What is knowledge transfer and how does it happen?

David Leat and Anna Reid
Research Centre for Learning and Teaching (CfLaT)
Newcastle University

d.j.k.leat@newcastle.ac.uk
anna.reid@newcastle.ac.uk


Summary
The two-year Knowledge Transfer Partnership (KTP) between Northumberland County Council / Bedlingtonshire Community High School is designed to develop a formative self assessment framework for enquiry skills by Key Stage 3 students. In this paper, the authors present an emerging conceptualisation of knowledge transfer in education which recognises the impact of socio-cultural aspects of learning takes on individual psychological processes.

Introduction
The stakes are high for educational research. Public funding of research implies benefit to or impact on policy and practice. It could be argued that in nearing the end of the first decade of the twenty-first century that there are two factors crystallising the expectation in the UK – one national and one global.

Nationally across government there is an urgency to discover ‘what works’ in public services as a motif for evidence-based practice which will deliver both accountability and value for public expenditure (Pring and Thomas, 2004). Consequently publicly funded research is increasingly expected to demonstrate a relationship with users, dissemination strategies and impact, all of which assumes that knowledge can travel. More specifically in education, much emphasis is put upon ‘sharing good practice’ as a means of learning amongst professionals and within institutions (DCSF, 2009).
The global factor is economic competition. High wage economies, such as in the early members of the European Union, the United States and Japan face fierce competition from newly emerging economies. It was once assumed that such economies would come to dominate those industries where cheap labour conferred an economic advantage, but this would leave the ‘developed’ economies to dominate in high-tech, innovation and service sectors. Such has been the growth of the ‘emerging’ economies that such arguments are being stressed tested: Can developed economies develop education systems which nurture knowledgeable, creative and cooperative citizens?

The Economic and Social Research Council (ESRC) has recently raised the bar in respect of the impact of research, as the Treasury increasingly expects an economic or social return on research investment:

‘The ESRC funds world class social scientists to deliver the highest quality research on the most pressing economic and social issues that we face. Some of our researchers are tackling problems close to home such as poverty, health, education and crime …’

‘A range of research users, including policymakers, public and private sector organisations and the voluntary sector, are currently making more informed decisions as a result of our work.’

(ESRC, 2009)

This trend has also been evident in TLRP, where Andrew Pollard, Programme Director (2008) summarises the development of the programme’s strategy for impact which resulted in seven components including:

- Working with networks of practitioners, learners and others;
- Engaging with a wide range of user organisations and other stakeholders;
- Communicating conceptual, methodological and practical ideas;
- Supporting capacity building activities, including knowledge transformation;
- Facilitating discussion within the programme on transformation and impact

The dominant strategy emerging from TLRP was geared to outputs such as user events and diversity of publication (the web, briefings, summaries, journal articles, books) and some media training. The Programme Director has been frank in analysing TLRP impact by recognising that it has been a challenge and a struggle.

From one of the TLRP projects on a study of science teachers, Ratcliffe et al. (2005) report, that widespread use of research evidence (implying transfer) depends on: translation of
research findings into tangible and useful outcomes, such as teaching materials. They suggest that if research findings are to make an impact, they need to fulfil the following criteria:

- Resonate with or acknowledge teachers’ professional experience in their classrooms;
- Translation into practical strategies for classroom practice and are widely disseminated through professional networks.

This is broadly an individualistic approach, but there is the clear acknowledgement of the importance of professional networks and the implication that social context (experience in the classroom) matters. Illeris (2009) presents a dominantly individual psychological account of transfer, strongly influenced by Piaget, in which he distinguishes four types of learning:

- Cumulative learning, which relates to learning in contexts where there is little meaning or context;
- Assimilative learning, which represents learning that builds upon previous schema, but which also is limited in application to the field in which it originally was experienced;
- Accommodative learning which causes a change in schema as it cannot be assimilated readily and it is characterised by effort and struggle to make sense and arguably can be applied to new contexts, thus becoming a system of principles;
- Transformative learning is the most radical and emotional as it implies changes in organisation of the self resulting from a crisis which triggers the restructuring of several schemas.

Drawing on Broudy et al. (1964) and Eraut (1994), Illeris connects types of learning with four modes of knowledge use: replication, application, interpretation and association. In this progression there is increasing personal change requiring effort and promoting insight and purpose.

