innovation

Transferring learning and taking innovation to scale

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curee

Foreword

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This booklet is one of The Innovation Unit's series of 'think pieces' – the series which offers a platform for writers and researchers to present ideas that aim to provoke discussion about key issues facing the education system. Through the series The Unit aims to act as a 'critical friend' both to policy makers and to people who work in schools, and also to champion the role of innovation and professional creativity within an education system. Although the whole series has been written with the English education system in mind, many of the ideas and issues apply to education systems in other countries.

This publication, written by Philippa Cordingley and Miranda Bell, is part of a suite of materials produced by the Centre for the Use of Research and Evidence in Education (CUREE) for The Innovation Unit, and features case studies and reports, which are available separately, as well as this stimulus for debate. They are the outputs from a national project on take up, transfer and scale up commissioned by The Innovation Unit and undertaken by CUREE.

One of the major issues facing any education system is how to ensure that good ideas and excellent practice don't get 'trapped on location', but travel laterally (and vertically) to improve the quality of education provision being offered to each and every student. Cordingley and Bell unpack the most common approaches that have been used in education at system level – coaching and co-construction, specialist instruction and training, dissemination and reading, networking and collaboration, regulation (accreditation, inspection and monitoring) and competition to the issues of take up, transfer and scale up. Their analysis of these core practices and their relationship to the evidence base provide much material for reflection. Good solutions to these issues have the potential to inform and transform policy making at every level, within school, between schools, at local, regional and national levels. This pamphlet and the accompanying materials are a major contribution to the debate about these crucial issues.

The question of what constitutes effective transfer of learning from new initiatives and taking it to scale confronts education policy makers everywhere.

This booklet is part of a national project, carried out by CUREE and commissioned by The Innovation Unit, that is exploring both research and practice. The project is bringing together the evidence from education research and an analysis of the approaches to transfer and going to scale currently in use by the key national education agencies in England in 2006-07. The aim is to develop a more widely shared understanding of existing practice and of the evidence base about transfer and scaling up of innovative and/or effective practice in education.

Although it is recognised that there will usually be no one approach to tackling change, the aim of the project is to:

- identify tools that are effective and the contexts in which they work
- establish clarity between education agencies in England about what we mean by the core practices
- provoke debate about these core practices and develop understanding of how they relate to the evidence base.

Developing understanding and debate matters if we are to avoid falling repeatedly into the trap identified by Guskey (1995) who tells us: "The problem in trying to identify the critical elements of successful professional development programmes is that most efforts focus on a search for one right answer … what typically results are prescriptions of general practices that are described in broad and nebulous terms. Sadly these prescriptions offer little guidance to practically minded reformers who want to know precisely what to do and how to do it."

Research and policy background

Both here and in the US, recent research has tended to focus on the need to move beyond numbers – or the 'take-up' of a particular innovation – to securing 'deep and lasting change'; what, for the purposes of this booklet we will call 'transfer' (see for example Coburn, 2003, in the US and Fielding et al, 2005, in the UK). Transfer of learning in the form of practice involves both a change in practitioners' knowledge and normal practice and an understanding of the underpinning rationale. Without such understanding teachers and leaders struggle to adapt approaches to specific needs and contexts; take up remains superficial and practitioners are condemned forever to using something in the form in which they first encountered it. Often, as Desforges (2003) has pointed out, this simply results in a return to the status quo.

Inevitably, initiatives involving the take up of practices developed elsewhere and the process of taking innovations to scale tend to focus on numbers: how many other people can we involve? Yet, as evaluations of the first phase of the National Strategies in England have shown, helpful as this kind of widespread take up of some practices may be, it does not always mean deep transfer. Teachers have sometimes talked the talk (which is an improvement) but not walked the walk – which could make a much bigger difference to their students' educational attainment and build self-sustaining capacity for development. For example, many teachers adopted the three-part lesson approach associated with the English National Strategies and benefited from increasing subject knowledge; the subsequent impact on pupil attainment was impressive. But many took advice about issues such as pace and debriefing at face value without working through the underpinning rationale. This resulted in a rash of lessons and closing plenaries characterised by fast and furious closed questions and superficial answers rather than the exploratory discussion and reviewing of learning that was the aim. How much more might be achieved if, in the next waves of development, we focus on helping teachers talk the talk and walk the walk?

The evidence from studies of effective continuing professional development (CPD)[1] shows that actual transfer of learning – resulting in embedded and sustainable change – depends on a combination of measures to encourage take up and to facilitate the development of ownership and control of new practices. Going to scale also involves a combination: combining both the take up of practices developed elsewhere and the transfer of learning. Going to scale in effect means the transfer of practice by the many – easy to set as a goal but hard to achieve.

