognition in teaching thinking skills at Key Stage 2. "Metacognition" refers to people's knowledge about thinking which helps them to manage effectively their thought processes in learning and problem solving. Classroom dialogue is thought to play a key role teaching this form of intellectual management. This project focussed on assessing and promoting appropriate dialogue, analysing the critical features of this approach in terms of improving learning outcomes for both pupils and teachers, and models of teacher support which can sustain innovation in this regard.

Three interrelated studies were conducted. The first developed and evaluated a framework for analysing metacognitive features of teachers' and pupils' classroom dialogue. The second evaluated an intervention process involving the promotion of appropriate teaching; the effects on both teachers' and pupils' learning will be appraised. The third study developed long term strategies for sustaining thinking classrooms with a focus on metacognitive activity.

Findings	Implications
Teachers were able to design and teach lessons where a curriculum topic and a specific thinking pattern were taught together.	This approach can be scaled up across the primary curriculum to allow an explicit emphasis on thinking to be integrated into lessons.
Video analyses of lessons identified aspects of classroom talk and interactions that helped develop children's thinking strategies.	Thinking lessons must be designed alongside teaching methods that help develop children's cognitive abilities and their interaction with each other, and must be underpinned by teachers' own learning.
Participating in ACTS led to improvements in children's learning, particularly in their use of metacognitive strategies. But not all children made the same gains.	Developing children's capacity to become more skilful thinkers needs careful support. Particular attention should be paid to children who have poorer cognitive and social resources.

More information is available on the project's website at <http://www.tlrp.org/proj/phase11/phase2g.html>

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The Role of Awareness in the Teaching and Learning of Literacy and Numeracy in Key Stage 2 (2001-2004)

Prof. Terezinha Nunes (Oxford Brookes University)

Prof. Peter Bryant (Oxford University)

Dr. Jane Hurry (Institute of Education, University of London)

It is commonly recognised that mastery of literacy and numeracy involves both implicit and explicit knowledge. For example, we have only implicit knowledge of many spelling rules: we write correctly many words whose orthography we could not explain. It is probably necessary for much of our knowledge to be used implicitly - if we had to think about spelling rules when we write, we would probably have difficulty in composing texts. What is not known is how explicit and implicit knowledge are created through teaching.

This research project investigates the connection between different ways of teaching and the acquisition of implicit and explicit knowledge of literacy and numeracy in primary school. Participants are students, aged from six to nine years, and teachers. Investigations with students determine how different ways of organising teaching affects the acquisition of implicit and explicit knowledge of some concepts and rules in numeracy and literacy. Investigations with teachers analyse the connection between the explicitness of teachers' knowledge, their design of instructions, and their students' performance in literacy and numeracy.

Findings	Implications
Children's difficulties with the spelling of many words can be reduced by making them aware of the morphemes in them.	Primary schools should systematically teach about morphemes and their role in spelling.
Teaching programmes can make a difference to children's understanding of fractions if they start from pupils' intuitions about sharing and establish connections to fractions as numbers.	Initial and continuing teacher education should make teachers aware of pupils' intuitive understanding of the logic of fractions and the situations in which they are understood most easily.
Children's difficulties with intensive quantities are primarily conceptual. Two or three hours of teaching can boost their understanding.	Teaching needs to focus upon problem-solving strategy. No major upheavals to the primary curriculum are needed.

More information is available on the project's website at

<http://www.tlrp.org/proj/phase11/phase2h.html>

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InterActive Education: Teaching and Learning in the Information Age (2000-2004)

Prof. Rosamund Sutherland (University of Bristol)
 Dr Susan Robertson (University of Bristol)
 Dr Peter John (University of Bristol)

The project examines the ways in which new technologies can be used in educational settings to enhance learning. The research centres around the design and evaluation of longitudinal teaching and learning initiatives using new technologies such as computers within the areas of English, Mathematics, Science, Humanities, Modern Foreign Languages and Music. It is also concerned with learning which cuts across traditional subject disciplines and with the contexts and conditions that best support these initiatives. It investigates the relationship between home and school use of new technologies such as computers by learners and teachers.