Another principal perspective on knowledge use is provided by Bernstein’s (1996) conceptualisation of the pedagogic device which depicts the relationship between fields of activity in knowledge production and use. The device is a set of rules that regulates the processes through which academic knowledge is transformed or ‘pedagogised’ to become pedagogic discourse (curricula, texts and classroom talk). This analysis is sociological
rather than psychological, determined by considerations of power and ideology. Thus the specialised ‘intellectual’ knowledge is re-contextualised by state agencies through national curricula, policies and assessment regimes (the Official Recontextualisation Field - ORF) and by the Pedagogic Recontextualisation Field (PRF) such as teacher educators, researchers and professional associations who wish to make this knowledge accessible. The Reproduction Field is located in the classroom where teachers enact curricula.

According to Maton (2000, quoted in Chen and Derewianka, 2009) there are sites of challenge and struggle as different groups contest control of the pedagogic device, which exercises significant control over educational consciousness. The lens of the pedagogic device brings to bear a societal perspective where the context created by policy (backed by power and discourse) and schools as organisations (which mediate policy) shape teachers’ thinking and action and constrain individual agency.

One of the most influential contributions to understanding of research impact comes in the form of an Australian report (Figgis et al. 2000) for the Department of Education, Training and Youth Affairs (DETYA) which was much admired for its approach. Instead of trying to trace research outcomes through to policy and practice, the authors reversed the process and started with the adoption of a policy and then looked upstream for the research influences on that policy. In doing so the authors emphasised the importance of a connecting web of relationships between researchers, practitioners and policy makers. It is in these relationships that knowledge is communicated and transformed in a form of ‘learning space’. These relationships do reflect power but they also reflect the personal quality of relationships and the trust that underpins them. An interesting example of such a web in the UK context would be provided by the Assessment Reform Group who have had a strong influence in the shaping of the Assessment for Learning ‘agenda’, although because of the nature of the ‘web’ and its distorting effects not always in the direction that was intended.

Further emphasis is given to the influence of relationships, inter-personal factors and local context in a research report by Fielding et al. (2006). They highlight four elements of practice transfer for special significance. The first is relationships and trust which signals the importance of social learning between teachers and the second is teacher and institutional identity which reflect (or not) certain conditions for social processes. The third element is learner engagement which promotes a willingness to try something out and the last is an understanding of time as there are no quick fixes and more time is needed than is rarely
Learner (teacher) engagement is a reminder that individual motivation, beliefs and self-efficacy matter.

In highlighting self-efficacy we believe that a key concept in understanding knowledge transfer is that of *epistemic objects* (Knorr-Cettina, 2001), which provides an important bearing on the transfer/translation of practice knowledge. Potential examples would be Philosophy for Children, ground rules for talk, concept mapping, some drama conventions and ‘mysteries’. Epistemic objects have the capacity to unfold indefinitely, rather than being taken-for-granted tools which perform a known function. They are characteristically open and question generating. They provide catalysts for action which, in the right social and cognitive conditions, can propel professionals on a trajectory of knowledge translation and generation (see Higgins & Leat, 2002 for a discussion of powerful pedagogical strategies). Finally more evidence can be found for the importance of epistemic objects as catalytic tools both in teaching and teacher research in the UK Campaign for Learning *Learning to Learn* project (Hall et al., 2006).

With such a variety of different perspectives relating to the process of knowledge transfer/transformation, one compelling conclusion is that the processes at work are complex and require some synthesis in inching towards a more integrated conceptualisation. Figure 1 represents this synthesis. It is inspired by a model developed by Askew et al. (1999) in seeking to explain how particularly effective teachers of numeracy develop that effectiveness, but we have extended and adapted it.

*Figure 1: Different perspectives relating to the process of knowledge transfer in teaching*
We believe that epistemic objects are key to explaining knowledge translation in teaching. Teaching is a social profession which presents some different contextual factors to manufacturing and information systems. What we might term technical knowledge that can be applied to physical processes is replaced by social knowledge about how people act, interact and learn in pedagogical contexts. Knowledge translation requires that this knowledge is used by, in this case, teachers and thus becomes part of the pedagogical knowledge base. To be used there needs to be an action component so that a facet of practice is changed. The way it is used is influenced by beliefs and also by self efficacy (Bandura, 1997). The response of pupils, and perception of that response, is critical. If it is positive then the self system is likely to elaborate the significance of the epistemic object and expand practice with possible effects on beliefs and self-efficacy. All this takes place within the ‘blue space’ of the school which can either be supportive of such change or inimical.

