

Promoting transformative innovation in schools

a Futurelab handbook



Key to themes

Futurelab understands that you may have specific areas of interest and so, in order to help you to determine the relevance of each project or publication to you, we have developed a series of themes (illustrated by icons). These themes are not intended to cover every aspect of innovation and education and, as such, you should not base your decision on whether or not to read this publication on the themes alone. The themes that relate to this publication appear on the front cover, overleaf, but a key to all of the current themes that we are using can be found below:



Digital Inclusion – How the design and use of digital technologies can promote educational equality



Teachers and Innovations – Innovative practices and resources that enhance learning and teaching



Learning Spaces – Creating transformed physical and virtual environments



Mobile Learning – Learning on the move, with or without handheld technology



Learner Voice – Listening and acting upon the voices of learners



Games and Learning – Using games for learning, with or without gaming technology



Informal Learning – Learning that occurs when, how and where the learner chooses, supported by digital technologies



Learning in Families – Children, parents and the extended family learning with and from one another

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FOREWORD

This handbook is the result of input and insights from a number of practitioners and policy makers in the field, empirical evidence and desk research. It arose out of the belief that in order to bring about the educational changes needed to support young people today, there is a need to develop cultures of transformative innovation in our schools.

We would like to thank the numerous experts from a wide range of fields who gave their time and effort to contribute to this report through our online surveys, workshops and interviews. In particular we would like to thank Brenda Bigland, Matt Buxton, Doug Belshaw, Mike Davis, Tony Fisher, Jennifer Groff, Avril Loveless, Michele Selinger, Nick Soucek and Kristian Still for their invaluable contributions. Any omissions or errors, however, are our own.

This handbook does not attempt to provide a definitive 'how to' guide to innovation, nor does it address the wider question of system-wide innovation. Instead, it aims to prompt debate around the nature and purpose of innovation in schools and to share approaches and tools that may promote innovative practice in schools.

Of course, any discussion of innovation in education necessarily opens up a host of related debates – from debates on the nature of curriculum and assessment, to debates on the identity and role of teachers and communities, to discussions about the relationship between research and practice in changing teaching and learning. We cannot begin to address all of these issues here, but many are covered in other Futurelab publications and we would encourage you to explore these through our website; in particular, the papers 'Personalisation and Digital Technologies', 'Enquiring Minds guide', 'Social Software and Learning', '2020 and Beyond' and 'Towards New Learning Networks' (see www.futurelab.org.uk/resources) map out some of the fundamental debates about the organisation and purpose of education that we feel are necessary for reimagining our education system today.

This handbook, however, simply explores the question 'why innovate?' in schools, and leaves it to the educators closest to the issues and opportunities to determine the direction and philosophy with which they wish to underpin their innovations.

If you have any comments to make, or suggestions about other projects and research we should be aware of, please do let us know.

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ABOUT THE RESEARCH

The research underpinning this handbook sought to explore examples of innovation, especially those utilising new digital technologies, to transform learning. In exploring these leading edge examples, we sought to investigate where teachers' creative ideas came from, and to understand what strategies and processes helped to communicate and embed the innovation. Our information is based on interviews with individuals identified by a wide number of key agencies and other experts in the field of innovation, who were consulted and interviewed at networking events, conferences and meetings.

Teachers were identified through discussion with key agencies (such as the SSAT and QCA) and further teachers identified iteratively through conversation with those teachers and through their own online networks. In total 40 innovative teachers were interviewed and surveyed using an online survey tool, phone and face-to-face meetings. In addition to these, workshops brought together expert practitioners, academics, industry members and policy makers to investigate the opportunities and processes for innovation in schools. All of the information gathering and analysis built upon an evolving literature search covering fields including: educational change; innovations in business and technology; teacher identity and development; design and development models; change management; measures of innovation; and diffusion/sharing of innovation.

SUMMARY

This handbook aims to offer evidence, insights, ideas and recommendations that can be built upon to support and nurture a culture of transformative innovation within education.

Increasingly it is recognised that there is a need to innovate to enable greater creativity, flexibility, learner input and so forth, and to deliver a more personalised educational system and foster new skills amongst learners. There is a need for transformative innovation in order to develop new relationships and ways of working, to update approaches, and to harness the collective social capital and skills of school communities to deliver better learning and teaching. This means challenging accepted practice and prevailing logic, which can place practitioners outside their comfort zone, as many changes that innovations may bring can often be disruptive and challenging in the short term. However, evidence suggests that innovation is not only necessary but can be exciting and rewarding and result in a whole range of benefits.

Numerous resistances or barriers to innovation have been highlighted, but many of these are perceptual, and with effective strategies, support and the right culture in place, many others can be overcome. There is significant room for manoeuvre within existing frameworks and policies to find space for innovation. By re-professionalising the workforce and empowering teachers to act as innovators, a range of skills and abilities are modelled to learners. Driving innovation also requires more imaginative use of resources, including the skills and abilities of learners, wider networks and innovators in other fields.

A range of tools and techniques also exist that can help foster creative thinking, problem solving and innovative practices, and emerging digital technologies also present new opportunities and social practices that can lead to more diverse and dynamic learning experiences by harnessing the potential of a networked society. A broader culture of innovation must be established, so that practice and skills can be shared and suited to local contexts and needs, and so that the development of networks and hubs of innovation can emerge to help disseminate and diffuse practice.

Innovations require a focus on new practice in line with broader educational visions, and there is a need for subsequent policy changes to facilitate greater innovation; however, there needs to be a shift of focus to a model of bottom-up innovation emanating from practitioners themselves to ensure a sustainable culture of change and development. A more open approach to the development, sharing and refinement of materials and resources also needs to develop, as this is more likely to encourage a set of localised solutions to educational challenges suited to particular contexts.

Innovation can be challenging and hard work, yet the rewards are plentiful. To innovate requires willingness to try new approaches, and this can lead to 'failures', but if innovation is seen as an iterative and ongoing process rather than a one-off activity, much can be learnt and shared from these setbacks. Ultimately the consequences of failing to innovate are far more serious: an education system that becomes outdated and fails to provide relevant educational experiences for learners.

1. INTRODUCTION

THE NEED FOR TRANSFORMATIVE INNOVATION

What are the strategies and tools we need to fundamentally transform educational practice and educational institutions to meet the needs of young people, teachers, communities and society today, and respond to the changes likely over the coming years? Too often we ask the question – how can we improve what we are doing? Or, how can we ‘modernise’ education? Too rarely we ask the question – how do we go about testing out and putting into practice fundamental change? Or, more precisely, how can we transform education?

This paper is not written to promote a specific direction for the transformation of education (our own preferred direction is articulated elsewhere). Instead, what we are presenting here is a set of ideas, possibilities and tools that we hope will support all of those who are exploring how to **fundamentally transform educational practice**; exploring how, in other words, to really innovate.



'Innovation', however, is an over-used word in the 'fast-paced, ever-changing, go-getting 21st century' – everything from toothbrushes to financial services are described as 'innovative' to the point that the word has become degraded and reduced to mean, too often, a simple incremental improvement or addition. This is not the sort of innovation we are concerned with here.

Instead, when we talk about the need for innovation, we mean the sort of **transformative innovation that challenges our assumptions about how we do things**. We mean developing creative approaches to problems, by asking questions about the status quo, about accepted practice and about the prevailing 'logic' that permeates the system. As Hargreaves (2000) argues, "you cannot have innovation without creativity", and creativity is not simply about incremental improvement, it is also a process which breaks down existing patterns of mind and develops new ways of doing and seeing things.

One useful definition for innovation is "the successful exploitation of ideas, generated at the intersection of invention and insight, which leads to the creation of social or economic value"¹. This definition stresses three important elements: that innovation is the exploitation of ideas (not just the ideas themselves); that those ideas are generated by mixing creativity and insight (including understanding the problem you are attempting to overcome); and that when applied, the new practice is something valued. This is the sort of innovation we are interested in here: radical and challenging (it asks questions about the underlying assumptions of education), informed by insight and knowledge of the problems that education faces, and committed to making a difference to the education system.