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Cynthia Coburn's (2003) review of the theoretical and empirical literature on practice that has effectively gone to scale, plots the core dimensions of activities that are evidenced in successful support for taking practice to scale at system level. She argues that expanding a reform to multiple settings "is a necessary but insufficient condition for scale [which also requires] change in classrooms, endurance over time and a shift such that knowledge and authority for the reform is transferred from external organisations to teachers, schools and districts." She encapsulates the issues around taking reforms to scale in terms of four interrelated and overlapping dimensions: depth, sustainability, spread and shift in ownership:

- The key dimension is **depth**. Deep change "goes beyond surface structures or procedures [such as the introduction of a lesson plan] to alter teachers' beliefs, norms of social interaction and pedagogical principles."
- Depth also plays an important role in the capacity of schools or children's services authorities to **sustain** change. Teachers with a deep understanding of the principles of a reform are better able to respond consistently to new demands and changing contexts. Sustainability also requires support mechanisms throughout the system, including a supportive professional community of colleagues in the school.
- **Spread** is a measure not only of increasing numbers but also the ways in which reform norms and principles influence identifiable operational structures, such as whole school, local or regional policies, procedures and professional development processes and priorities.
- To be considered at scale, **ownership** of a reform must shift so that it is no longer an external reform controlled by a reformer but becomes an internal reform with authority for the reform held by districts, schools and teachers who have the capacity to sustain, spread and deepen reform principles themselves (Coburn, 2003).

From our case studies and a series of consultations with stakeholders with a wide range of professional expertise and experience, we have added a fifth dimension – purpose – and explored these dimensions in operational contexts. So our focus is:

- goal and purpose – how much change is involved, of what kind?
- depth – or transfer of practice, knowledge, beliefs and understanding of the principles and values
- spread – numbers or volume
- extent of ownership
- degree of sustainability.

The starting point of all efforts to transfer practice and take it to scale is the purpose or aim of the intervention. In education the starting point – and the end point – are connected. One way and another, our goals are always about enhancing learning and achievement and our starting points are always identifying and

building on what learners know and can do already. But there are many variables in between and many direct and indirect contributing activities. If the goal is to ensure widespread compliance with new legislation – for example, new child protection arrangements – the emphasis may primarily and properly be on take up via dissemination and regulation. The processes will be legally codified and usually involve relatively little realignment of educational values. If the innovation is about transferring teaching and learning, more elaborate sets of tools, timescales and resources will be required.

For our purposes (ie in practical, operational terms), the value of these dimensions is that they are not separate benchmarks in an orderly, linear implementation plan with a fixed notion of the numbers involved in going to scale: they are interdependent. Their usefulness is in their potential to inform the planning of both the design and the implementation of educational innovation regardless of whether the intended spread is within a single school or across a district, region or nation. The question for this project is: what are we doing to make sure that practice is effective in all five of these dimensions of transferring learning between environments and taking innovation to scale? What should we be doing and what strategies are effective in which contexts?

In England, policy making aiming at large-scale spread for several decades focused strongly on regulation (in its broadest sense). This has resulted in fast, but plateauing, benefits for learners. There have been linked dependencies and 'done to'

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mindsets. Things are changing. The case studies of current approaches to taking innovation to scale by national agencies (such as QCA's 21st-century curriculum project and the blended learning work of the National Strategies, for example) recognise the need for local nourishment of regulatory instruments and centrally driven target setting. Regulation can ensure that a child goes to school, and monitor long-term trajectories, for example, but it can't breathe life into the experiences the child will have on the way.

Particularly striking amongst the experimental efforts of English national agencies gathered for this project was the prevalence of strategies geared towards collaborative construction of new approaches to secure ownership, genuine implementation and sustainability. Here, policy has moved ahead of the research. The principal vehicles being explored by national agencies are: collaboration, co-construction and inclusivity, albeit within a framework of target setting and maintaining. For now, at any rate, such processes are complementing, possibly replacing competition, system regulation

and 'the best leading the rest' as the change drivers. There is recognition that this is expensive but that such investment provides better value because it is more likely to be developed to the point where new approaches are coherently embedded in the school and local, regional and national education structures – the spread identified by Coburn as a key indicator of 'going to scale'.

How far is this emerging interest in co-construction reflected or understood on the ground? In *The Adaptive State,* Demos argues that:

"... major improvement to the increasingly diverse world of public service provision is less and less likely to come from the centre alone. We believe transformation will instead depend on civil servants and practitioners alike experimenting with small-scale innovations and ensuring that policy learns from these." (Demos, 2006)

But this is not yet the general perception. Scratch the surface of any sceptical teacher or leader and it is generally the manner in which change is introduced as much as the change itself that is at issue. In education policy circles, collaboration and co-construction are the new watchwords, but have practitioners noticed yet? There is a gap between policy and practitioner perceptions of professional autonomy that needs addressing. Practitioners, except those in challenging circumstances, are more free both to adapt and tailor policy-driven change and to have more autonomy around innovation than many realise. The national curriculum and other regulatory frameworks are usually thought of as preventing innovative developments – it was on this basis that The Innovation Unit was given powers to recommend lifting regulations for a particular site if they impede innovation. Yet in practice they have seldom had to use the formal legal powers, but instead have given detailed practical advice to enable the innovations to take place. This demonstrates that often it is more in the perception than the reality that regulations stop people implementing their own reforms or adapting national initiatives to the needs of their own schools and students.

