AERA SYMPOSIUM 2003

Incubating 'Real Time Learning':
The role and nature of Real Time Learning in Networked Learning Communities

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Abstract

This paper outlines the concept and emerging practice of 'real time learning' within the Networked Learning Communities Programme. Networked Learning Communities (NLC) is a large-scale, publicly funded, practitioner led, 'development and research project'. The design of the programme and its aims are set out in the accompanying papers within this symposium.

Real time learning aims to be a knowledge generating and knowledge sharing set of processes and relationships which can help to meet the context-specific needs of practitioners working in school to school networks and the wider needs of a larger scale national programme aiming to improve attainment outcomes, meet some of the objectives of an ambitious national reform programme, and help to provide policy-makers with lessons about what constitutes effective, capacity-building intervention. The conceptual framework has been built on a synthesis of the principles of collaborative practitioner enquiry, action research and emergent forms of 'knowledge management'. It is not designed to meet the conventional requirements of large scale academic research, but to be complementary to, and to draw on, the forms of knowledge which such research generates.

As such, it may present a challenge to established conventions of academic 'rigour' in relation to the generation and use of knowledge about what forms of pedagogical strategy and organisation are valuable in seeking to improve student attainment outcomes. Clarifying this challenge is important, because it establishes a set of shared understandings between the practitioner community (represented by NLCs) and the researcher community, the value of which should be self-evident to all. The strategy is ambitious, and we are in the early stages of developing and implementing it. The most contested issue remains how knowledge generated through 'real time learning' could be used to inform policy making in a dynamic and fast-moving decision-making environment.

Context

In order for the Networked Learning Communities programme to play its full part in the wider ecology of government school reform efforts, it must find ways of contributing systematically to the learning capacity of schools, networks of schools, and policy decision-makers. We aspire to do this by modelling a systematic approach to learning which is capable of providing an ongoing flow of information and useful knowledge between groups of practitioners; and between practitioners and policy makers. This is the approach we call 'real time learning'. As a methodology for knowledge creation and knowledge sharing, real time learning is far from being established or accepted. The process of its development and incubation is therefore also subject to internal as well as external evaluation, using conventional academic research and evaluation procedures.

Problems of knowledge generation, validation, and transfer

The aim is to find ways of overcoming existing limitations on the use of valid knowledge about how to improve student attainment outcomes associated with existing methods of evaluation and dissemination. These problems are widely familiar, though not often well understood. Put briefly, they are:

- The difficulty of generating robust evidence about effectiveness in **timely** and **context-specific** ways. The dominant method of large scale evaluation; longitudinal, random sample assessments including control groups, currently favoured both by academic researchers and by governments, suffers from well-established problems of timeliness if the intention is to provide practitioners with valuable guidance about how to improve and develop their own practice. Similar problems from large scale evaluation also arise from the difficulty of making general and generalisable findings applicable to very specific contexts for teaching and learning. (We are, of course, aware that academic research can embody a multitude of research methods and methodologies, and that there is a long and rich literature exploring issues of applicability, authenticity and reliability).

- Difficulties of **transfer**. Even where valid knowledge about effectiveness exists, it is notoriously difficult to persuade many practitioners to adopt it systematically in the development of their practice. This is partly a problem of dissemination; where the use of linear, mass dissemination strategies favoured by many governments seems particularly ineffective at gaining purchase on everyday practice (for a fuller account see Hargreaves, DH, Creative Professionalism; the role of teachers in the knowledge society). It is also a problem of teacher organisation and culture, for example the relative organisational isolation of everyday teacher practice and the relatively low take-up of new methods of communication and information access among teachers.

- Problems of **complexity**: the massive growth of available knowledge and information associated with the increasing knowledge-intensity of industrial societies economies and the impact of information and communications technologies (ICTs) means that there is vastly more information and knowledge potentially available about any specific aspect of teaching and learning. Arguably, the capacity to handle such volumes in purposeful and effective ways by individuals and organisations has not increased in parallel with this change. As a result, while focused drives to increase the use of evidence in specific priority practices, such as the teaching of numeracy and literacy may prove effective, the challenge of building systems capable of drawing on the best available knowledge and evidence across the range of pedagogical activity remains emphatically unmet.