This sort of innovation is increasingly required in order to make the sorts of fundamental changes in educational practice that are needed to respond to social and technological developments.

For example, the changes in organisation of working and social life and in local and global relations that have been brought about by the use of information and communications technologies increasingly place demands on schools to change not only how they teach but what they teach, with an ever greater emphasis



being placed upon the development of creative, collaborative and thinking skills, amongst others. The economic imperative for the development of a creative and innovative workforce and set of practices has been made by many commentators, thinkers and Government bodies (see for example NESTA 2007; DIUS 2008). This sees a demand placed upon educators to engage in significant curriculum debates, to ask the question 'what is education for', and to change how education is organised in response to these questions.

At the same time, these information and communications technologies are also beginning to offer new approaches to accessing and sharing information². The possibilities are emerging for a much more diverse group of people to become content creators, editors and members of broader learning communities, to work with others beyond traditional boundaries and groupings, to connect to experts and

1. jburg.typepad.com/future/2007/08/one-line-survey.html. The description was shared as part of an informal network developed around Jon Burg's blog 'Future Visions'.

2. See for example: Opening Education: Social Software and Learning. A Futurelab publication looking at the potential of social software for learning (www.futurelab.org.uk/openingeducation). See also Futurelab's Learner Voice Handbook (www.futurelab.org.uk/handbooks).

learners with similar interests, to capture, store and tag data, and to share their work, reflect and discuss the learning processes with a range of others³.

There is a misguided perception, however, that the introduction of new technologies in classrooms automatically engenders the sorts of transformations in practice necessary to develop new skills and competencies amongst young people. This is not necessarily the case. New technologies offer great possibilities but ultimately they can just as easily be used to cement or embed existing practices, to modernise methods and processes, but do little to challenge the underpinning orthodoxy. As the OECD and many others have argued for many years now, to achieve new educational objectives and to fully exploit the new technologies able to support these, requires a fundamental reorganisation of curriculum and teaching in schools:

“Powerful tensions exist between traditional curricula-based on well-defined content and rules for students to learn and be able to reproduce – and the open, skills-based, student-centred approaches supported by ICT. Dominant curricular and organisational patterns in school were not designed for the Internet age, and often inhibit its effective use. ICT offers some gain for traditional curriculum delivery, but **its full educational potential cannot be realised without radical changes in school structures and methodologies.”** OECD, *Learning to Change: ICT in Schools* (2001), p15 [our emphasis]

These arguments have also underpinned many of the recent calls for personalisation of education. And indeed, the idea of ‘personalisation’ itself now implies the need to develop radically different relationships between teachers, learners, schools and communities. It suggests a reorganisation of schooling around the needs of individual learners; the requirement to develop new structural and organisational relationships between different educational institutions; the need to develop new professional identities for educators to support learners’ progress through multiple choices; and the need to empower learners to make informed decisions about educational trajectories. These needs will not be met simply through a process of ‘improvement’ or ‘modernisation’. Instead, as the Education 2020 Review argued:



“A system-wide strategy to help the teaching profession innovate, to do things differently in order to do them better, is key to transforming pupils’ learning and achievement, on which our vision is based” (p34)... “It also requires the education system to improve the way that knowledge about personalising learning is captured and transferred within and between schools, to create a system for educational innovation that is better able to meet the challenges ahead.” (p41)

It has been argued that we are moving toward a situation where “change in education may now be thought of as a constant condition, rather than an event”⁴. This is particularly true as new tools are developed, new social relationships evolve and new possibilities emerge. In developing skills in learners such as creativity, innovation and entrepreneurship, the role of the teacher theoretically moves towards that of an innovator, entrepreneur and creator of emergent knowledge, as opposed to that of transmitter of fixed curricula. These sorts of changes are those which Cornu (1995) suggests will be at the core of a “new professionalism” in teaching.

Currently, however, most teacher innovation tends to relate to what might be termed ‘sustaining innovation’, that is, changing the activities within a given structure, rather than adopting transformational or ‘disruptive’ innovation practices. In other words, currently most creative use of resources is applied to differentiate or to adapt pre-defined activities that usually sit within the National Curriculum, particular schemes of work, or perceived school requirements.

However, if we are to meet the challenges and opportunities presented by a condition of ‘constant change’, we need to consider how teachers can be empowered to innovate

3. For some examples, see www.futurelab.org.uk/projects/why_dont_you/capture.

4. Futurelab literature review: Teachers Learning with Digital Technologies: A review of research and projects, p5 (www.futurelab.org.uk/litreviews).

in 'disruptive' or 'radical' ways that may well challenge existing practice and lead to more transformational change.

Where the last 20 years or so have seen a movement away from localised innovation, today new freedoms and opportunities are beginning to emerge in guidance and policy, which may serve as sanctions and permission for this sort of transformative innovation.

For example, the QCA Big Picture Curriculum initiative refocuses attention on the goals of education and actively encourages educators to fundamentally rethink how they organise curriculum and learning in their schools. It promotes diversity in models of teaching and learning, and encourages exploration of new relationships between subjects, between teachers and young people and in the organisation of time and space. The changes at Key Stage 3 begin to offer a clear space for rethinking a whole raft of educational practices.

The UN Convention on the Rights of the Child is also beginning to permeate education policy, opening up the potential to argue for a reorganisation of the relationships between adults and children in the educational contract. The emphasis upon 'personalisation' and the new working relationships with children's services and extended schooling further create the opportunity to develop fundamentally new relationships between parents, communities, teachers, children and other education providers.

The Building Schools for the Future programme, and the Primary Capital Programme, all provide opportunities for school leaders and local authorities to radically transform the space and environments for education, and demand that educators ask challenging questions about the purpose and role of education in their communities.

At the same time, organisations such as the Specialist Schools and Academies Trust and Innovation Unit have both been established to promote innovation (in the organisation and governance of schooling for example) and have also repeatedly argued that schools have more freedom to innovate than they are aware of. The Innovation Unit, for example, used to run⁵ the Power to Innovate initiative which enables schools to apply to the Secretary of State to suspend regulatory requirements for a time-limited period so they may trial innovative approaches. Often, however, it is reported that

they find that schools are applying to them for permission to make changes for which they do not need to request permission. They argue, in fact, that schools have more freedom to make change than they currently believe.

While educators, familiar with a centralised model of decision making that has developed over the last 20 years, may understandably greet these changes and opportunities with a degree of scepticism, the fact remains that these institutions and policies do now begin to open up a degree of space for transformative innovation that has been lacking for some time. The question is – how might schools now respond to these opportunities?

In the light of these observations, this paper adopts a positive tone. Not only is there strong evidence of teachers' ability to innovate, there are also both opportunities and support for innovative practice emerging within policy and guidance, and there are clear and pressing social, educational and technological motors for change to encourage and sustain innovation.

This handbook then, starts from a position that educators are interested in achieving real progress in their work and that the challenge remains, after a long period in which innovation has been centralised, to rebuild the capacity and cultures of localised innovation in our schools.

We start, therefore, by discussing the practices and principles which have been identified as able to promote the creation of cultures of innovation in schools, based upon our interviews, workshops and desk research.

We then flag up a series of questions that educators might ask themselves at the start of this process. These are intended to act as a way of translating the research evidence into useful and practical tools for supporting change in schools.