Findings	Implications
Schools have interpreted national support for ICT in education as being about the acquisition of equipment.	Policy-makers and senior managers should make support for teaching and learning with ICT in schools a priority.
Effective teaching and learning with ICT involves building bridges between 'idiosyncratic' and 'intended' learning and between home and school.	Students should be encouraged to build on their out-of-school learning, whilst also bridging the gap between 'idiosyncratic' and 'intended' learning.
The teacher remains key to the successful use of ICT for learning.	Professional development needs to enable teachers to take risks with ICT and learning.

More information is available on the project's website at

<http://www.interactiveeducation.ac.uk/>

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Supporting Group Work in Scottish Schools: Age and Urban/Rural Divide (2003 - 2004)

Mr Donald Christie (University of Strathclyde)
Professor Keith Topping (University of Dundee)
Dr Andrew Tolmie (University of Dundee)
Dr Kay Livingston (University of Strathclyde)
Professor Christine Howe (University of Strathclyde)

This project was associated with the Phase II SPRinG project, 'Improving Effectiveness of Pupil Groups in Classrooms', which was intended to establish the conditions necessary for group activities to produce definite educational benefits (in terms of learning and quality of classroom relationships), and to design ways of helping teachers to introduce effective group work into their classes at Key Stages 1-3 of the National Curriculum in England. The Scottish Extension project sought to extend such support to science teaching with 10-12 year olds in three types of primary school in Scotland:

1. Small rural schools with composite classes and cross-age group work between familiar peers;
2. Urban schools with composite classes and cross-age group work between less familiar peers;
3. Urban schools with same-age group work.

Interest here centres on the fact that group work between children of different ages tends to lead to older children tutoring the younger ones, rather than to more equal collaboration between them, which is what the programmes of support for teachers are designed to encourage.

The research tested how far the SPRinG support programmes need to be modified to promote group work where there is a different natural dynamic, adding to the understanding of the ways in which different forms of productive group activity can be promoted, and extending the social pedagogy being developed by SPRinG.

More information is available on the project's website at <http://www.groupworkscotland.org/>

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INTERPLAY: Play, Learning and ICT in Pre-School Education (2003 - 2006)

Dr Lydia Plowman (University of Stirling)
Dr Christine Stephen (University of Stirling)

The purpose of this project was to identify ways of enhancing young children's experiences with ICT through guided interaction with practitioners, peers and parents. Although there are many manifestations of ICT in nurseries and playgroups, the focus hitherto has been mainly on desktop computers. Using ICT has been seen as a free play activity in which children decide for themselves when and how to use the computer. The culture of pre-school settings values learning through play and child-initiated activities but, in the context of ICT, our previous research showed that this approach can lead to unproductive interactions. Interplay investigated ways of balancing both child-initiated and adult-led activities to enhance the value of encounters with ICT.

Findings	Implications
Children's encounters with ICT are enhanced when practitioners use guided interaction.	Professional development can help practitioners to make children's encounters with ICT more valuable whilst balancing child-initiated and adult-led activities.
Taking these opportunities can enhance children's dispositions to learn, knowledge of the world and operational skills.	Making the most of ICT requires a responsive, reflective pedagogy which values pleasure and engagement as well as operational skills.
Providing a broad range of technologies promotes more opportunities for learning.	Nurseries should broaden their focus from computers to other forms of ICT, including digital still and video cameras, mobile phones, and electronic keyboards and toys.

More information is available on the project's website at http://www.tlrp.org/proj/phase111/Scot_extc.html

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5-14 Mathematics in Scotland: The Relevance of Intensive Quantities (2003 - 2005)

Professor Christine Howe (Strathclyde University)
 Professor Terezinha Nunes (Oxford Brookes University)
 Professor Peter Bryant (University of Oxford)

This project was concerned with Scottish pupils' mastery of intensive quantities. Intensive quantities (e.g. speed, density) are based on proportional relations between variables. They contrast with extensive quantities (e.g. distance, volume), which are based on part-whole relations. An example will clarify the difference: adding orange squash from one jug that contains 20 decilitres to a second jug that contains 60 decilitres produces 80 decilitres of squash. Volume is an extensive quantity and the whole is the sum of the parts. In contrast, the concentration (density) of the orange squash is an intensive quantity. The concentration is directly proportional to the amount of concentrate, and inversely proportional to the amount of water. If the squash in one jug is 20% concentrate and the squash in the second jug is 60% concentrate, mixing the two does not produce 80% concentration.