- Specific challenges of **evidence informed policy.** In the fields of government and public administration, we have seen a steady growth of interest and organisational innovation dedicated to the challenge making policy decisions better informed by valid evidence about effectiveness. In the UK, possibly the most visible example of a programme explicitly designed around an evidence base is Sure Start, a national anti-poverty strategy modelled partly on the US Head Start programme. Across the range, however, recent years have seen many attempts to integrate valid knowledge more explicitly into the policy process. Relevant efforts include the creation of the National Educational Research Forum, the National Institute of Clinical Excellence, and expansive use of small scale 'pilot' and 'pathfinder' programmes to test out new approaches before national implementation. Despite the growth of such efforts, the fact that policy decisions must be made in real time, with limited and imperfect information, and are influenced by a wide range of considerations including political ones, means that 'evidence' in the conventional sense often plays a marginal role in specific decisions. The problems of transfer, context and timeliness discussed above are equally applicable to the knowledge-processing activities of large bureaucratic systems of administration, however, sensitive they are to the need for better evidence. (see Chapman, J, 2002, System failure; why governments must learn to think differently, Demos, London, for a fuller account of the challenges of public policy making in complex systems).

The concept of real time learning
Real time learning should be understood fundamentally as a capacity building process. The 'capacity' in question relates to the ability of school-level practitioners to generate and make use of valid knowledge about how to improve student attainment, through their own development of strategies for enquiry and improvement. Simultaneously, the development of larger scale networks of schools (and other partners) implies that the creation of lateral, network-based relationships of collaboration and knowledge exchange will contribute both to

- the capacity of network members to access valuable knowledge relevant to their own performance objectives and learning needs, and to
- the capacity of 'whole systems', including at the level of local and national governance, to foster innovation, encourage more effective practices, and learn systematically about what is effective under various conditions, and how to support it.

It is hoped that Rapid, ongoing sharing of information and emergent learning from and between NLCs will become generative of future decisions

- for 'networked learning' within every NLC,
- for 'networked learning' at a programme level,
- for practice informed policy making that is facilitative of 'networked learning' between schools.

As Michael Fullan and many others have argued, the need for continuous improvement in performance by schools creates an ongoing demand for ways to reconcile the processes of enquiry-led, 'inside out' change sustained by school-based leadership and culture with the pressures and stimulus of external resourcing, intervention and support. Many of the knowledge resources needed to sustain powerful improvement and radical innovation in teaching and learning lie beyond the boundaries of individual schools, as do many of the accountability and performance management frameworks which determine their resourcing and formal status. Real time learning aims to encourage processes which can help to intertwine and reconcile these twin sets of pressures, while developing both the scope of the enquiry and exchange processes (across larger networks) and the level of infrastructure and policy learning (at district and system level) which can be subject to similar processes of interdependent improvement and collaborative learning.

In other words we are simultaneously developing the capacity for 'networked learning' between schools *and* working at a meta-level to draw learning for the wider school system, in the same way that NLCs draw learning for their individual schools and their network of schools.

This definition of real time learning warrants further explanation, as the terminology is used with a specificity and theoretical precision that is particular to the programme:

Rapid – In a fast changing world, organisations need the answers to today's problems yesterday, rather than tomorrow. Put another way, we need to begin to draw our learning from anticipations and questions about the future, rather than solely from the past, if we are to accommodate the complexities of multiple change environments. Schools, LEAs, and government agencies engaged in such change processes invariably have an urgent need, therefore, for immediate information. Policy at every level is increasingly required to be based on 'good enough' information rather than 'ideal' information. The pace and pressures of improvement within education are so great that leaders are

no longer in a position to wait for knowledge to be externally verified or for external longitudinal evaluation studies to be concluded before they can act.

Generative – Traditional modes of knowledge-sharing e.g. symposia, conference papers, and websites are remarkable for the low impact that they have on professional and organisational practice. The NLC programme aims to stimulate learning through the creative application of learning principles to the artefact forms by which knowledge is represented and the modes of use through which engagement takes place.

'Nested' – The purpose of NLCs is to enable schools to share their learning in relation to classroom practice, adult learning, leadership learning and organisational development. However, NLC is a 'nested' programme in which each level in the programme learns from one another. These levels range from: classrooms, schools, NLCs, the whole programme, and policy makers. 'Real time learning' is the means by which NLCs learn about the work of other NLCs. It is also the means by which the administrators of the programme and policy makers can learn about the learning occurring at a school level. As such it is a process of meta-learning.

In order for real time learning to be rapid, generative and 'nested', NLC uses enquiry processes as the means for data collection and analysis at a programme level.