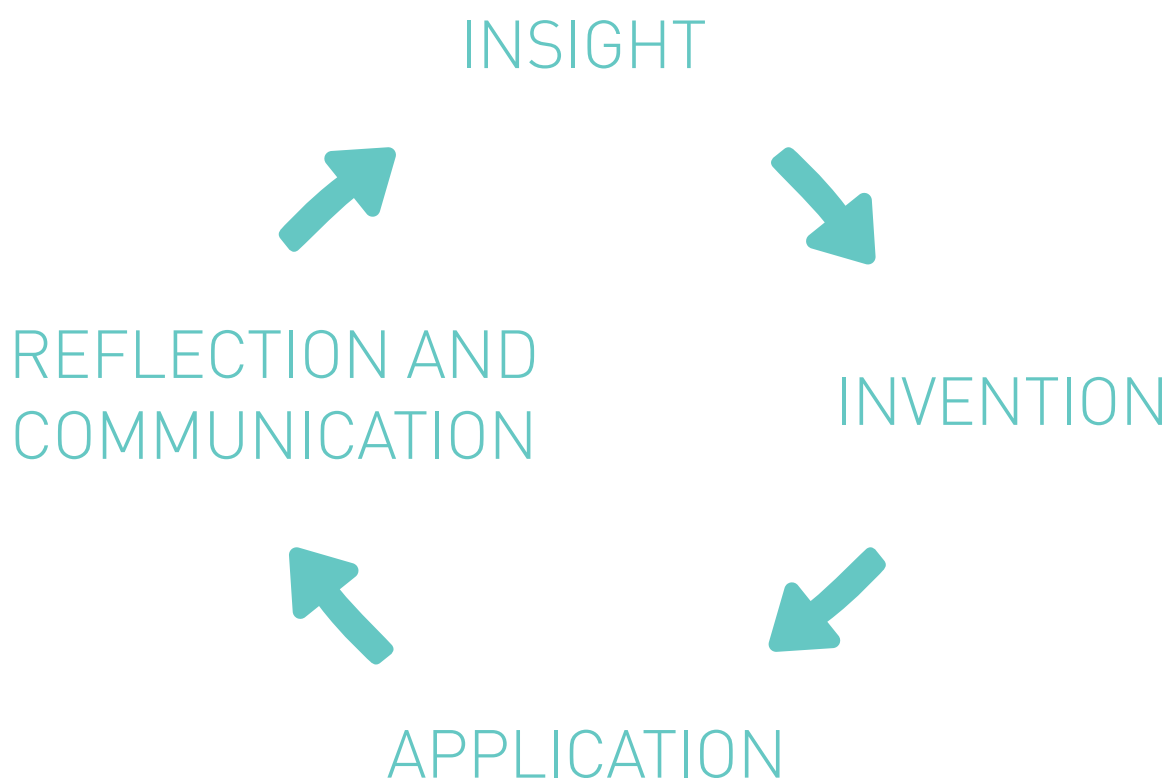
We then present a range of different 'innovation techniques' and tools that have been identified as potentially useful in the field. In the main, these techniques are focused upon challenging ingrained habits of mind and supporting the playful and creative exploration of new ideas.

5. The running of this initiative is now with the DCSF. See: www.teachernet.gov.uk/management/pti.

2. CREATING CULTURES OF TRANSFORMATIVE INNOVATION IN SCHOOLS

In developing this research, we interviewed and surveyed 40 teachers who have been identified as leading innovators; we ran workshops with experts in the field of educational change; and we surveyed the literature referring to change management and innovation in and outside education. In these discussions and reviews we mapped out over 300 distinct issues that educators and others identified as barriers to engaging in transformative innovation in education. These resistances were clustered around: risk, relationships, professional identity, ownership of change, tools and resources. We then returned to our interviews and the literature to explore the ways in which different educators, researchers and other innovators had successfully overcome these barriers in the past.

The following discussion provides an overview of inter-related strategies, principles and practices that may support educators to overcome these barriers in order to enable greater opportunities for transformative innovation in schools. We do not address here the more systemic developments that would be required at policy and system level to promote innovation, although we acknowledge their importance; instead, our focus is on identifying issues likely to be of significance to headteachers and classroom practitioners.



2.1 STARTING INNOVATION CYCLES IN SCHOOL

One of the key lessons from our review and consultation is that innovations often fail when they are perceived as not being aligned with the cultural values and beliefs of schools, when they are seen as externally imposed, or when there is a dependence upon external resources (including people) to enable changes to happen (Zhao et al 2002). For a culture of transformative innovation to flourish, therefore, it needs to be allied with, or develop from, problems or ideas that are central to the core values and goals of a school, its community and the people within it. With the initiative and drive coming from within a school itself, external support is recast as an aid to innovation and the innovation is supported by the momentum of the organisation.

This is a critical distinction from a model of innovation that focuses on 'best' or even 'next' practice or which seeks to promote simply a set of new ideas generated from outside the school. Instead, it suggests a different model, more akin to problem-solving, that is premised upon a cyclical, iterative and reflective process. This starts with insight into the problems, issues and opportunities faced by a particular school, and works through these, drawing in challenging insights and perspectives from others along the way, before leading to sharing of lessons learned, transformed practice in that setting and the development of new problems to be identified.

This implies the creation of a culture of innovation which is built upon cycles of **insight, invention, application, reflection and communication**:

- **Insight:** this starts with problem identification, building knowledge of the field and also exploring the routes for finding solutions and the tools to help deliver them. This is also a critical point for generating buy-in and support from a wide range of stakeholders in the identification of problems and issues, and for learning from others about the issues they have identified as important concerns or opportunities.
- **Invention:** this comprises creative processes of developing new ideas and challenging existing 'logic' or practices. It brings in diverse forms of expertise and knowledge to develop ideas. It necessitates different

and creative approaches and ways of finding solutions, as well as employing alternative methods and strategies for idea development and visioning the 'future'. This is a stage where many of the tools for creative thinking and visioning can be employed to break existing habits of mind.

- **Application:** the use of strategies and organisational structures to implement new approaches, including key issues around innovation diffusion and routes to successful implementation which may themselves require new practice to emerge. This is a stage when the model of leadership and management becomes critical to sustain and embed an innovation.
- **Reflection and communication:** ensuring strategies in place are effective, regularly reviewed and refined, and that they are disseminated to, and understood by, all those affected. Effective social and support networks need to be established to foster continued innovative practice. New ideas and opportunities may then be identified to begin the next cycle of innovation. This is a stage when the models of communication and networking are critical to ensure that innovations are diffused throughout the system – they are presented here as a joint activity as the reflections must be shared, just as much as the activity and aims.

This perspective of innovation as a cyclical process that is constantly in development, suggests a very different model of innovation from the 'transfer' of one good example of practice to another setting. And as such, it has a number of implications.

First, it requires seeing educators involved in innovation as professionally curious and exploratory, as individuals and groups who enquire into their environment and constantly seek to develop new responses to it. Second, it suggests a new approach to risk, in that innovations are not expected to 'succeed' at all costs, instead, as part of a cyclical process of development, 'failures' are critical to the learning process. And finally, it offers a communal and shared approach, in that defining problems, inventing new approaches, bringing in new ideas and embedding innovations are seen as collaborative endeavours.

Without this cyclical approach, too often 'innovations' are merely incremental and short-lived and a wider culture of innovation is unlikely to flourish. With this approach, however, openness to ideas is encouraged, the role of risk and failure is understood, exploration of problems and creative solutions are cast as enjoyable activities, and are intimately bound up with the development of new networks and relationships.

Essentially, this requires the development of a culture in a school which sees all members of that community as potentially creative:

"The creative force encourages people to be innovative and exploratory in their behaviour... If one accepts the benefits of creative approaches and one accepts that all people are capable of creativity and one wishes to develop creativity in teachers and their students, then one should affect the environment to favour creativity over entropy. A teacher can do this in his or her classroom by creating a safe learning environment for his or her pupils to explore ideas. A Headteacher can do this in his or her school by creating an ethos that is supportive of creativity." Brant (2006, pp27-28)

The remainder of this discussion will explore the different ways in which the creation of an environment that is supportive of creativity might be made possible. We suggest that this is dependent upon:

- _ distributed leadership
- _ champions of innovations
- _ new approaches to teacher learning
- _ networks and hubs
- _ strategies to manage and communicate risk.

Brenda Bigland, Headteacher at Lent Rise School in Buckinghamshire, states that a "team culture: 'where one goes, we all go'" is important. She goes on to explain that it is difficult to make the progress that Lent Rise has made unless the staff are enthused and brought along as accomplices. She believes strongly that the first step is the building of a culture, a supporting ethos, team work and risk taking. "It is not just about ICT. You could put anything into this school and it would work because we would do it together."