Although local interpretation and adaptation for context is an inevitable feature of national education systems, the issue of numbers is important. There are ethical reasons for this as well as issues of equity, efficiency, manageability and accountability. The problem is how to tackle the numbers and the deep transfer involved in going to scale. In education the main problem in moving to scale is that teaching is a dynamic process. Teachers and support colleagues work with large groups of students who affect each others' learning – all with different needs and all at the same time. This makes teaching and learning a highly context-specific activity. Innovation and change needs to be worked through, in context, by every teacher.

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Also, by contrast with health practice, the evidence on which to base our confidence in the efficacy of practices that we might take to scale has, until relatively recently, been limited. Most of our evidence about teaching and learning has come from research whose funders are in a hurry. Short-term evaluations and uncontrolled trials are common. Few evaluations genuinely explore all the multidisciplinary dimensions of the many changes involved or collect longitudinal data. However, recent substantial investment in research into teaching and learning,[2] in systematic reviews of evidence and in accessible practitioner research resources[3] has begun to change this. Substantial evidence about the learning benefits of a number of educational practices is accumulating – for example, our knowledge about the benefits for learning of structured group work.[4] What is needed are tools for transferring this knowledge into practice at scale, and this is the terrain that the case studies for this project are exploring.

We do have increasingly consistent evidence about practitioner development. We know from several systematic reviews (Cordingley et al, 2003a, 2003b, 2005; Timperley et al, 2006) and from a number of research studies (eg Adey and Shayer, 1994) that, unless real professional learning takes place – Coburn's depth dimension, or transfer – changes in teaching practice are likely to be superficial and to have much less impact on children's learning than could have been the case. Joyce and Showers (2003) identify two interlinked aspects for effective professional learning. The first is the provision of information and instruction that enables people to learn knowledge and skills new to them; the second is to transfer that knowledge and skill to active classroom practice through a mix of collaborative experimenting and practice of new skills supported and structured by coaching. Their work and the evidence from a systematic review about the nature of the specialist contribution to professional development (Cordingley et al, 2007) means that we do know something about the form that support for transfer needs to take.

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We also have evidence, both from meta reviews of international research in health (*Effective Health Care*, 1999) and from current national initiatives, of the efficacy of approaches to making changes to practice that are targeted towards identifying and tackling the barriers to professional learning. This evidence on the development processes and barriers combines to help us understand what might be involved in operationalising the depth dimension of going to scale.

Key messages from research about strategies for going to scale

How do we engineer the depth, spread, sustainability and ownership needed for taking educational change to scale? Within education the following approaches or sets of tools have been commonly used and, evaluated to some degree, at system level:

- coaching
- co-construction
- specialist instruction (training)
- dissemination and reading
- networking and collaboration
- regulation: accreditation, inspection and monitoring
- competition.

There are also consistent messages from both research (eg APA, 2006) and practice (Ofsted, 2006) about the importance of a number of preconditions that need to be in place if any combinations of the scale-up strategies are to have a chance of working. They are:

- monitoring and evaluation – inbuilt from the start, and extended to include sustainability rather than evaluated immediately after a short-term intervention
- leadership support
- the need for a clearly identified focus for change around which to plan the implementation strategies.

Going to scale around a system-wide problem such as raising standards needs focusing at local level on specific sets of problems and specific groups of students. Personalising learning, for example, is a construct that will only go to scale if it is chunked into manageable and focused approaches such as assessment for learning, thinking skills, consulting students or enabling exploratory talk. Schools also need to be supported in 'chunking' the local agenda and directly identifying and targeting the learning outcomes for subsets of their own students.

Coaching (including co-construction)

Teachers and support staff similarly 'chunk' development efforts when they are effective, focusing both on explicit needs of specific students and on a specific aspect of their knowledge, skills and practice. Where this is effective it takes place within collaborative contexts supported by processes, such as coaching, co-construction or collaborative enquiry.

By co-construction we mean processes by which those to whom practices are being transferred are involved in the design of the initiatives from the very beginning. They are:

- actively involved in diagnosing needs and starting points through evidence about student achievement
- involved in interpreting and refining the focus of the activities
- enabled to identify and build on what they know and can do already by having an active role in designing their approach.

"How do we engineer the depth, spread, sustainability and ownership needed for taking educational change to scale?"

These processes usually also form the basis of a coaching relationship which goes on to embed new knowledge and skills in practice. Coaching is a sustained, collaborative process that includes: demonstration and modelling, simulation, experimentation, observation, reflecting on evidence, building on individual starting points and structured dialogue that explores beliefs, internalised practice and the rationale for approaches.

This approach has an unequivocal evidence base from around the world (Timperley et al, 2006; Cordingley et al, 2003a, 2003b, 2005, 2007). It produces a strong promise of effective transfer and deep learning. In the UK, the principal education agencies have moved towards a more consistent, evidence-informed approach to both the principles and the application of coaching and have developed a set of resources aligned with this approach. However, there is evidence (Ofsted, 2006) that whilst take up is expanding rapidly, full transfer is, as yet, patchy.