The distinction between intensive and extensive quantities has been neglected in the United Kingdom, where teaching focuses on extensive quantities. Scotland is no exception: intensive quantities are not referred to once in the current curriculum guidelines. The starting point for the project was the suspicion that this neglect compromises understanding of quantity. It may also inhibit linkages between mathematics and science, and contribute to documented difficulties with fractions and ratios. As a consequence, the project aimed to assess pupils' current understanding of intensive quantities, and suggest how difficulties might be addressed. To maximise impact, policy makers and practitioners were consulted throughout.

Findings	Implications
Primary school children of all ages have difficulties with intensive quantities, showing that mastery does not develop without teaching.	Intensive quantities need to be taught at the primary school level, in the interests of comprehensive mastery of quantity.
Children's difficulties with intensive quantities are primarily conceptual. Mastery of the arithmetical procedures is less significant.	Teaching needs to focus upon problem-solving strategy.
Primary school pupils of all ages have difficulties using fractions to name intensive quantities	The use of fractions to name intensive quantities needs to be taught. Children will not generalise their knowledge of fractions from extensive contexts to intensive ones.
Two or three hours of teaching can boost children's understanding of intensive quantities and their ability to use fractions in intensive contexts.	Addressing the difficulties with intensive quantities does not require major upheavals to the primary school curriculum.

More information is available on the project's website at
<http://www.strath.ac.uk/Departments/Psychology/DevEd/maths/mathsscotland.htm>

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Facilitating teacher engagement in more inclusive practice (2005 - 2007)

Dr Sue Davies (Trinity College, Carmarthen)
 Dr Andy Howes (University of Manchester)
 Dr Tim Carroll (Cardiff University)
 Prof Peter Farrell (University of Manchester)

This research explored the factors that influence teacher engagement in structured reflective practice towards more inclusive learning for pupils. Teacher engagement here refers to the learning and practice of teachers within the learning environment of their workplace (Hodkinson, 2002). Whilst previous studies have shown that reflective practice generally has a significant influence on school culture and priorities, secondary schools have been identified as environments where teacher engagement in such practice is often problematic (eg Florian and Rouse, 2001). The research aimed to identify structures and organisational arrangements which help and hinder such engagement.

Substantively, a team of teachers was involved in a collaborative action research project in each of the six secondary schools involved, focusing on the link between pupil behaviour and learning. Educational psychologists played a key role in facilitating the action research process alongside departmental or other leaders. They monitored and explored the reasons for changes in teacher engagement in the process, and worked with university research assistants to evaluate the effect of this activity on pupil learning.

Findings	Implications
Significant barriers to pupils' participation and learning stem from teachers' misplaced assumptions about what their pupils can do and how best to teach them.	Overcoming such barriers requires more than a different way of working – individuals and groups need to question their accepted ways of thinking, which takes time.
When groups of staff engage with evidence about pupils' experience of school and their own practice, it can 'interrupt' established ways of working and thinking.	Establishing a focus for school enquiry on a specific issue of genuine concern is often more productive than imposing whole school change.
Many pupils will not do better simply through harder and longer teaching of the curriculum. Teachers have to strengthen factors that underpin learning, such as pleasure in learning and self esteem.	Addressing both underachievement and inclusion requires that the national focus on highly measurable outcomes be broadened to include these factors.

More information is available on the project's website at <http://www.tlrp.org/proj/smbdavies.html>

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ICT and InterActive Teaching (2005 - 2007)

Dr Steve Kennewell (University of Wales)
 Dr Gerran Thomas (University of Wales Aberystwyth)
 Dr Richard Thorpe (University of Wales Aberystwyth)
 Dr John Parkinson (Swansea Institute of Higher Education)
 Dr Gary Beauchamp (University of Wales Swansea)
 Dr Howard Tanner (University of Wales Swansea)
 Ms Sonia Jones (University of Wales Swansea)
 Mr Nigel Norman (University of Wales Swansea)

This research project compared the effect on learning and attainment of effective teaching methods with and without the use of ICT by teachers and pupils. Pairs of teachers of similar age range were supported in using research evidence to design interactive teaching approaches to difficult topics in science, mathematics and languages across the age range 3-14 and in a variety of different schools.