In Lent Rise everyone has the opportunity to lead. "When they are ready, they will tell me. They lead in their classrooms, as coordinators, project leaders, leaders on the charter mark, all the things that we need to do to keep validating ourselves. You can't get one person who leads everything; you have to make sure everyone gets that chance. One day people lead; next day they will support so that they understand both sides. I ensure that they get the credit and credibility for what they have done. They do the work; they get the accolades."

2. DEVELOPING DISTRIBUTED LEADERSHIP

Building a culture of transformative innovation premised upon creativity is not, clearly, simply about 'letting go' and waiting to see what ideas bubble up. Instead, it requires significant hard work, team building and leadership, as the example of Lent Rise (see boxout) suggests. Indeed, our review and consultation suggested a need for a fresh perspective on leadership, what it means, and how it might operate in schools to promote transformative innovation.

Hoyle (1976) highlighted two polarised forms of organisation in schools: a bureaucratic (hierarchical) model, categorised by fixed, rigid roles for teaching staff, clear and definite rules and hierarchical power relationships; and a non-bureaucratic model, which has fewer rules, structures, hierarchical and fixed relationships and has greater flexibility in terms of curriculum, approach and school policies⁶. When we look at the type of leadership required to promote transformative innovation, however, we see a need both for clear central management and for distribution of autonomy to diverse groups and individuals.

In practice, this translates into a number of key points:

1. Recognising that leadership of innovation may and can come from a range of sources

In a cyclical model of innovation, leadership needs to come from those who are as close to understanding the problems and opportunities as possible. This may include 'traditional' school leaders, newly qualified teachers, technicians, students, or anyone within the school community. Leadership may therefore come from those who have the passions and specific knowledge to lead change and the motivation to bring about improvements. The challenge is identifying and enabling those who are passionate, knowledgeable and able to influence others to promote change, and being open to the possibility that this may come from 'unusual suspects'.

2. Reviewing the role of senior management teams

While it is important to devolve leadership to staff and students, there is still a need for strong central management to ensure cohesion, rigour and diffusion of effective innovations. With empowered professional educators and students taking responsibility

for leading innovation, a management structure needs to be put in place that allows such a model to operate in a coherent and organised manner. This means that senior management has a clear role in actively promoting innovation across the school community, providing clear support, appropriate resources and communication channels. It must ensure appropriate success measures are identified, keep relevant documentation and also ensure impacts and lessons learnt are disseminated and celebrated. It may also play a critical role in creating permission for radical change by facilitating system-wide communications, and managing the risks around innovations (see later section on risk).

3. Exploring new models of leadership that operate outside existing structures

Outside education, we are seeing a rise in new models of ideas generation and dissemination through movements such as Creative Commons⁷. These are also facilitated by social software tools and online communities such as www.twine.com, www.fellowforce.com, www.diigo.com, that can help sharing contacts, information and processes. In respect of education, these tools and practices offer new possibilities for learning within communities which enable teachers and students alike to create and share content, ideas and approaches. Seely Brown⁸ refers to the "new forms of apprenticeship" that occur on the internet, where young people learn a practice through creating, tinkering, sharing and building on one another's creations. This new kind of apprenticeship takes a different view on the way in which people learn from those around them.

One longer term implication of exploring new models of leadership and the use of online tools to support this, is that learners and teachers can take on the role of developers and designers, developing their own networks, information literacies and tools for innovation. This can even be taken a step further if teachers and pupils become involved in the trialling and development of new prototype technologies, forging links with industry, which in turn adds a greater relevance and impact to the activities. Distributing leadership opens the possibility for multiple channels and partnerships to be built with the wider community, and for greater cross-fertilisation of ideas between educators and diverse sectors.

6. See Somekh et al (1997) for a more detailed description.

7. creativecommons.org

8. www.johnseelybrown.com

2.3 ENABLING CHAMPION(S) OF INNOVATIONS

Promoting a distributed leadership model is also related to the process of uncovering and promoting those who have a desire or capacity to act as 'champions of innovation' in a school. Champions of innovation are critical to the success of transformative innovation, as they have the passion and desire to overcome resistances because they are strongly motivated to share their approaches. In practice, champions play diverse roles in mobilising and enabling transformative innovation:

- they identify opportunities and challenges
- they drive projects through and keep them going
- they scaffold conversations with other stakeholders and bring people into the vision
- they help minimise and share risks
- they share findings and impacts internally and externally with other innovative practitioners or networks
- they sustain and diffuse the innovation
- they help colleagues and students to develop their own innovative practice or projects.

These activities are critical to the success of any innovation and are often very difficult to achieve. Indeed, it is likely that many of these activities will provide insurmountable obstacles if they are not confronted by individuals and groups with a real passion and motivation to make change. This is why the role of the 'champion' is critical to ensuring **transformative** innovation is able to happen – without that motivation, change is likely to be incremental rather than fundamental.

Talking with a wide range of innovative teachers as part of our research, it became clear that they emerged as champions of innovation because of their desire and beliefs, rather than in response to a 'formal' role position. Where they were most successful was where they were able to mobilise the people, time, space and resources to support change; where they were able to listen to diverse perspectives and be supportive of the wide range of practices that develop in innovation; and where they had a wider understanding of the potential applications of their innovation to support longer term educational change.

School leaders have a responsibility, then, not necessarily to 'appoint' innovation champions, but to understand how to support and encourage them where they emerge, and to ensure that they are able to access the resources, perspectives and bigger picture to help translate their enthusiasm into shared practice. Importantly, however, this is not a recommendation to necessarily identify a school 'innovation champion', rather it is a recommendation to nurture the diverse passions, interests and motivation of different teachers as they identify different problems and solutions they wish to develop.



2.4 RETHINKING TEACHER LEARNING

“If educational change is viewed as a complex system, it emphasizes the need to accompany change with a framework for long-term teacher learning because change is, in essence, learning to do something differently, involving adjustments to many elements of classroom practice.” GF Hoban, *Teacher Learning for Educational Change: A systems thinking approach* (OUP 2002), p39

The principle of promoting and nurturing teacher creativity and the capacity to champion innovation goes to the heart of debates on the identity of teachers as professionals, and the types of teacher development, training and learning that schools may wish to promote in order to encourage the initiation and uptake of transformative innovation.

A significant barrier to transformative innovation identified in the research literature and consultation was that a teacher’s role is often perceived, both by teachers themselves and by others, as that of ‘practitioner’ rather than intellectual educationalist able to identify problems and work with others and with research to develop their own solutions (Clandinin 1986; Eraut 1994). Research shows that such perceptions affect the type and delivery of training and professional development, as well as teachers’ actual capacity to innovate (Kompf et al 1996).

It is often reported, for example, that professional development can be dislocated from practice, be inappropriate, non-transferable, siloed, lacking in support from management, poorly financed, a one-off activity, with tools and opportunities to sustain the practice unavailable. Moreover, it is often based around targets or ideals relating to immediate concerns and therefore can in fact be ‘conservative’ or regulatory rather than transformational in effect. The focus upon pragmatic approaches that mirror those found to be successful elsewhere, often described as ‘best practice’ or ‘good practice’, can also undermine the development of more customised and suitable solutions. This model of professional development is underpinned by a notion of a teacher not as a creative professional enquirer, who needs to be supported to develop her own solutions and responses to problems, but as a practitioner, whose role is not to initiate change and respond to their assessment of need, but to deliver existing ideas of practice irrespective of contextual distinctions.

For a culture of cyclical innovation to develop, this perception of teachers and the consequent emphasis upon de-contextualised professional development must change. One way of envisaging this change is to explore the concept, drawn from studies of technology development, of teachers as ‘end-user innovators’.