Specialist instruction does have a part to play, as Joyce and Showers (2003) demonstrate – particularly in securing the underpinning knowledge and developing understanding of the principles. Ofsted (2006) also point out that specialist expertise is necessary to help identify learning needs and gaps. However, the evidence from four systematic reviews of research in CPD and from a systematic review of research in New Zealand (Timperley et al, 2006) shows that the mix really becomes powerful when specialist input is combined with coaching teachers in the application of their new knowledge and skills. Respecting and developing the role of specialists has two benefits: not only does the system acquire access to important insights, there is widespread evidence[5] that those who 'teach' others, as different institutions such as Beacon schools, as Advanced Skills Teachers (ASTs)[6], as coaches or mentors all gain even more from the experience of supporting others than the impressive benefits they are able to confer on those they support. Opportunities to observe successful and less successful experiments, to plan together, to support colleagues, to see those plans tested and to explore outcomes, are also professional learning opportunities for mentors, coaches and Beacon practitioners. Teaching or supporting (as opposed to telling) others seems to be a highly effective way of learning, or securing effective transfer. This evidence implies that learning to provide specialist support within and between schools might help schools with emerging practice to develop effective practice, and schools with effective practice to develop excellent practice, at least as much as being supported by excellent schools.

Leadership

Most leadership and management instructional interventions do not attempt to establish direct correlations between such interventions and student learning,

probably because of the number of intervening variables. There is, therefore, virtually no empirical evidence that ties instruction in management contexts back to improvements in pupil learning (although the complexity of the intervening variables means this isn't conclusive evidence that it doesn't help). The role of leadership in supporting the transfer of learning and taking it to scale features more strongly in creating positive conditions than in processes.

Dissemination and reading

Providing text-based resources, guidelines or guidance is inevitably one of the commonest, policy-driven contributions to transfer. One reason why national bodies rely on such methods is that there often appears to be no other way in which the huge numbers of schools and teachers involved can be 'reached' – although the spread of networking and regional groupings is changing this landscape. On paper, mass communication necessarily offers learning inputs that are relatively insensitive to individual contexts and needs. Electronic interactivity and the capacity to couple text with visual images may increase capacity for dissemination to be personalised for users.

Dissemination and reading nevertheless play an important part in raising awareness, and, in some cases (eg within post graduate professional development programmes with their emphasis on analysis and action research), in promoting reflection. Transfer based exclusively on reading and dissemination is rare, although it is just as rare to find examples of effective strategies going to scale that don't involve clear written dissemination that explains the core of new approaches, illustrates them in context and sets out activities or tools that people can use to try them out. Without a supported or collaborative development context, however, the provision of tools or resources can result either in adaptation that lacks sufficient fidelity to the pedagogical approach, or in people talking the talk not walking the walk.

Networking and collaboration

There is plenty of evidence about the effectiveness of networking and collaboration at the level of take up. There is also evidence of effective transfer of innovations from elsewhere within a network/collaborative. As yet, though, systematic use of networks for taking intiatives to scale is too new to provide systematic evidence about transfer beyond network boundaries. A review of the evidence about the impact of networking (Bell et al, 2006) found that networks were a highly effective way of tackling specific problems but that the actual behaviour change or transfer of practice still depended on teacher-to-teacher, or teacher-to-specialist interaction. The review found evidence that:

- peer-to-peer collaboration was widely used to support the transfer of knowledge and practice
- 'expert' input was a factor in nearly all the studies – experts' contributions ranged from training to strategic advice and facilitation, while the experts themselves ranged from teacher mentors to career specialists and parents

- face to face contact was more widely reported than ICT or printed communications – this ranged from collaborative on-site planning and reflection to coaching and mentoring
- half the networks made use of 'events' – events included conferences, symposia and other formal meetings. Training events acted as vehicles for increasing the number of colleagues able to describe and use new knowledge. In many cases, these too were built in to the design of the CPD interventions.

There is robust evidence from studies of professional development around the world of the power of collaboration to drive the engine of change – of the effectiveness of collaboration (as distinct from networking) as a professional development strategy. This is closely connected to collaborative coaching and enquiry. At system level, evidence is less well established, although there is some evidence of the effectiveness of collaboration in achieving transfer of imposed innovation in a multi-school network – for example, where heads have agreed to an intervention and teachers have been instructed to take part. Fogleman et al (2006) offer a conceptual framework for these collaborative activities, which they call CERA (Krajcik et al, 1994): namely, collaborative construction of understanding; enactment of new practices in classrooms; reflection on practice; and adaptation of materials and practices.

Working collaboratively, teachers, or teachers and specialists, create new approaches, understandings and resources. Dempster and Deepwell (2005)

"At system level ... there is some evidence of the effectiveness of collaboration in achieving transfer of imposed innovation in a multi-school network ..."

suggest that successful 'embedding' of project approaches is likely to favour best a model of 'research and development' far more than one of 'implementation'. On the ground, this means that embedding new practice does require reformers to have a sophisticated understanding of change processes as well as the particular innovation or strategy that they are promoting. There is beginning to be an emerging consensus on the ground that collaboration offers reformers a better chance of success than prescription.