Context
Knowledge Transfer Partnerships (KTP) is Europe’s leading programme helping businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK knowledge base. This paper derives from a two-year Knowledge Transfer Partnership (KTP) between Northumberland County Council/Bedlingtonshire Community High School and Newcastle University where the focus is on developing an assessment/progression framework for enquiry skills and in which the onus is on student peer and self-assessment.

The school is a mixed 13-18 high school, serving an ex-mining locality with a recent history of job losses and high unemployment. There are 856 students on roll. The percentage of students eligible for free school meals is average. Most students are of White British origin and few have English as an additional language. The proportion of students with learning difficulties and/or disabilities is above average. Students come from a wide range of socio-economic backgrounds but with significant pockets of deprivation. The numbers of students gaining 5 or more GCSE grades A* to C is rising steadily and in the 2007 examinations Year 11 students achieved well in the core subjects of mathematics and English.

The KTP is funded by the ESRC and is the first located in a maintained school. A key feature of KTP is the appointment of an associate (one of the authors) to work in the partner organisation for the majority of their time, thus injecting considerable capacity for supporting
individual and collaborative learning amongst the teachers. This contextual information, we believe, justifies representing this KTP as a critical case study, as it has unique features. Work on the project started in January 2008 with 7 teachers, 2 each from English, science and mathematics and one from art. There is also an academic supervisor and a Deputy Head teacher supervises and supports progress in school. In its second year the project has extended to a further 6 teachers, with resources and ideas also shared with all staff.

The KTP project was first discussed when a new Head teacher was appointed in 2006 from being a Deputy Head in another local school. He was known personally by one of the authors. The school was under considerable pressure as it results were not improving at a sufficient pace. It had no recent history of pedagogic innovation or strong professional development activity and soon after the Head’s appointment its federated feeder middle school went into special measures, which precipitated the move by Year 7 and Year 8 (11 and 12 year olds) pupils from the middle school site to the high school. Year 5 and Year 6 (9 and 10 year olds) pupils moved into a Primary Unit on the high school site in February 2008. The point of this description is that the school started with very few advantages in terms of bringing about substantive change.

It has been the responsibility of the KTP associate, academic supervisor and in-school supervisor to ensure progress through the execution of a project plan which involves six significant stages; building foundations, investigating baseline practice and establishing working methods, moving on, refining, planning knowledge transfer, knowledge transfer. Each stage of the KTP involves teachers meeting with the KTP associate, video recorded lesson observations and a debriefing session. Once teachers are confident in their approach, they plan a lesson or series of lessons in pairs, across curriculum areas or within the same area. A toolkit of activities for enquiry is used by teachers in their lessons in order to engage learners and develop their thinking. The toolkit includes templates based around thinking skills activities such as 8Qs, diamond ranking and the inference square. Enquiry, even split into separate parts, was too abstract a starting point for many of the teachers. In recent months, teachers have discussed their work on the activities in the toolkit at various continuous professional development meetings, teaching has been observed by practitioners from local and international schools, and teachers and students have developed a language for learning in the form of the Habits of Mind introduced by Costa and Kallick (2000).

An important addition to the KTP project has been the recruitment, induction and training of two cohorts of student ‘researchers’ whose job it is to support the teachers within a
community of enquiry. Students attend a training session with the associate once a week. They have also played a significant role in welcoming and informing visitors to the school about the research project.

Methods
To date, the KTP project has provided a number of very rich sets of data all of which cannot be included in this one paper. In order to facilitate our choice, it is important to highlight the research questions set out in the original abstract:

- What is knowledge transfer?
- What, if anything, is transferred and in what form?
- Where is knowledge transferred from and to?

The data collection has included:

- Materials produced by the associate and the teachers and use of those materials;
- Learning journals kept (periodically) by the teachers and (dutifully) by the KTP associate;
- A record of the academic articles, books and downloads passed on to the associate from the academic supervisor;
- Lesson plans of ‘development’ lessons;
- Interviews with the teachers (conducted by an independent researcher) on their experience of the KTP.

The analysis is driven by the search for the identifiable knowledge items which have surfaced in teachers’ practice, thinking and talk and tracing them both backwards and forwards in time, to find origins and destinations and aspects of transformation and distortion. There is triangulation of this process through the multiple data sources which also allows us to gain snapshots of knowledge items through time and space (as they travel), and how context has influenced these processes.