Eric von Hippel (2005) describes end-user innovation – that created by practitioners – as the most important and influential form of innovation. He argues that empowering end-user innovation encourages teachers to freely reveal their innovations, using methods such as those found in open source communities, often sharing them with others within networked communities. This process of sharing practice has similar intended results as ‘best practice’ approaches but is continually reborn and developed through use and need, rather than through a hierarchically organised system. Essentially, for transformative innovation to occur, teachers need to be empowered to innovate through distributed leadership, to be given a role in mobilising change and to try alternative practices and approaches and share them with others – the process of sharing that transfers ownership of the innovation becomes fundamental.

Another approach is to re-design professional development completely. Adey (2006) for example, promotes reflective professional learning premised upon the “freedom for teachers to innovate” rather than following predetermined programmes, and which acknowledges that:

“...there are no short-cuts or quick fixes, and anyone who desires to make real changes in schools has to be prepared for the cost and effort of professional development programmes lasting months if not years.”

This suggests the development of models of professional learning which are intimately tied up with ongoing cycles of innovation and development as part of the everyday work of teachers. The need, then, is for professional development to provide challenge and support ‘in context’ and to create cultures in which ideas and possibilities are widely discussed, explored and tested in practice. The shift towards a ‘Masters level’ profession, with the consequent emphasis upon the development of research and enquiry skills, would seem to open up possibilities in this direction.

This is not to suggest that teacher learning should become wholly inward facing. After all, the evidence suggests that teachers need a whole set of inspirational and creative resources and examples that show evidence of benefits and impact before they will change their own or more broadly accepted practice (Snoeyink and Ertmer 2001; Cox et al 1999; Yuen and Ma 2002). Teacher learning therefore needs to create opportunities for and promote acceptance of the exploration of a wide range of different ideas, tools and practices. The highly innovative teachers we worked with were characterised by a tendency to investigate new tools and approaches from a diverse range of sources, including: exploring ideas emanating from sporadic personal networks; personal investigation; incorporating their investigations in other areas of professional life (for example post-graduate study); using recommendations from agencies, press and colleagues; and linking to established innovative networks. Any change in professional development also needs to specifically address aspects such as confidence, risk-taking, professional vision and broader relationships to changes in education and society more generally.

As well as playing a role in nurturing the dispositions and capacities of teachers to innovate, professional learning also needs to be integrated into the cycle of innovation in schools so as to increase the likelihood of wider adoption and adaptation. In order for this to be successful the following principles need to be in place:

- the school culture needs to strongly support ongoing professional learning to allow time for innovations to be explored and adapted as part of practice
- innovative ideas and possibilities need to be connected to local and specific circumstances, and potential for adaptation and change needs to be built into the exploration of the ideas
- leadership and management teams need to be supportive of ideas and open to new approaches and practices
- professional learning needs to be informed by wider debates on the nature, purpose and potential future changes in education in order to provide an informed context in which to measure the appropriateness of innovations
- measurements of success for innovations need to be judged against a far richer set of criteria than existing student performance criteria. They need to be considered in the longer term, and also in relation to their wider impact on the culture and practice of the school.



2.5 NETWORKS AND HUBS

“Innovations happen at the intersection of disciplines. The problem may reside in one domain of expertise and the solution may reside in another.” Karim Lakhani

Sustaining and developing cycles of innovation in schools requires educators to look beyond the boundaries of subject areas and schools to diverse networks and resources. There are a range of ways in which these networks play important roles in refining and sustaining innovation (and, perhaps more importantly, in maintaining the confidence and morale of innovators trying risky and challenging things).

To manage information

Teachers are faced with a plethora of initiatives and messages emanating from a range of external organisations, which present problems both of information management and of distinguishing between what is merely new and what is fundamentally transformative. The innovative practitioners interviewed in our research highlighted the importance of identifying mediating organisations, agencies and individuals able to give an insight into cutting edge and future practice. They identified the need to think critically about much of the advice offered on best practice, and to consider whether it is a conservative force rather than advice that stimulates innovative practice. They also identified the importance of using these trusted agencies to filter the diverse examples of practice that exist in order to showcase what was truly distinctive.

To help share successes and failures in safe spaces

It is important for practitioners who are seeking to introduce new and innovative approaches to participate in networks or communities which are also encouraging of innovation. Opportunities for both informal and formal sharing of ideas, approaches, broader visions and reasons for innovation, successes and failures are essential to the development of ideas and to ensuring that knowledge is transferred and sustained. These networks may not only be virtual or outside the school, but informal communication channels in particular are vital, providing space and the right environment to engage in open and honest ideas sharing that can develop trust and questioning between colleagues. Resources exist that readily allow learners and teachers alike to investigate and think about key issues

and challenges in new ways⁹ within schools or amongst a wider community. See for example www.bubbl.us; www.grupthink.com; www.stixy.com¹⁰.

To stimulate the development of new ideas

Many networks or communities in education are quite narrowly focused. It is worth looking at networks in different sectors, subjects, disciplines and fields to find greater inspiration and variation in approaches that can act as a stimulus to original practice. There is greater likelihood of transformative innovation if practitioners draw on all the potential resources around them, and this includes utilising skills, tools and knowledge of a much broader community. Examples can be found at www.schoolofeverything.com, www.deviantart.com, nextgen.ning.com.

To develop opportunities to work with different sectors and disciplines

“Allowing different sorts of knowledge, disciplines and expertise to collide produces the spark of a new idea and what’s needed to turn it into an innovation.” Towards Education for Innovation (Hargreaves 2000, in Reiss et al), p6

While networks and online resources allow educators to share experiences of their individual work, this is not the same as developing opportunities to actively work with others from different disciplines and perspectives. In attempting to develop truly transformative innovations, it is likely to be important for educators to find (or create) opportunities to work together with others from a wide range of different perspectives, as it is only through the processes of collaboration and co-working that the real distinctions in perspective and understanding become visible and refined.

9. For examples, see www.futurelab.org.uk/projects/why_dont_you/explore.

10. For an overview of these and other such resources visit www.futurelab.org.uk/projects/why_dont_you/network.



This might include, for example, finding opportunities to participate in 'incubation spaces', consisting of diverse individuals from different fields who are collectively interested in creating social innovations. Such spaces can enable practitioners to find out about new opportunities and ideas being tried out, share their own innovative practice and ideas, and give and receive help and support for getting projects off the ground. They can act as a catalyst for change, offering support and information that can mediate perceived risks through linking with a dynamic network of practitioners who have experience in approaching things differently.

The multi-disciplinary approach to design fosters greater detail in the development of ideas, encouraging collaborators to share reasoning and approaches as much as final decisions. The development of such hubs can also lead to new partnerships and the creation

of tools specific to local needs. The notion of a hub, therefore, is a place where a range of approaches are shared together to give a broader picture of change and development, exemplified by physical and virtual sites such as **the-hub.net** and **www.moreinspiration.com**.

Where access to such hubs is difficult, opportunities to collaborate with non-educators such as artists or scientists through projects like Creative Partnerships can offer the opportunity to look at old problems with fresh eyes. In other cases, identifying shared problems across subject areas, around which people can come together to work on within a school, can also serve to foreground the multiple ways in which individual problems or issues might be challenged – how could techniques and ideas from science teaching inform thinking about PE? How might drama approaches transform questions of pastoral care and exclusion? Finally, simply creating a hub that brings together different age groups and different stakeholders to explore ideas and challenges might offer some of the same opportunities to work on issues from multiple perspectives (Grant 2008).

To share innovations and get feedback

A key reason to participate in diverse networks is also to contribute to the general pool of resources and support that will help to promote local and national 'ecologies' of innovation. This sharing needs not only to communicate the outcomes of innovation (as in old 'best practice' models) but also to communicate the principles and reasons for the innovative practice, in order to better help others to decide whether and how to adapt and appropriate it for their own specific circumstances. It is, in essence, important to share the culture, principles and approaches of practice through networks and hubs of innovation, as much as the content of the practice itself. Traditionally there has been some reluctance from teachers in sharing their work with others and making it more publicly available. However, this is an essential ingredient if innovation is to be diffused across the system and have the greatest impact. This might be viewed as more of an 'open source' approach where the innovation, no matter where it emanates from, is seen as being owned by the community, who can use, share, edit and amend the innovation depending on their needs and circumstances.