By using enquiry processes at a programme level, we hope to model rigorous enquiry practices and thus create capacity within schools and NLCs for collaborative practitioner enquiry.

The NLC programme was designed to grow this capacity for enquiry within and between schools because it has been demonstrated in many school improvement programmes around the world that collaborative practitioner enquiry develops:

- o **Knowledge for improvement:** Enquiry is a means of understanding context. Improvement needs to be based on knowledge of each school.
- o **Leadership capacity:** Enquiry creates energy for change. Knowing leads to the desire for change. It follows therefore that enquiry can generate leadership opportunities at all levels in the organisation.
- o **Organisational capacity:** Enquiry is a social activity that increases the organisational capacity of schools.
- o **Human capacity:** Enquiry leads to professional development for the individuals concerned
- o **Moral purpose:** Enquiry demonstrates that all people matter in an organisation. Enquiry avoids blame cultures and seeks to establish collective responsibility.

Although each NLC has committed to collaborative practitioner enquiry, within and between their schools, many have yet to develop the capability to do this. Similarly, we are currently discovering that the need to build this capacity for

within schools is matched by the need to build the capacity for collaborative enquiry among the programme's own fieldworkers.

Each individual NLC has committed to collaborative practitioner enquiry within and between its schools. The purpose of this is to encourage innovation in classroom practice, collect data relating to the effects of these improvements, and revise the innovative practice as part of an ongoing cycle of reflective action learning.

The collection of enquiry data might typically include attainment data, peer observation records, or qualitative attitudinal data from students. Most schools and NLCs have yet to develop the capability to do this systematically and rigorously. It follows that there is a great need for differentiated support for schools from the fieldwork team employed by the programme.

Few, if any, NLCs are currently able to organise local level practitioner enquiries that involve more than one network of schools. However, the programme itself is in a position to collect and analyse data from all the NLCs and feed back the findings to participants in order to enable informed reflection, comparison and future development. Furthermore, the programme aims to collect data from participants in ways that are generative of learning at the point of collection. It also aims to involve participants in the process of analysis in away that is contextually relevant and generative learning at a local level. In this respect the programme seeks to build capacity for learning at every stage in the process by modelling a participative approach to collaborative enquiry. The challenge for us as a programme is to operationalise this strategy in a way that is fast, generative and meets the needs of multiple audiences.

The practice of real time learning
The adoption of enquiry processes at a programme level requires a large team of fieldworkers who are responsible for collaborative collecting and analysing data about 'networked learning' and for developing and facilitating 'networked learning' informed by the knowledge generated from their own collaborative enquiry. The process of enquiry at a programme level follows a familiar enquiry cycle [adapted from Calhoun]:

i.   Identify a focus: Each month all NLC facilitators are directed by NCSL to adopt a common focus/lens to their facilitation work with schools.

ii. Collect data: They are provided with a common set of enquiry questions that shape their engagement with NLCs. They are provided with guidance on how to collect data and from whom they could collect it.

iii. Organise data: They are provided with a common writing frame, to present their data.

iv. Analyse data: There is then a process of collaborative data analysis by which each individual present their data and together the group makes sense of their findings and identifies issues of relevance and significance.

v. Take action: Finally, the outputs of the programme-wide enquiry are represented in formats designed to stimulate action. These outputs are both tangible and published and can be used by any practitioner within the programme and are intangible and form part of facilitators' own practice.

The generation of rich data from fieldwork is possibly the most important part of the real time learning strategy. However, the programme also has other sources of enquiry data for the whole programme:

- **NLC submissions database** A database of terms extracted from text submitted by NLC when they were competing for NLC status.
- **Client relationship database** A dynamic, updateable record of all contact between the programme and each school in every Network.
- **Official public data -** school performance data (SATS, GCSE, Ofsted scores) and membership of existing partnerships (EAZ, EiC etc.).
- **Events database –** not only will this hold data on who attends seminars, conference and events, but it will also hold data collected from participants at those events both about the events but also crucially about the work of NLCs in schools. This data will be collected incidentally from learning activities in which participants take part.
- **Levels of Learning Survey database** – a quantitative dataset produced from 2500 questionnaires returned from every NLC.

The reliance of 'real time learning' on enquiry processes as a means of knowledge generation, may present a challenge to established conventions of academic rigour especially when considering that policy makers are one of the intended audiences. In the next section we discuss the issue of rigour in relation to knowledge generation through real time learning.