Regulation: accreditation and inspection

Evidence about inspection is mixed. On the one hand, there is some evidence that take up (of good practice) is stimulated if activities are included in the Ofsted framework. Ofsted itself believes that the process of inspection provides the school with a clear evaluation of strengths and weaknesses and that the clear identification of good practice also enables efficient dissemination through other networks, such as Beacon programmes.[7] But overall there has been little attempt to measure 'officially' the direct impact of Ofsted's work on our education system. Analyses of GCSE results (an inevitably crude approach

to understanding complex variables) as a measure of achievement in schools-related Ofsted gradings don't reveal particularly clear or compelling patterns about the positive impact of inspection per se.

Accreditation appears to promise more positive outcomes if broadly conceived. For example, there appears to be some evidence that the acquisition of specialist school status is linked to raised attainment. Although the findings have been contested, the methods employed in the statistical analysis do seem to demonstrate effects that could not be explained by enrolling more able cohorts. And there is strong evidence about the importance of teaching qualifications in early years' settings as a predictor of positive outcomes.

Competition

Again, the evidence is equivocal. League tables have produced evidence of schools taking up and using, for example, comparative data – with some correlation with improved pupil outcomes but no evidence of better teaching or leadership. Greater competition in schooling markets seems to promote higher levels of academic attainment, but so does increased co-operation within and between schools (Propper and Wilson, 2003). There is some evidence (Adnett and Davies, 2003) that competition is more likely to promote short-run efficiency, and co-operation is more likely to promote long-term take up and transfer. Finally, there is also emerging evidence from school networks of competition within collaborative contexts providing a stimulus to network-wide innovation.

Factors that have played a role in 'non-engineered' take up and transfer

While the project has tried to support policy makers as they wrestle with stratagems for improving learning through effective, large-scale change, we thought it important to cast an eye over the apparently unstructured, unimposed, widespread popularity and take up of pedagogies such as Assessment for Learning (AfL)[8] and thinking skills. These make full fathom demands as far as the depth dimension is concerned. Both require quite substantial changes to practice if they are to be effective. More than that, they require a shift in beliefs and values. For AfL, this involves moving from a belief that ability is fixed, to the belief that everyone is capable of learning; from a belief that assessment is purely an instrument of measurement (of what you can do at a given point in time) to the belief that assessment is a tool for designing learning activities and stages. For thinking skills it means moving from a belief in providing help, explanation, structure and support to creating challenging problems and enabling learners to identify key features and issues for themselves from carefully constructed artefacts and through carefully structured processes wherein support is gradually removed.

Teachers have revealed an appetite for these new pedagogical approaches that confounds the 'can't change won't change' stereotype which has attached itself to the profession in relation to some, more centrally imposed, initiatives.

What these approaches have in common are:

- evidence of improved pupil learning
- a cross-curricular application
- things practitioners can do – and a clear structure that can be interpreted and adapted as a clearly defined set of strategies
- focus on issues already high on teachers' and schools' agendas
- a clear moral purpose
- vignettes – short stories of how something worked and what the impact was.

Yet the enthusiasm evident in the take up of AfL and thinking skills approaches is not enough in itself to create the conditions for sustainability or the transfer of ownership. Two important dimensions involving the spread of the underlying principles and the ownership of the techniques and strategies too often go missing. In the case of AfL, for example, the techniques and protocols were widely taken up in everyday practice – the system is awash with Walts (what are my learning targets), Wilfs (what am I looking for), traffic lights and the like – but without an appropriate combination of support strategies, teachers are largely not using the resulting insights into learning to shape the next steps. They are adopting the letter but not the spirit of AfL (Black et al, 2006; James and Pedder, 2006; Marshall and Drummond, 2006).

Some unstructured, unimposed examples of an innovation going to scale create different challenges. The enthusiasm for paying attention to learning styles is a case in point. Howard Gardner's initial theoretical work on multiple intelligences seemed to strike a chord for teachers everywhere. The 'problem' was a shared one – a desire for all to reach their full potential and a recognition of students' diverse starting points. What to do about it was much more problematic, and the commercial market sensed an opportunity to develop and sell 'instruments' for diagnosing the 'learning styles' of students often as visual, auditory and kinaesthetic (VAK). This made it feasible to expand differentiation beyond the traditional three 'levels'. The VAK mnemonic also, at its simplest, worked as a useful reminder to teachers to make lessons more fun. Yet there is evidence[9] that at best these instruments do little harm but at worst they risk labelling, or stereotyping students especially when teachers support their learning exclusively within the comfort zone of their preferred 'style'. Worryingly there are classrooms in England where pupils wear netball-style coloured bibs to enable their teachers to see at a glance their preferred learning

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style. The research suggests an urgent need for teachers to expand their pupils' repertoire by scaffolding learning activities to move them beyond their preferences.

The popularity and spread of learning styles' approaches does raise questions about commercially published and marketed materials by organisations that do not have a duty to focus on consequences. In this instance commercial interests may have combined with the real concerns of teachers about their students, and an interesting and helpful piece of theory-building to create a whole considerably smaller than the sum of its parts. An important ingredient in improving the effectiveness of transfer and take up strategies, may turn out to be explicit appraisal of the evidence about the likely effects of different strategies at every level in the system. Those promoting transfer and take up need to be explicit about the evidence for their strategies. Those taking up practices developed elsewhere need to become more systematic in their evaluation of the potential impact of new approaches. Significant strides have been made in recent years in promoting evidence-informed practice; key milestones are summarised in *Harnessing knowledge to practice: accessing and using evidence from research* (The Innovation Unit, 2007).