2.6 RISK AND RISK MANAGEMENT

“There is always the risk that as a teacher you are accountable for the success or otherwise of any innovation – if it goes horribly wrong for example... some teachers are often encouraged to take risks, many schools that stand out from the norm are schools where things are often done differently.” Secondary teacher

There were significant resistances to innovation identified by teachers, research and policy makers which could be characterised as concerns about the ‘risks’ of innovation: the risk of failure, risk of wasting time, risk of expenditure that couldn’t be justified, risk of criticism from parents, inspectors, governors or students, and so forth. All of these risks are real and serious concerns, and need to be addressed in order to facilitate and promote innovation. A number of key strategies were identified through our consultation:

Practical risk management

There are practical strategies that can be implemented to manage risk. At a practical level, always piloting and prototyping rather than moving to wholesale change, will allow lower risk taking. Ongoing monitoring of impact and distinct ‘break points’ allow innovators to keep a close eye on developments and identify any issues emerging. Again, if teachers, students and schools are working and aligning themselves with other innovative practitioners and networks, they will also be able to learn from the lessons of others, reducing risks on an ongoing basis.

Get stakeholder buy-in

Taking early action, identifying supporters from within and beyond the school, drawing on evidence, and developing clear methods and approaches to communication become extremely important in managing risk.

“There was a slight risk that in the early stages the project might not be acceptable to a minority of colleagues. If that minority was too large there would be no ‘critical mass’... my strategy was of working firstly with willing individuals in all departments and we soon were able to ‘court’ the few more hesitant individuals.” Secondary teacher reporting risk management approach

Engaging with and getting buy-in from a wide and varied range of stakeholders for new approaches from the outset is essential, not only because it makes the success of the innovation more likely, but because potentially there is also a greater pool from which to find solutions. Moreover, they widen the investment in the innovation, share some of the risks and increase the likelihood of innovation diffusion. All of this becomes particularly important when there are significant financial and resource investments required, and also where there might be conflict between the stability of traditional practice and the disruptive nature of the innovation.

Develop appropriate success measures – more diverse

It is critical to understand, when beginning any innovation process, the sorts of success measures that the innovation is working towards and to ensure that these can be measured using appropriate techniques. Often, when attempting truly fundamental changes, different evaluation measures from those that are traditionally accepted may be necessary. It is important not simply to state that existing measures won’t be sufficient, but to articulate, in ways that can be understood by stakeholders and collaborators, the sorts of evidence of change and impact you are looking for. This may require the development of novel techniques – involving young people as researchers and informants, or the use of video and other data collection techniques. Whatever is selected, however, needs to allow you to fully explain the impact of the innovation in ways that can be easily understood by the community you are hoping to influence.

“If you are evaluating, learning from mistakes, negotiating, listening – and you have an exit strategy – then risks are calculated ones. Even when the stakes are high, you use the resources to learn and move the organisation forward. Risk cannot be avoided and shouldn’t be. It is risks that arise from work that has not been properly thought through and shared that should be avoided.” Teacher reporting approaches to risk management



Creative approaches to managing costs

Innovation is often perceived as having a cost because of the lack of time and funding that is available to investigate new approaches and ideas. However, with the support of leadership teams, there are ways in which teachers can find time to trial new approaches. Creative approaches to timetabling, providing cover and changing the focus of lessons to actually explore the innovations with learners as an exploratory learning activity or related to aspects of the curriculum, are just a few of the possibilities. Examples can be seen at national level in approaches such as Opening Minds¹¹, Enquiring Minds¹² and work undertaken within the QCA's co-development network¹³.

Accepting risk of failure as part of the process

Truly innovative environments acknowledge that failure is likely to be part of many attempts to develop new approaches. The point at which failure becomes a cost to a system, is the point at which nothing more can be learnt and transformed into new practice. If there is no ongoing cycle of innovation, in which failures can inform new approaches, then the cost of failure is unacceptable as it will have had no benefits. If, on the other hand, all failures serve to provide more information, evidence and opportunity for professional learning, then the costs of failure are balanced by the benefits it offers to the system.

Making visible the risk of 'doing nothing'

What is often overlooked when the risks of innovation are discussed, is the risk of 'doing nothing'. At a time when there are significant socio-economic, technological and cultural changes in progress – at a time when we know we do not yet meet the needs of all young people today – the risks of 'doing nothing' may need to be more clearly and loudly articulated.

11. www.openingminds.org.uk

12. www.enquiringminds.org.uk

13. www.qca.org.uk/qca_5857.aspx



3. WHY TAKE THE RISK?

Our interviews, workshops and desk research emphasised the extent to which engaging in transformative innovation was personally and professionally fulfilling for many of those involved. From existing evidence, just some of the benefits resulting from the creation of cultures of innovation in schools include:

- _ enabling schools and teachers to adapt to new circumstances, environments and 'educational climates'
- _ improving professional skills and developing new practices
- _ empowering professionals, giving them more responsibility and ownership over both problems and solutions
- _ embedding innovation at the local level and sharing solutions with others
- _ developing the practice of co-design, involving others in finding solutions
- _ giving others a voice in the development of approaches and therefore greater understanding of choices and alternative methods of problem solving
- _ modelling innovative behaviours to learners to enhance creativity and problem solving techniques
- _ forming closer relationships with learners and other stakeholders as co-designers and problem solvers
- _ understanding local needs but engaging with diverse educational and non-educational populations to find solutions
- _ greater understanding of the wider context of media and tools development and the alternative possibilities, messages and approaches that can and have been adopted.



There is no doubt that attempting to challenge the status quo, attempting to find ways around the often frustrating constraints in which schools need to operate, and creating space to think about the 'big questions' that face education, is hard. But what is also clear, is that for those who are involved in these cycles of innovation on a day-to-day basis, this activity is both rewarding and, in their eyes, critical to the future shape of education in the UK. Indeed, many of the innovative teachers interviewed made clear the deep sense of ownership and value they placed on their innovations.

Many also reported being very angry about the ways in which so much potential for using innovations to support effective learning and teaching was lost or limited because of the demands of a rigid, exam-orientated approach to the curriculum. Many felt it was their "responsibility to take the children, the staff and the community [they] work with and for into the 21st century".

There are many examples of innovative approaches and transformative practice, despite both real and perceived constraints, which suggests there is space and opportunity for innovative action given the support and drive to do so, but for this sort of practice to flourish requires the development of communities and hubs that can transfer and share insights, so a bottom-up approach to transformation develops.



4. QUESTIONS TO CONSIDER FOR EDUCATORS

This section takes the general issues we have discussed so far and translates them into a series of prompts for educators to consider when approaching the question of how to develop and promote a culture of transformative innovation in their school. These questions will, for many educators, be familiar and many will already be developing their own answers; some questions, however, may be new to all or a useful starting point for those just beginning the challenging process of exploring how to instigate fundamental educational change.





Starting cycles of innovation

- Looking at past innovations in the school, how successful have they been in stimulating, embedding and sustaining truly innovative practice? Were these innovations shared more widely across the school and wider communities?
- What mechanisms or forums are in place to discuss and share new practice?
- To what extent have past innovations worked with or attempted to challenge the status quo?
- Will your planned innovative practice have maximum impact? Does your innovation have the constituent components of insight, invention, application, and reflection and communication?
- Have you developed a broad and compelling vision? Have others 'signed up' to it or co-authored it? How can you best convince people your innovation will have a beneficial impact?
- Does your innovation challenge 'conventional wisdom' and existing 'logic' or practices? Have you been creative in developing scenarios, asking questions such as 'What if...?'
- Have you tried starting with an ideal answer to a problem and then attempted to radically think through alternative ways and means of getting you there?
- Is there a clear ethos of innovation? How might such an ethos and related set of working practices be stimulated?
- How will you build on successes and failures and share this with a wider network?
- Have you explored a range of techniques to stimulate innovation, creativity and problem solving?