Real time learning and rigour
NLC is a 'Development and Research' project. The programme seeks to:
1) Stimulate and develop action-learning in schools,
2) Collect data, artefacts and images about the actions and the learning,
3) Analyse data, circulate artefacts and generate knowledge in ways that might stimulate future development
4) Make available, use and apply that knowledge to stimulate further action, animation or learning in schools.

To this end, NLC has invested in a team of fieldworkers responsible for both the development activity and the data collection activity. Similarly schools have committed to stimulating new activities and collecting data about those activities. For this knowledge generating process to be sufficiently rapid, generative and collaborative, it may be that it needs to develop a set of

protocols and standards which are different from those traditionally associated with academic research and evaluation.

The challenge is in part related to the need to integrate within a single, interconnected set of processes the tasks of facilitation, coordination, formative evaluation, knowledge creation and exchange. The national NLC programme has developed an integrated 'Network Consultancy' function, alongside its 'Learning Exchange' model (see below) in order to meet this integrative challenge. The goal is to provide forms of support for network and strategy development which are contextually specific, while embedding the emerging networks in a wider set of knowledge and learning resources whose use will in part be 'demand led'. This integration of processes which support 'many to many learning' requires facilitators and the teams supporting them to deal successfully with many different kinds of activity; synthesising, scanning, data collection and sorting, communication via a number of media and formats, and so on. The challenge of establishing the right 'thematic priorities' to capture and bring together diverse experience and support the ongoing development of networks with rich and valuable knowledge resources is ongoing.

Clearly, received definitions of academic rigour do not capture the full complexity of activities, purposes or contexts with which such a learning strategy will have to contend.   We are seeking, therefore to develop an equivalent and complementary form of rigour - 'programme rigour', which will produce knowledge and knowledge-handling capacity of value within the context of a large-scale, publicly funded, practitioner led, development and research programme (like Networked Learning Communities). The goal is to build programme capacity which can help to provide 'good enough' knowledge to support the ongoing improvement of network-based learning activities in timely, accessible and transferable ways, while retaining and developing the ability to produce meaningful 'meta-level' analysis and lessons that assist in shaping future policy and research priorities.

While traditional criteria for evaluating the rigour and value of academic research are appropriate within academic contexts and for circumstances requiring a certain degree of empirical certainty, they can be inappropriate or even counterproductive in others. We believe that research and enquiry processes and outcomes should be evaluated with reference to the purpose of the activity and the needs of the intended audience rather than simply to general or institutional criteria of technical merit.

That said, we also recognise that to apply knowledge generated through the application of programme rigour *as if it were* academically rigorous is potentially dangerous. However, to criticise informed collaborative practitioner enquiry for lacking the academic rigour of conventional research is to confuse the needs of academia with the purposes of practitioners. Such activity should not be academically rigorous, but instead needs to be rigorous within the context and purposes of the programme, hence 'programme rigour'. Our belief is that questions raised by this approach to development and research will join a much wider debate about the uses and forms of knowledge both in

different kinds of community and in governance and systems of public provision. In that sense, the real time learning approach should be understood as an embryonic attempt to bring together various forms of knowledge in the service of improving and reshaping specific existing systems of educational institution and endeavour.

Programme rigour implies a contextualised (though not totally relativised) understanding of validity and reliability. Real time learning activities entail data collection and analysis that are valid for the purposes and pace of the programme, reliable for the context of NLCs and meet the needs of the intended audience i.e. practitioners and policy makers within the programme.

As a capacity building activity, real time learning must ensure that the process of data collection is valuable to participants at the point of collection. The programme has already found that many validated research tools are often inappropriate for our purposes because they are not generative of learning for the subjects of the enquiry.

Moreover, the programme is seeking to model good enquiry practices that are replicable by practitioners in their own unique contexts. Many existing research tools require high levels of technical expertise, or hours of data entry and statistical analysis before anything of value can be achieved. This is unfeasible within a UK school context.

Crucially, the programme does not have control over the methodological conditions under which data collection takes place. The programme is based on a model of partnership between NCSL and over 1000 schools. Negotiating consent, entry and participation is a crucial element of the fieldwork team. Who a facilitator is able to meet, interview, or observe each month is contingent upon so many local factors. For this reason, our approach to sampling is best understood as 'contingent sampling' rather than 'representative sampling'. In is the best sample available – and in this sense the knowledge that is produced has to be 'good enough'.