Learning from research outside education

Many of the messages from research in fields outside education echo those of the education literature. They also show that it is critically important that initiators explore issues of impact right from the start of a project, through sustained interactivity with users. Similarly, when planning and designing products and programmes, researchers and others need explicitly to recognise and address the potential barriers to change. Amongst the conclusions of a major research review of the factors influencing changes in practice amongst health practitioners was that multifaceted interventions, targeting different barriers to change are more likely to be effective than single interventions. In targeting the barriers, policy makers and researchers need to distinguish clearly between awareness raising and behaviour change (*Effective Healthcare*, 1999).

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Moving from research to practice: emerging messages from policy makers

All the national agencies in England are making significant investments in different aspects of the education system: from technology and 'e-maturity'[10] to curriculum innovation. As part of the research for this project we were working with the agencies to explore their experimental approaches to their own work in transfer and taking practice to scale, and to illustrate the strategies highlighted by the research literature in the context of up-to-date and real world concerns. We:

- interviewed key players in each agency to identify their key concerns about transfer and going to scale and the strategies they are using
- brought the agencies together in a series of seminars to explore policy and practice
- interviewed in depth and/or worked with a selection of practitioners identified by key agencies on case studies of the intervention strategies on the ground.

The experiences and approaches of the national agencies are consistent with the research evidence in that deep transfer of complex practices to meet complex needs takes time and is costly. Most of these new initiatives are having to balance the desire for depth of transfer and for wide-ranging participation in the context of the available resources.

Some of the key messages from the case studies (which are mainly focused on deep transfer that involves new ways of thinking as well as new ways of doing things) are:

- that there is a growing awareness that the greater the depth of change (and/or the number and/or starting points of targeted learners), the greater the need to plan for adaptation to context or to allow a degree of flexibility – alongside a sense that prescription is a necessary starting point to enable practitioners to understand a practice before adopting it
- a more strategic use of tools, materials and frameworks to flesh out frameworks and help promote deep change

The case studies focused on:

Becta[11] – the development of a self-review framework

CEL[12] – e-learning positioning statements

The National Strategies, Hartlepool – blended learning

London Challenge

QCA[13] – building a 21st century curriculum

QIA[14] – peer review and development

S'EEN[15] – innovation in enterprise

- an awareness both of the importance of coaching and collaborative enquiry – and of the challenges involved in supporting these in a large-scale initiative
- recognition that if the initiative is – at least partly – diagnostic, and/or specific about the stage of development being targeted, teachers will face fewer challenges in adapting new practice to their own contexts
- a recognition that the more urgent and intense the needs of the learners, the more practitioners will be willing to struggle to achieve fidelity to someone else's design and set aside existing approaches – provided they have good reason to believe it will work.

Some of the ways in which agencies were planning to involve large numbers of people included:

- working with natural enthusiasts in the initial stages of the intervention
- starting with a clear focus on tackling problems that are meaningful to many people
- tying support for transfer and going to scale with initiatives of other national agencies; to work in the slipstream of other forms of support
- harnessing the skills and motivations of the benefiting schools to monitor and call to account partners whose participation is superficial.

One common problem seems to be the move from richly resourced pilot schemes to much more thinly resourced roll-out strategies. There is a general recognition that sustainability will be more difficult to achieve if an initiative is initially accompanied by substantial financial inducements. Not only does this threaten the continuity of the initiative but, many argued, it can breed dependency and schools may be recruited for the wrong reasons.

Most of the agencies are actively encouraging ownership by the increasing use of co-construction and coaching, and by encouraging people to address issues in their own contexts. All but the London Challenge are voluntary.

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Key questions and issues: synthesising from research, policy and practice

A number of important questions and issues have arisen from the research, the seminar discussions and the experiences of policy makers as they have attempted to scale up innovation in education over the course of the project.

How do we make better use of dissemination materials?

Proponents of change, particularly where this is system wide, will always invest heavily in text-based materials. Reaching the numbers of people involved is simply too costly in other forms. Mass communication materials are, of course, problematic. They are bedevilled by the 'one size fits no-one' problem. Importantly, the communications expertise being brought to bear almost always sits within the corporate heart of the large public sector organisations engaged in mass communication in education. The object of corporate communication endeavours is inevitably to promote the organisation's values and identity. The resulting tone and orientation is often celebratory and works to standardise rather than to design content for specific purposes or subgroups.

The object of mass communications designed to support the take up and transfer of knowledge and practice is quite different. Its purpose is awareness-raising and learning. The teaching and learning frameworks being communicated need to be reflected in the form and structure of the materials as well as their content. Whilst the art form of mass, educative publications is less well developed than that of corporate communications and publication, it is an important, innovative field. The potential of new and traditional technologies is gradually being combined with teaching and learning know-how to support blended and distance learning. Serious room needs to be made for such expertise if mass communication in support of take up and transfer of learning is to reach anything like its full potential.