Analysis of results
We have tried to keep the individual teachers as units of analysis whilst taking account of the social and cultural setting. This is because of our acceptance of the significance of socio-cultural factors, as exemplified in the work of Figgis et al. (2000) and Fielding et al. (2006) which see research impact and sharing of practice (both aspects of knowledge transfer) as embedded in context.
**Teacher's accounts of support for change in the project**

11 of the 13 teachers referred to the 'toolkit' as important in their engagement with change and enquiry teaching. In most cases this was automatic indicating the central role that it played:

- *I regularly use the toolkit and I use it with every group that I have got – right to sixth form;*

- *I use a lot of the toolkit all of the time. I use Odd one out, 8Qs all the time – it is good for exam questions, diamond ranking – all the time, target board;*

- *My planning has changed in that I use the toolkit regularly, with all my classes, and with all abilities;*

- *Using the toolkit has been great though. I have translated some of them – the 8Qs. I love using that with the sixth form, it generated so much information than otherwise.*

Most of the ‘toolkit’ activities generate tasks which have no right answer, but which instead encourage students to articulate their thoughts and ideas utilising their existing knowledge. This scaffolds a shift in classroom talk away from the I-R-E format (Sinclair & Coulthard, 1975) towards more exploratory talk in which students give more extended responses. It can upset the normal teaching routine of some teachers:

- *I was really scared because when I teach it's me telling them how to do something;*

- *It is scary, but it has been good for me and I have been taken out of my comfort zone.*

Having initiated change through the use of teaching tools or epistemic objects, it is the consequences of use that is critical to further learning or translation of knowledge linked to that vector. Thus most teachers have encouraging stories to tell about the students some of which represent a very different perspective:

- *It has opened my eyes to the abilities of the students that I hadn't recognised and to value other skills, not just linguistic skills. I love seeing the light bulbs going off in the student researchers;*
With my Y9s it was like Beirut in the classroom, but now we have reached a level where although it’s not perfect I can really see the benefit;

When I watched the video, I saw how some of the kids supported some of the other kids so they didn’t get in trouble, so in the next lesson I thanked them.

The socio-cultural context
There were four elements that were very visible in a very supportive context. Eleven teachers mentioned ‘Anna’ the KTP associate, many seeing her as vital to the initiation and continuation of the project.

(4) I don’t think the project would have worked if Anna hadn’t been in school;

(6) Anna – I can’t praise her enough. She has also given us reading;

Anna has been fantastic – she is truly a driving force – she pushes you on and this has been necessary. She has been very supportive.

Her method was to work with individual teachers supporting their planning and if they were agreeable, videoing them so that they could reflect upon the lesson more deeply than might otherwise be possible. In some cases this support of knowledge use has given individuals a ‘leg up’ in surmounting personal barriers or negative experiences.

One lesson went horribly wrong … At the end of the lesson we talked about it and …

Anna has been brilliant – very positive, not just for the project but to chat with.

Even with the awful lesson, she looked for the good points;

Seven teachers also mentioned the senior leadership team in providing continuous encouragement and support, particularly in terms of taking risks or experimenting with their practice. The import of such support is that within a context of intense accountability and performance management (performativity culture) teachers can feel that they have to play safe and that they are under scrutiny to conform.

(Jen) The whole senior management team are definitely very keen and supportive of an enquiry-based curriculum;
(6) Our head is very much behind the project and says give things a go – if they work – fantastic – if they don’t, don’t worry. I feel there is a culture in the school of giving new things a go. The fact there is a group of trying these things out has helped and so you know there are other people giving it a go.

As indicated in the last quote several of the teachers mentioned their peers, predominantly indicating the original seven which gradually extended as a few enthusiasts were enlisted.

(8) Other members of the group have been good to talk to … Over the year some individual teachers have demonstrated how to use some of the toolkit, and that has helped. I had felt a barrier – I can’t use these, but it made me aware of how I could use them, which made me go and use them and then love using them;

(10) I couldn’t have done it without being allowed to try things. I have also been supported by the rest of the staff.

Finally within this section, there is a special factor, that of the students. Although the number of researchers recruited from the Key Stage 3 student body has fluctuated there have been up to 30 at any one time. Several teachers found their presence and quiet contribution in the classroom very reassuring. Bill, for example, after a ‘horrible’ lesson explained how he consulted the students:

At the beginning of the next lesson we talked about it and I said how could we make sure it didn’t happen next time? They came up with ideas, how to improve – “give us some instructions, but not all, give the demo closer to the lesson – not a gap of a week”. I have tried that since and it works really well.

(8) With the student researchers you almost have these secret smiles – I know why you are doing this and that’s really good, because it does build up this mutual support within the lesson.