Large-scale surveys, like the Levels of Learning questionnaire, are administered by teachers many of whom may be inexperienced in such activities. The programme is dependent on schools accommodating such interventions and administering them as best they can. It is save to assume that data is collected in different ways in different schools, even when using a standardised data collection instrument. Typically we would seek to triangulate data but often we would triangulate one set of perception data with another. Similiarly, we always pilot our methods but are typically constrained by time and resource.

Conclusions: unanswered questions

This approach requires the use of a range of evaluation, data collection and analytical tools and methods, many of which are dedicated to shaping and supporting rich, focused enquiry processes at network level.

This draft paper has not attempted to synthesise or bring out empirical findings from the early stages of our development and research programme, but to set out the issues and components which have informed the design and development of a learning strategy.

Appendices 1 and 2 set out the major components of the 'infrastructure' through which we are seeking to support networked learning in practice. The next stage of development is likely to involve an intensive focus on understanding the *ways* in which these different activities, fomats and forms of 'learning interface' come to be used in the service of many different and overlapping enquiry and innovation processes. It is likely that this stage will help to uncover a new set of complexities and dilemmas in seeking to synthesise and integrate so many different strands of knowledge, information and experience, and to apply them to programme development and to the evolution of a national policy agenda. We are confident that it will also provide important lessons, and potentially radical innovations, about the practices and organisational capacities needed to further the potential of whole educational systems to learn from, and for, themselves.

April 2003.

Appendix 1: Knowledge sharing: Face to face and online
One of the ways in which NLC operationalise real time learning is by bringing people together on a regular basis to learn from and with one another.

These include
- o Residential seminars for NLC facilitators,
- o Termly conferences for NLC coleaders, associate consultants, and N2N consultants,
- o Regular seminars for practitioners and policy makers
- o An annual international think tank
- o Biannual conferences for Headteachers, university and Local Education Authorities representatives.
- o An annual conference for policy makers and practitioners from across the programme

The intention is that participants will learn from one another about the processes of networked learning and the content of NLC pupil learning foci e.g. thinking skills, or school transition. This is one very explicit attempt to enable NLCs to learn from one another.

The focus of these learning events should be driven by the priorities of NLCs. They provide the programme with an important opportunity to collect qualitative and quantitative data from participants in the programme, they also offer opportunities for participants to process and analyse data on the behalf of the programme, as well as opportunities for the programme to model ways of sharing knowledge with participants in generative ways.

Talk2Learn provides a virtual environment for network-network learning through asynchronous, secure communications that will reduce the impact of the opportunity costs for participants and generate many-to-many connections that we could never achieve through alternative strategies. We are developing an 'extracted learning' strategy which will summarise, encode and analyse debates on T2L to contribute to what we know about Network development. NCSL also supports a website which connects users with the resources of the Internet in an interactive environment.

Appendix 2: The Learning Exchange
The Learning Exchange is both a metaphor for the way 'real time learning' works and a physical entity where much of that work occurs. At the heart of the concept the Learning Exchange is the understanding that both words in the phrase 'Learning Exchange' are nouns and verbs:
- The creation and maintenance of a series of physical assets will constitute the noun.
- A coherent set of knowledge management processes, IT applications, meta-data (e-GIF and e-GMF compliant), and opportunities for communication will constitute the verb.

Current plans include:

Library, a resource base for those interested in exploring the theories and practical outcomes of networked learning. The library will be largely virtual, drawing on the networks of the interlibrary loans tradition and subscribing to electronic databases and journals on behalf of participants to reflect the geographically dispersed constituency of the Networks it serves. It will also provide a focus for the academic research that exists within the Programme.

Video Booth for recording video diaries. Digital images and sound will be loaded directly onto a secure server and can be edited and emailed, broadcast via the Internet, coded, analysed and stored.

Videoconferencing Suite initially connecting NCSL's offices in Cranfield and Nottingham, but we are also investigating possibilities for connecting schools, Universities, and NCSL affiliated centres to each other.

Seminar Rooms will make use of interactive whiteboards and digital projection. Video recording, streaming and conferencing will be available and live web casts will be possible.

Creativity Lab through a partnership with the Department for Trade and Industry, we aim to enable facilitated, software supported brainstorming.

Product Development Forum is responsible for commissioning, and finalising all learning materials that represent the Programme. Facilitators represent NLCs, but will also refer to NLC Co-leaders and other participants as part of a practitioner peer review process. The Research Team will be constantly engaged in gathering case study and survey data and will feed these into product development through their representation on the Forum.