Under what circumstances does collaboration work best in transferring practice?

Research supports the emerging national consensus that collaboration offers reformers a better chance of success than prescription with groups whose students are achieving beyond floor targets. Collaboration is as challenging as it is rewarding and rarely works as an end in itself. It is at its most effective when focused on goals that individual partners could not achieve alone, and where there is a strong sense of moral purpose. In particular, when the purpose of collaboration can be connected directly with the needs of specific learners, individuals and teams from a wide range of organisations and disciplines, practitioners seem to be able to overcome standard operating procedures and traditions to embed new, learner-focused and coherent approaches. But such success depends on collaborators having real work to do and freedom from central prescription to do it. Distribution of responsibility needs

to operate within the partnership too. Partnerships need to delegate real power and work from the centre so that people at every level in the different organisations involved understand the purposes and processes well enough to integrate them into daily practice, and feel a personal sense of responsibility and accountability to do so.

How do we secure the right balance between fidelity and adaptation for context?

Purpose is important in relation to the degree of fidelity or flexibility that can be exercised. The nature of the practice to be transferred and taken to scale will make a difference to the degree of fidelity to the original and the extent to which teachers and schools can be flexible in their adaptations to context. For example, interventions that are precisely targeted, have strong moral purpose and involve 1:1 transactions, can require absolute fidelity. Hence strategies such as Reading Recovery[16] could be learned and faithfully – and successfully – applied by teachers with no adaptation required. Reading Recovery is a relatively simple intervention in that it works through 1:1 transactions with students at a pre-specified stage of development, who are experiencing pre-specified problems. In this context it is relatively easy to provide a rich description of the actions and understandings required, and to demand a high degree of fidelity.

> *"Educational innovation will always be highly context specific."*

Fidelity in the context of approaches that work with whole classes over a much wider range of learning strategies, beliefs and challenges is an entirely different proposition. Teachers need to exercise judgement in these contexts and to be flexible in adapting the approach to the needs of their own schools and learners. For that they need a clear understanding of the underlying principles of the approach and they need ownership of the intended outcomes.

Educational innovation will always be highly context specific. The work of the different national agencies involved in this project illustrates how the mix of strategies employed for transfer and going to scale needs to relate to the nature and scale of the practice – as well as the purpose. For example, more distance or more people demands more attention to the production of supportive or representative materials. The greater the scale, the greater also is the need for flexibility and adaptation to context in the long term, and for prescription in the short term, to ensure that new practices are genuinely tried and understood before adaptation takes place.

Planning needs to consider the question of how to balance the need to describe complex processes clearly, to embody them in engaging protocols or tools and the need to adapt innovations to meet specific needs in specific cases – the 'fidelity' question.

Before any innovation can move to scale, planners need to be aware that interpreters and implementers of new practice have to understand the essence of the practice to be transferred. They need to see what

effective practice looks like and how pupils might respond in order to know what can be adapted and what might be critical. Planners need to put support in place to help teachers understand why and how a practice works. This helps them to adapt it appropriately for their own context. Some agencies therefore also provide a framework to shape teachers' efforts in adopting and adapting practice freely and appropriately. If the boundaries are clear, interpretation and adaptation within them is less complex.

What approaches are being used on the ground to manage resource demands?

We can't get away from the evidence about the resource (money, time and attention) demands of combining deep transfer and take up. Both the research and practice explored for this project illustrate the ways that policy agencies have to balance transfer with take up efforts, given the inevitable resource constraints and policy timescales. Managing time to pay attention to the processes required for real change in knowledge, understanding and practice is difficult. There are examples on the ground of schools that have organised their activities to allow time for collaborative development and of how individual teachers have found time for coaching and collaborative working. Are we giving too much priority to funding and not enough to time and attention? For example, there was a clear consensus amongst the agencies that coaching and co-construction were change strategies with a high potential for achieving deep and sustained transfer. Yet they were also singled out as probably the most difficult to implement. This begs

> *"Before any innovation can move to scale, planners need to be aware that interpreters and implementers of new practice have to understand the essence of the practice to be transferred."*

a critical question: Should we be drawing on the collective experience of our schools and teachers to build an infrastructure of strategies for organisational development to support professional development? We know that, to make effective use of technology to support curriculum learning, teachers have, first, to build an infrastructure of technology skills amongst their pupils. Perhaps the same thing is true of innovation. Before we can expect to develop a culture of disciplined innovation should we not first build an infrastructure of skills and capacities for change?

Is going to scale the next logical step in a linear process for current transfer efforts or does going to scale need to be designed in to the innovation, from the start?

The messages emerging from policy and practice and from our research to date cluster around the importance of coaching, collaboration, ownership, co-construction, mediation and facilitation, plus a desire for a more comprehensive range of evaluation tools. Interestingly, and perhaps unsurprisingly given the resource demands and complexities we have set out here, the current picture features rich examples

of transfer but fewer examples of taking these to scale. Something interesting to emerge from the practical examples is the design of scaling up mechanisms into the practice being transferred. Hence the seeds of going to scale are planted in the practice from the outset. Examples would be the requirement that participants in the Teacher Learning Academy,[17] London Challenge, or AST programmes should coach other practitioners and demonstrate success in doing this publicly. Participants are not deemed to have successfully accomplished changes in practice or to have acquired new knowledge and skills until colleagues can show that they have learned from them. This is highly strategic because the very processes that are known to promote deep transfer (coaching, collaboration) are being simultaneously put to use as a recruitment tool and a means of reaching ever growing numbers of people. Are approaches such as these one way forward for the system to make use of peer working and practitioner expertise in going to scale?