Findings	Implications
A higher proportion of dialogic teaching is beneficial for learning. Good teachers use ICT to stimulate and support reflective and dialogic interaction.	Resources and professional development for teachers to encourage ICT that supports dialogic interaction should help to improve learning.
ICT can help learners to engage with lesson content and influence the course of lessons, but not always in the way intended.	Teachers should be aware of the need to intervene during ICT tasks so that pupils achieve learning objectives in addition to task outcomes.
The potential of ICT to support group work is not widely recognized.	Research on the role of ICT in supporting forms of talk in group work should be built upon with more resources and professional development.
Reflective dialogue with an observer concerning lesson activities and resource evaluation is valuable for teachers' professional development.	Teachers benefit from mentor support to explore resources, gain skills, and reflect on their teaching with ICT.

More information is available on the project's website at <http://www.interactive-teaching.org.uk/>

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Consulting Pupils on the Assessment of their Learning (CPAL) (2005 - 2007)

Dr Ruth Leitch (Queen’s University, Belfast)
 Ms Laura Lundy (Queen’s University, Belfast)
 Prof. Peter Clough (Queen’s University, Belfast)
 Prof. John Gardner (Queen’s University, Belfast)
 Ms Despina Galanouli (Queen’s University, Belfast)
 Dr Stephanie Mitchell (Queen’s University, Belfast)
 Dr Oscar Odena (Queen’s University, Belfast)

This project examined pupils’ participation in their own assessment from a children’s rights perspective. It demonstrated that when genuine opportunities for participating in and understanding assessment are presented, pupils engage in their learning and focus on their own progress. When policy makers use child-centred methods to consult children directly, children show the motivation and capacity to be involved in decision-making.

CPAL enshrined these principles within its own design and processes. KS2 and KS3 pupils advised on ethical informed consent and some of the research methods.

They co-researched and co-interpreted aspects of the data. In addition to traditional survey methods, the project developed creative methods for us with pupils and teachers which incorporated E-consultation, focus groups, drawings, and pupils’ digital recordings.

The project was designed to take account of the policy context in Northern Ireland, with its focus on pupil profiles and assessment for learning.

Findings	Implications
Children can be consulted directly by policy-makers on educational issues such as assessment policy and practice.	Methods should be inclusive and adults should listen and respond to children’s views.
When teachers’ beliefs and their assessment for learning (AfL) practices come together, pupils benefit.	Teachers need support to create participative classroom cultures based on genuine AfL.
Teachers and parents are generally supportive of children’s rights.	There are opportunities for increased awareness of how to apply and evaluate children’s rights in practice.
Children can be involved as co-researchers in mainstream research projects in ways that enhance the inquiry and enshrine children’s rights.	This takes time and careful negotiation. We need a better understanding of the implications of engaging children more democratically in research.

More information is available on the project’s website at <http://www.cpal.qub.ac.uk/>

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A Values-based Approach to Teacher Education (2005 - 2007)

Prof. Alan Smith (University of Ulster)
 Prof. Anne Moran (University of Ulster)
 Mr Alan McCully (University of Ulster)
 Ms Linda Clarke (University of Ulster)

This research investigated the area of values in Initial Teacher Education (ITE), induction and early professional development (EPD) within the context of a government review of the future of teacher education in Northern Ireland (NI). Additional challenges for teacher education were created by other key developments. These include a government commitment to abandon academic selection at age eleven by 2008, and a proposed new curriculum that places greater emphasis on values and skills-based learning, personal, social and health education, and citizenship. The NI e-learning strategy is well advanced with important implications for teacher education. This three-year research programme tracked a representative sample of PGCE students through induction and their first year of EPD. The proposal included testing of innovations in each of the three phases of the NI partnership model of teacher education, which have more widespread relevance for adopting a values-based approach to teacher education and development.

Project Outcomes	Project Implications:
Student teachers anticipated correctly that ITE would challenge their values and attitudes and this involved reflection on both personal and professional values.	Opportunities to engage student teachers with values-related issues needs to be made explicit and involve appropriate methodologies.
Beginning teachers' experiences of induction were inconsistent, with many describing the induction year as disjointed and disappointing.	All beginning teachers should have professional development opportunities. Possibilities include a guaranteed induction year and the use of e-portfolios.
Securing long-term employment continued to be a significant challenge for many beginning teachers. Many questioned the value of Professional Development Activities.	Fragmented employment experiences for beginning teachers reduce the quality of the early professional development process.