We can conclude that support from a variety of sources has been strong. Power has not been used to coerce, indeed there has been explicit encouragement to take pedagogical risks and the Head teacher has been acutely conscious of not allying the KTP project too closely with the senior leadership team, as he wanted the project to have some ‘bottom up’ component.
Degrees of Change

If Illeris's (2009) analysis is taken as a point of departure, there is evidence that different individuals engaged with enquiry and the supporting toolkit in different ways. Although categories can be lumped and split, we present three groupings:

a) Those who did not change much as their beliefs and practice were already consonant with enquiry and the toolkit (3)

b) Those who did not change much as their engagement with the project was substantially through the toolkit without managing to alter their style or epistemological stance (3)

c) Those who do appear to have changed their practice and beliefs, who in many respects are the most interesting (7).

The first group are Henry, Pete and Denise. All three are relatively new recruits to the school, Pete and Denise arriving during the project, reflecting a recruitment strategy to bring in further capacity for change. They all make reference to other starting points or knowledge bases on which the KTP project is building, respectively CASE (Cognitive Acceleration through Science Education)/UFA (University of the First Age), a Learning2Learn model in a previous school and Thinking Skills. Pete described his starting point as follows:

*I had been involved in similar things at my last school. I thought I believe in that, it's my philosophy of teaching too.*

Note there that he is explicitly relating the KTP project to his beliefs (see Fig.1). For Denise, a new subject leader:

*A lot of things in the enquiry toolkit I was used to using – I would teach with them before … I was working in Durham and they were really pushing thinking skills just as I qualified.*

The second group (Greig, Charlene and Jennifer) show limited signs of change. They have used the toolkit, thus influencing their practice, but at the time of the interviews they were expressing significant reservations and not suggesting a capacity to surmount them:

*(Greig) I have used some of the toolkit with my bottom set Y8 and it's been very helpful, but getting them to understand the higher level words has been a bit difficult. I don't think it shouldn't be done at all, but it should be done in specific lessons.*
I should do a bit more group work, but I haven’t got it sussed yet. I should put them in groups and let them get on and be prepared for the riots, which is not always the easiest thing to do, especially when you have a challenging form from the onset anyway.

(Jennifer) I have seen these types of lesson before – they look good from the outside but when you look at what the pupils .. they often don’t know what they are meant to be doing or they just look busy ... I think if people (teachers) were left to their own devices they would say they were too busy.

(Charlene) We did a long enquiry … and I thought they just found out what they already knew. They didn’t take it any deeper, knowledge wise they didn’t get a lot out of it and they got quite cross at times … as soon as you make them do research it means they have to read and they don’t read – they aren’t readers, they only pick out headline information.

There is a sense in these quotes that for these three teachers there were some aspects of their beliefs about teaching which clashed with the practice of enquiry as transmitted by the toolkit. Their view is that some pupils at least find it difficult to work in this way and that the outcomes are negligible. For some reason either the pupil response has not been as positive as it has for other teachers, or they have not been able to achieve a more open style in their teaching, or perhaps their internal evaluation criteria are different. All three express significant reservations. Furthermore none of them made connections between enquiry and any other agenda or knowledge base, suggesting that the toolkit might have been used at the assimilation level only.

The third group (Bill, Maria, Emma, Roger, Dan, Donna and Duncan), being the largest are perhaps less homogeneous. Bill’s shift is linked to his realisation that he is inclined to be lazy and has in the past relied on his personality, reflected in his statement about ‘not liking theory’. The cause appears to be a dawning perspective about learning from the student perspective and what students ‘get out’ of lessons. This has focused his attention on skills for future employment. Donna, a relatively inexperienced teacher, describes a shift from a very traditional teacher, very much in control, to ‘handing the reins over to pupils’ (evidenced by devoting a half term to student-led teaching). Both Bill and Donna are young teachers and have been influenced by getting profile and status from their involvement. Emma represents a very different case and in many ways more subtle. She perceived that she was
having some difficulties with some classes and her use of the toolkit has helped her become less rigid, more approachable, more attuned to students’ abilities and relinquishing some control. She has been deeply impressed by watching video of her own practice to see how students respond and hearing student researchers talk about their involvement and perspective:

I have always been quite in control of what I do, and I have released some of that control. Yes I do need to be well organised, but I am standing back, not controlling things quite so much … As a result of the project the students now see me as a bit more approachable … I can still have awful times with them, but I have far more good times …