How do we find the right focus?

The research evidence about the importance of choosing an appropriate evidence-informed focus with a clear link to pupil learning is strong. There were echoes of this evidence in our core examples too, particularly in the emphasis on co-construction, which enabled people on the 'receiving end' to relate new approaches to their own experiences and challenges. Is it possible to exemplify and map the range of characteristics of appropriate foci?

Segmentation – is it necessary or advisable to adopt a differentiated approach?

The commercial world does not expect the same product to meet everyone's needs in the same format. Indeed, questions about monopolies arise when businesses reach a 25 per cent market share; markets are often seen as saturated by a single product with as little as a 25 per cent share. Beyond that, businesses try to segment the market in order to understand customer needs in detail and to respond to them. For education, identifying meaningful ways of segmenting the system to enable us to target (or, should we say, personalise) transfer and scale up efforts may well be a worthwhile next step. It is conceivable, for example, that existing sector boundaries and structures act as artificial barriers to taking practice to scale. There is also growing awareness of the potential of practitioner identity (eg through subject specialism, leadership role, locale) rather than simply through schools per se for mobilising transfer and scaling up efforts. Targeting subject associations, middle management networks such as the GTCE's CPD co-ordinator network or the AST network, for example, may be one route to tailored segmentation.

Or to look at it another way – if the system was a class or a year group and they just 'weren't getting it' we would probably try a different way of 'teaching' them that meant paying particular attention to the learning needs of groups and individuals. This would involve some detailed needs analysis and the development of

individual strategies for sub groups and for those with special educational needs. For student learning, those strategies would be based on a careful pedagogic framework. For professional learners, they would take account of best knowledge about professional learning needs. For example, we would want to know if reform implementers:

- had focused on something that schools believed to be worth learning
- were building on what teachers knew and could do already
- were providing the expertise and support for teachers to acquire the skills they needed
- knew what they were looking for as outcomes and had communicated these
- had devised doable ways of measuring success.

"The ultimate goal of the project is to use the research and development activities to build a set of evidence-based guiding principles and practical, operational questions to underpin effective transfer and scaling up."

Planning principles for transfer and going to scale

All these questions are not rhetorical. Good answers to such questions have the potential to inform and transform policy making at every level, within school, between schools, at local, regional and national levels. We have made known some of the evidence base from research and practice of what's known about transfer and taking practice to scale, and highlighted some of the implications in this think piece. In doing so we hope to continue the debate and support the consensus building between national agencies that has taken place over the past ten months in the regional and national seminars. The ultimate goal of the project is to use the research and development activities to build a set of evidence-based guiding principles and practical, operational questions to underpin effective transfer and scaling up.

Full case studies and operational questions supporting this think piece are available on The Innovation Unit's website at:

www.innovation-unit.co.uk.

Our aim is that they become a useful planning tool for change and reform. We would welcome your ongoing comments and views.

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1 Cordingley, P et al (2003a, 2003b, 2005).

2 The large investment in the ESRC Teaching and Learning Research programme.

3 Examples include the General Teaching Council for England's Research of the Month website and the DCSF Research Informed Practice website.

4 Research evidence from studies by Gillies (2004), Gillies et al (2005).

5 DfES (2005) *Mentoring and Coaching for Learning: summary report of the mentoring and coaching CPD capacity building project 2004–2005*.

6 A teaching grade established to reward excellent teachers who wish to stay in the classroom, and receive paid time supporting other teachers develop their practice.

7 The Beacon Schools programme was introduced in 1998 to identify high performing schools and build partnerships between them to develop examples of successful practice, which Beacon schools would then be in a position to share with other schools.

8 Formative assessment.

9 Coffield et al (2004) *Should we be using learning styles? What research has to say to practice*, LSRC.

10 The measure of how far along the path of integrating information and communication technology in its work an educational institution has travelled.

11 British Educational Communications and Technology Agency, www.becta.org.uk.

12 Centre for Excellence in Leadership, www.centreforexcellence.org.uk.

13 Qualifications and Curriculum Agency, www.qca.org.uk.

14 Quality Improvement Agency, www.qia.org.uk.

15 Schools' Enterprise in Education Network, www.schoolsnetwork.org.uk.

16 Reading Recovery is an early literacy intervention programme designed for children who have literacy difficulties at the end of their first year at primary school. For more details see www.ioe.ac.uk/schools/ecpe/readingrecovery.

17 An initiative overseen by the General Teaching Council, which promotes and accredits professional learning and sharing of practice among teachers.

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This think piece is part of a national project that was commissioned by The Innovation Unit and, together with the accompanying case studies, is a major contribution to the debate.

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