More information can be found at: <http://www.tlrp.org/proj/asmith.html>

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Effective Pre-School and Primary Education (EPPE 3-11) (2003 - 2008)

Prof. Kathy Sylva (University of Oxford)

Prof. Edward Melhuish (Birkbeck, University of London)

Prof. Pam Sammons (School of Education, University of Nottingham)

Prof. Iram Siraj-Blatchford (Institute of Education, University of London)

Brenda Taggart (Institute of Education, University of London)

The EPPE 3-11 study (2003-2008) provides a five year extension to Europe's largest longitudinal investigation into the effects of pre-school education on children's developmental outcomes at the start of primary school: the Effective Provision of Pre-School Education (EPPE, 1997-2003). EPPE, EPPE 3-11, and their associated extensions (see: www.ioe.ac.uk/) represent a major investment into early educational effectiveness research by the Department for Education and Skills, and the Department for Education: Northern Ireland.

Following the developmental trajectories of 3000 randomly selected children in 141 preschool settings, the EPPE study has shown the contribution to children's development of attendance at different types of early childhood provision. It has also investigated the effects of duration of pre-school, and the contribution to children's outcomes of different pedagogical strategies and different levels of staff qualification. While investigating the effects of pre-school, the study has also demonstrated the important contribution of family factors to children's development, including demographic influences such as social class and behavioural influences such as family activities that enhance young children's learning. By combining the 'education' and the 'social background' analyses, the positive influence of early childhood education has been demonstrated, especially for children from disadvantaged backgrounds and those at risk of developing special educational needs. The EPPE 3-11 extension has been developed to explore four related themes:

- a) Do the effects of pre-school continue into Key Stage 2?
- b) What are the characteristics of 'effective' primary classrooms and schools?
- c) Who are the resilient and the vulnerable children in the EPPE sample?
- d) What is the contribution of 'out-of-school learning' (homes, communities, internet) to children's development?

More information is available on the project's website at <http://eppe.ioe.ac.uk/index.htm>.

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Variations in Teachers' Work, Lives, and their Effects on Pupils (VITAE) (2001 - 2005) (Associate TLRP project)

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Gordon Stobart (Institute of Education, University of London)

Pam Sammons (School of Education, University of Nottingham)

Alison Kington (School of Education, University of Nottingham)

Qing Gu (School of Education, University of Nottingham)

The VITAE project was a four-year (2001-2005) longitudinal study, funded by the Department for Education and Skills (DfES) and carried out with 300 primary and secondary teachers in 100 schools in seven local education authorities (LEAs). The research was jointly conducted by the School of Education, University of Nottingham and the Institute of Education, University of London. The key aim of the research was to identify factors which may contribute to variations in teachers' professional and personal lives, and to examine why teachers do, or do not, become more effective over time.

The key questions addressed were:

- Does teacher effectiveness vary from one year to another and in terms of different pupil outcomes and do teachers necessarily become more effective over time?
- What are the roles of biography, culture and professional development?
- How do schools and/or departments influence teachers' practice and their effectiveness?
- Are teachers equally effective for different pupil groups or is there differential effectiveness relating (for example) to gender or socio-economic status?
- Do the factors which influence effectiveness vary for teachers working in different contexts, or for different kinds of outcomes?
- Do factors influencing teachers' effectiveness vary across different sectors (primary and secondary) and different age groups (Key Stage 1, 2 and 3)?

The innovative mixed methods design of the study recognised that effectiveness involves both teachers' perceptions of their own effectiveness and their impact on pupils' attitudes and attainments. Central to the research were: i) twice-yearly recorded interviews with the teachers in the study. These monitored their perceptions of effectiveness and the positive and negative influences upon these; and ii) the extent to which these related to pupil progress and attainment. Value-added analyses of pupils' progress and attainment and an annual pupil attitude survey were used to explore pupil outcomes and identify differences between classes and teaching groups for the teachers in the VITAE study. The synthesis and analytical integration of these data contributed to the development of linkages between different features of teachers' lives, professional life phases, identities and school contexts, the identification of teachers who were more, or less, successful in terms of pupil outcomes over a three-year period, and the key moderating and mediating influences which affected variations.

More information is available on the project's website at <http://www.tlrp.org/proj/cday.html>

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