Duncan too is a case of gradual, thoughtful change, using parts of the toolkit in a utilitarian fashion to start with but adding an enquiry focus over time. The sign of change in him is the hard thinking he has done about objectives, realising that in enquiry they cannot be specified completely in advance. Furthermore he had a seminal moment in going to a conference:

I went to a conference and the theme was ‘leading system redesign’ – what do we need to do to redesign school for the future? What do we need to change to meet needs of the next generation? There were lots of keynote speakers and workshops and what struck me throughout the sessions was that there was an enquiry element in the vast majority of what they were talking about. Those sessions were designed to show that this is good practice for now and the future. I came back and I told colleagues that we are doing the right thing – well done we are at the forefront of this redesign.

The other item of propositional knowledge that was mentioned staff was Habits of Mind (Costa and Kallick, 2000). Habits of Mind (HoM) describes sixteen dispositions of effective learners and was suggested as an appropriate by the Deputy Head teacher, who has previously worked as a local authority consultant. HoM is more abstract than the toolkit in that it does not have an obvious action component, its strength lies especially in the language that it provides to staff and pupils through which to understand possible learning goals and outcomes in enquiry. The three teachers who mentioned HoM either provided evidence of change or started with enquiry teaching as part of their practice.
Discussion

If knowledge travels, diffuses or transfers it does so through the medium of people. Indeed many would argue that there is no knowledge outside of people. The toolkit was the assemblage of knowledge which has spread most readily amongst teachers in the KTP project and as evidence of its ‘transfer’ teachers’ thinking and practice has altered. In some cases this has been superficial change and in other cases radical, bringing about real changes in the self. For those for whom the change has been radical there are signs that deeper structures are entrained. We see four levels:

- Surface practice;
- Pedagogical approach;
- Beliefs/pedagogical stance;
- Education, school and society.

Figure 2: Levels of thinking following knowledge transfer

Thus the three teachers who changed the least engaged in changes in surface practice and found difficulty in changing to a pedagogical approach, in this case enquiry. The change was difficult because of a number of reasons, teaching style, the demands of planning and their deep-rooted beliefs about teaching and learning. They have not reached a dead end in respect of enquiry and since the interviews, Greig has had further learning opportunities which have caused him to reconsider some of his thinking. Pedagogical approach and beliefs are closely tied. Some teachers, such as Donna, started with the toolkit for enquiry (surface practice) and rapidly moved to a change in their pedagogical approach, throwing her lessons wide open to student questions and determination of direction. For Emma it has been a slower process where her beliefs seem to changing in small yoked steps with her
pedagogical approach, inching forward. For Pete and Duncan the use of the toolkit has become connected to a pedagogical stance linked strongly to enquiry, but change has gone further still through the connections they have made to wider agendas about schooling and society in the future.

Conclusion
The headline answer to our questions is that knowledge transfer is a predominantly a social-cultural process mediated through individual psychologies, which are in turn shaped by context factors. It is, most obviously, the practical action-oriented knowledge as crystallised in the toolkit that is transferred and it moves from the associate as the conduit to classroom teachers. However once with the teachers it is reshaped in a variety of ways as each individual engages with it and constructs it uniquely. But, as in all things, it is more complicated than that!

Knowledge transfer is acknowledged by many as an inadequate term and in social contexts it needs to be seen as part of a social construction process whereby the support and dialogue with others matters. Furthermore the associations that are made with other knowledge and ideas is important, not least with more abstract ideas that offer a trajectory of thinking, starting from concrete action, moving to school pedagogical principles and where appropriate to views on education and society.

This picture of cumulative escalating knowledge translation can only be achieved in certain social conditions. Nutley et al. (2008) have developed a matrix of research use which is based on three models of research use – the research-based practitioner, the embedded research model and the organisational excellence model – and two perspectives on research use: rational linear and interactive. The KTP case study fits the ‘Interactive – Organisational Excellence Model’ most closely. The matrix description suggests that research findings are collectively interpreted and adapted in the local context, through local experimentation, evaluation and practice development, which reflect partnerships between service organisations and researchers. We would add however the interpretation and adaptation process depend upon epistemic objects which allow professionals to act differently and follow the consequences.
References


Economic and Social Research Council (ESRC), ESRC – Making a difference [Online] http://www.esrc.ac.uk/ESRCInfoCentre/what_is_soc_sci/casestudies/ImpactCaseStudiesIntro.aspx (Viewed on 19 August 2009)


*This document was added to the Education-line database on 15 January 2010*