Developing distributed leadership

- Have you explored the whole concept of leadership and what this means in different aspects of education?
- Have you considered alternative distributed leadership models for different areas or aspects?
- Could pupils, parents, members of the wider community or local business be given leadership opportunities?
- Can and should leadership be distributed more widely amongst staff?
- How much autonomy do different groups in the school have to identify new approaches to education that they would want to explore:
 - Heads of department or year?
 - ASTs?
 - NQTs?
 - Teachers?
 - Students?
 - Parents?
- Should there be a designated lead or leaders dealing with aspects of innovation?

Enabling champions of innovation

- Should you identify those individuals or groups best placed or most willing to explore and promote innovation in your institution?
- Can time, space, resources and training be made for such individuals?
- Are there appropriate mechanisms available for them to share their findings, approaches and innovations with others both inside and outside the institution?
- Do they have the opportunity to learn from others and practice occurring outside the institution?
- Have clear problem areas or challenges been identified that require innovative solutions or approaches in order to ensure any innovation has a clear and tangible purpose?

Rethinking teacher learning

- Do approaches and resources relating to CPD also offer opportunities to support research and enquiry?
- Does training and CPD activity focus on future practice?
- Does it account for longer term transformation in practice, culture and learning needs?
- Has a clear message about the need for training and innovative practice been made and understood by other staff? Has this been shared with other stakeholders in the wider school community?
- To what extent does current CPD in the school integrate with ongoing activity?
- Are there clear opportunities to incorporate new learning in practice and for mentoring and knowledge transfer amongst staff?
- Can or should other outside experts be used to deliver training, especially those related to innovation and transformative practice, rather than the more traditional training providers?

Networks and hubs

- Have you identified a range of innovative organisations, networks or communities who you can learn from and share your ideas with?
- Have you looked at networks in different sectors, subjects, disciplines and fields in order to get new ideas?
- Can you build upon both professional and wider networks – formal and informal – that staff, parents or pupils are involved with? Is it possible to asset map the various networks people are linked into?
- What opportunities are there to work with different communities?
- What opportunities for problem solving and joint working are available across subjects?
- What forums are there for joint working with students, staff and parents?
- Is there time and resource for staff or pupils to identify appropriate networks and links to innovative groups, practitioners, organisations or individuals?

Risk and risk management?

- Has a network of other innovators been established or involved to increase the likelihood of support and sustained innovation?
- Have broader measures of impact been considered other than the existing and predominant measures?
- Do measures of impact draw on future educational or societal directions?
- Is the innovation understood and well communicated?
- Is it adequately resourced and supported?
- Are there clear contingency plans in place for risks identified?
- Are there clear mechanisms for sharing the plans for innovation with other experts or interested parties who might offer support or solutions?
- Is there a clear ethos that accepts that innovation is difficult and may not always be entirely successful? Is there a method by which all the findings and lessons from innovations can be built upon?

Why take the risk?

- Have you thought through the longer term consequences of not innovating in relation to areas for educational improvement and modernisation?
- Can innovation and innovative practice be seen as a broader and ongoing aspect of professional development, wider educational transformation and also capacity building for the institution?
- Will existing practices, organisation and relationships be appropriate for education and for learners in the future?
- Can innovation and the related practices and processes be mapped against curricula, wider skills and competencies and incorporated into day-to-day learning opportunities for learners?



5. TOOLS TO SUPPORT INNOVATION

While creating cultures of innovation in schools is dependent upon the fundamental cultural and structural issues outlined above, there are also sets of tools and resources that can assist at various stages in the process. It is essential to do some investigation and background reading in order to find the tools and resources that you feel suit your situation or approach best. Techniques for stimulating innovation and creativity are numerous and varied and can also take time to perfect. However, if they are delivered well and shared they can become transferable skills that have positive effects in other areas of school life, which can help to stimulate a broader culture of innovation and creativity within an institution.

Before dismissing such tools and techniques, it is worth reflecting that our experience, existing practice, culture, habits and so forth, often guide us towards certainty and something that closely resembles existing and proven practice. If we are really interested in transformative innovation, however, we have to challenge these habits of mind and may need to develop more systematic approaches to moving ourselves out of comfort zones and opening ourselves up to a whole range of alternative possibilities. The short selection below is taken from a wide range of tools in this field, and is intended to help us to find new innovative approaches.



Do Nothing

Do Nothing is a technique that is used to help explore and evaluate the benefits of certain actions by first investigating the possibility of not taking any action to overcome a problem or issue. It is a simple technique can help to identify unnecessary actions by offering a different perspective.

www.futurelab.org.uk/projects/why_dont_you/talk/do_nothing

DO IT

DO IT is an acronym that stands for:

- _ Define problem
- _ Open mind and apply creative techniques
- _ Identify best solution
- _ Transform.

This is a framework that helps as a guide through the early to mid-stages of idea conception and generation, including problem definition and solution identification. This framework helps to create links between different activities and helps to ensure that appropriate techniques are used at different stages to create a time-effective change programme.

www.futurelab.org.uk/projects/why_dont_you/personalise/do_it

Attribute 'Cherry Split'

Attribute 'Cherry Split' is an attribute-listing technique that helps to break a challenge or problem into its component attributes, which can then be tackled separately. This is a straightforward yet effective technique that is useful in identifying solutions in a creative way. This technique helps to simplify the process of dealing with complex problems and challenges, and also to approach the problem or challenge in a different way that could help to highlight unforeseen issues and offer a better understanding overall. By breaking it down into its component attributes it is easier to see how aspects of a problem interrelate, and also what is necessary to overcome them.

www.futurelab.org.uk/projects/why_dont_you/explore/attribute_cherry_split

Affinity Diagrams

This technique helps identify connections between issues that are otherwise not apparent, and provides the opportunity to focus resources on these areas. This technique will help to highlight relationships and resistances between elements of an activity that might otherwise not be obvious. It is a low-cost

group activity, and requires only a visual tool such as a flipchart, whiteboard or overhead projector. To begin with, the group is asked to focus on specific projects/activities, and to identify important elements around or between these projects/activities. The next task is to cluster these together according to intuitive relationships such as similarity, dependence, interdependence, resistance, communication. Discussion around these ideas should be encouraged throughout.

www.infodesign.com.au/ftp/AffinityDiagramming.pdf

BHAGs (Big Hairy Audacious Goals)

This approach is about creating over-reaching goals that are challenging and provoking, with the aim to strive towards overly-ambitious goals whilst recognising they may not ever be achieved. The intention is that in aiming for such an audacious goal you will surpass your initial expectation by some way.

en.wikipedia.org/wiki/Big_Hairy_Audacious_Goal

Advantages, Limitations and Unique Opportunities

Advantages, Limitations and Unique Qualities is a technique consisting of several stages that in turn:

- _ explore possible solutions to a specific problem
- _ identify the advantages and disadvantages to selected solutions
- _ distinguish the unique qualities of the solutions.

By dissecting each solution into its component parts, the most valuable or desirable aspects of each solution become apparent and the focus can be placed on synthesising these together.

www.futurelab.org.uk/projects/why_dont_you/talk/advantages_limitations_unique_qualities

Scenario Testing

Scenario Testing is a technique that helps to test developing concepts through a dissemination and evaluation process based around various scenario cards. The cards are provided to the participants by the facilitator, and reflect a series of potential scenarios as envisioned by the facilitator. This process encourages an outside and critical evaluation of the ideas explored and used within the scenarios, and this fresh perspective can help to highlight areas that require further development not identified by the facilitators.

www.futurelab.org.uk/projects/why_dont_you/talk/scenario_testing

Alternative Scenarios

Alternative Scenarios is a technique derived from Scenario Planning, which is a strategic planning method used to help inform flexible long-term plans. Alternative Scenarios encourages participants to explore and forecast future scenarios in order to enhance their understanding of the way that environments and circumstances may affect certain problems, practices or strategies. Through the process of imagining and exploring changing circumstances, this technique helps to demonstrate how specific problems and strategies are potentially more or less relevant.

www.futurelab.org.uk/projects/why_dont_you/personalise/alternative_scenarios

Go2Web2.0

The significance of Web 2.0 is that it reflects a shift towards web-based applications; that is to say they are encompassed by the web browser and don't need installation locally. Go2Web2.0 offers a substantial listing of over 1,000 Web 2.0 applications, and acts as a searchable directory of free web-based and web-centric applications. The list is set up as a grid of icons, and clicking on a webpage's icon will bring up a link and a short description of the website's function as outlined by key terms. The list of websites can also be searched/filtered with these key terms.

www.go2web20.net

Photo Elicitation

This approach uses images as the starting point for conversations. By using photographs of the school, the local community, problem areas or more general images, the approach asks participants to describe problems and invent solutions based upon observations of the images. The observations can be literal or more creative. Digital tools can also support this process, for example see www.mapanno.com.

Mindmapping

This is a popular technique to bring together lots of ideas at an early stage of a project. There are many resources that can assist in developing this approach, as well as digital tools such as www.bubbl.us and www.stixy.com.

A Day in the Life

When asking students or teachers to undergo new activities or practices, such as asking them to incorporate new technologies into their practices, it is valuable to spend time with them throughout their entire day to see what kinds of inherent problems occur in the

relationship between their daily routine and their environment, for example looking at the practical aspects of pupils interacting with the technologies around them. This is especially useful in order to see what participants actually do within a real context as opposed to what they claim to have done in retrospect. The participant's own account will often overlook aspects of their practice that they take for granted, and through a form of subjective observation these particular activities can be observed and then later prompted in a retrospective discussion. This approach can also make apparent positive and constructive practices that were otherwise taken for granted. Identifying these can help teachers and students to structure their environments more effectively.

www.futurelab.org.uk/projects/why_dont_you/talk/day_in_the_life

Superheroes

Superheroes is an imaginative and highly participatory brainstorming technique that, using fantasy role-play, encourages participants to think broadly around a specific problem. Participants take on the roles of fictional (or real) superheroes, and use their characters' particular traits to solve the problem. The process of thinking outside of the norm can help lead towards the exploration of ideas that might not have occurred otherwise.

www.futurelab.org.uk/projects/why_dont_you/personalise/superheroes

YackPack

This is a tool to support the recording and sharing of live and pre-recorded voice conversations between individuals and groups. It is intuitive to use and easy to manage different conversations, providing the opportunity to structure, facilitate and capture all manner of speaking and listening activities.

www.yackpack.com

Compendium

Developed by the Knowledge Media Institute, as part of Open University, Compendium is a sophisticated concept-mapping tool – users can construct maps composed of different nodes, and from each node both internal and external resources can be directly referenced. Suitable for use by both individuals and groups, Compendium helps to manage information so that it can be explored visually. Compendium is available as a free download; all that is required is to install the application on your local machine. There is a full set of resources

available on the website that includes fairly comprehensive tutorials and training. Despite looking daunting at first, the application becomes very easy to use, very quickly.
kmi.open.ac.uk/projects/compendium

Eyejot

Eyejot is a new web service that allows users to send video messages really quickly. Rather than relying on text, users can record a video message, annotate it, and send it to anyone. Eyejot is a client-free online service and the platform. The interface is similar to an e-mail box except the messages that you're sending (via e-mail) are videos rather than text.

eyejot.com

Google Docs

Google Docs provides free online tools for word processing, spreadsheets etc that, due to their web-based nature, allow multiple users to work on the same documents at once. One of the strengths of Google Docs is that it attempts to compensate for a time when multiple users are editing the same place in a document at the same time.

docs.google.com

Grupthink

Grupthink provides an online space where users can ask open-ended questions and receive a wide variety of answers from either their own created groups (classes, year groups, thematic etc) or from all people using Grupthink. Where this may provide a huge number of conflicting responses, the social tagging element of the site provides a method to navigate the (potentially) vast number of responses – as whilst providing their own answers, users can also rate other contributors' answers.

www.grupthink.com

Further sources of ideas, tools and techniques

Some renowned thinkers have a wide array of materials to stimulate creative and innovative approaches. Famously, Edward de Bono (www.edwdebono.com, www.debono.org/main.html), for example, has used the 'six thinking hats' technique for problem solving, but he has also developed a wide range of practical tools and approaches for inspiring creative ideas, thinking laterally and promoting innovation. From his perspective, creativity and lateral thinking can be learnt, rather than being unique qualities only some people are born with.

Others, such as John Adair (www.johnadair.co.uk) and Paul Sloane (www.destination-innovation.com), focus more on leadership for innovation and mobilising and establishing the conditions for creativity in organisations and business.

In education, it is often worth looking at different classroom approaches or activities that can inspire new and interesting approaches to ideas generation¹⁴. Futurelab has also collected a number of other tools and techniques that can be applied to provide new approaches and opportunities for learning and teaching¹⁵. Many of these support visioning, alternative approaches to problem identification and solving, and practical ways to involve others in creative processes.

There are resources that offer practical tools and approaches to alternative classroom practice¹⁶, or approaches to partnerships in education¹⁷ that bring new opportunities to rethink accepted or traditional practice. It is also worth (re)considering alternative systems of education and different pedagogies¹⁸ to get new ideas, as well as thinking about how other sectors and fields approach learning and teaching.

¹⁴. See the following for inspiration, ideas and approaches to promoting innovation: What If? Innovations Company (www.whatifinnovation.com); IDEO (www.ideo.com); Engine Group (www.enginegroup.co.uk); Winning Moves (www.winningmoves.com).

¹⁵. See Futurelab's bank of collected tools and resources (www.futurelab.org.uk/projects/why_dont_you), and also NSBA Toolkit (www.nsba.org/sbot/toolkit/cav.html).

¹⁶. See for example the Enquiring Minds guide (www.enquiringminds.org.uk/pdfs/Enquiring_Minds_guide.pdf).

¹⁷. See for example Creative Partnerships (www.creative-partnerships.com).

¹⁸. There is a wealth of resources on alternative forms of education. For concise overviews see for example: Carnie, F (2002) *Alternative Approaches to Education: A guide for parents and teachers*, Routledge Falmer. Schemes also provides a useful overview to alternative educational approaches: schome.open.ac.uk/wikiworks/index.php/Educational_approaches.

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SSAT 'A New Specialist Education System: Transforming Secondary Education' states that schools should be confident to innovate and change practice to find solutions to learning challenges, and points out that schools often have more freedom and flexibility than they realise. It identifies four key areas, namely: curriculum, teachers' pay and conditions, governance and organisation and funding. Visit www.teachernet.gov.uk/makingadiff

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About Futurelab

Futurelab is an independent not-for-profit organisation that is dedicated to transforming teaching and learning, making it more relevant and engaging to 21st century learners through the use of innovative practice and technology. We have a long track record of researching and demonstrating innovative uses of technology and aim to support systemic change in education – and we are uniquely placed to bring together those with an interest in improving education from the policy, industry, research and practice communities to do this. Futurelab cannot do this work on its own. We rely on funding and partners from across the education community – policy, practice, local government, research and industry - to realise the full potential of our ideas, and so continue to create systemic change in education to benefit all learners.

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Drawing on Futurelab's in-house R&D programme as well as projects from around the world, these handbooks offer practical advice and guidance to support the design and development of new approaches to education.

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About Becta

Becta is the government agency leading the national drive to ensure the effective and innovative use of technology throughout learning. It is our ambition to utilise the benefits of technology to create a more exciting, rewarding and successful experience for learners of all ages and abilities, enabling them to achieve their potential. We do this in many ways. We make sure the right technology is available, we influence the development of policy, and we set standards and provide tools that help establish and promote best practice. We know that technology has the potential to transform learning. We are committed to inspiring education providers to realise that potential, and equip learners for Britain's future success.

