National College for School Leadership

Learning networks research legacy

Pupils' experiences of learning in networks

Non Worrall, Christopher Noden, NCSL
with a conceptual framework by Charles Desforges

Pupils' experiences of learning in networks

Non Worrall and Christopher Noden, with a conceptual framework by Charles Desforges

Contents

1. Conceptual framework

The management of pupil experience in education is always embedded in ideas about the relationship between mind, school and society. These ideas, although often deeply implicit and taken for granted, have, under a variety of forces, changed radically in the short history of mass state education and created new challenges for all concerned with schooling.

In this introduction we trace briefly the most significant of recent changes in thinking and practice regarding learning as these have impacted on pupils. From this account we produce a description of how pupils' classroom experience of learning has evolved developmentally.

The large classes of the earliest state elementary schools dictated teaching practices that became customary. Teachers dominated the proceedings. Pupils were drilled in what were taken to be the routine skills of basic literacy and numeracy. Learning was assumed to be no more than 'being taught' (Watkins, 2005). Reduction in class sizes over the first century of state schooling, from 100+ to 40+, made little difference to custom and practice, which in any event were endorsed and validated by early developments in the scientific study of the mind. Early psychology, from Herbart through to Skinner and the modern behaviourists, had the learner doing what the teacher directed. Knowledge so far as pupils were to be concerned, resided in established texts, the contents of which were to be placed in the receptacle of the pupils' minds by a process of transmission mediated by their doing the teacher's work. The work regime was designed in the light of the then understanding of associationist psychology. The key implication for the pupils was that they must engage in large quantities of sequenced routine and practice to establish correct responses and habits.

This model of learning as classroom work still obtains to a significant degree. The model has, through our common experience of schooling, become part of folk psychology, resting on taken for granted assumptions about teaching and learning. In this common or 'folk' understanding, knowledge is 'stuff'; learning is getting to know your stuff; teaching involves stuffing minds which, until taught, are largely empty and in this sense ignorant (Bruner, 1996). Examinations are a process of inventory or stock-taking for which pupils should cram. Differences in pupil attainment are accounted for by differences in their will to cram (volition) or in the capacity of their minds (intelligence). Acts of pupil creativity or inventiveness are explained away as caused by the unusual attribute of 'giftedness' (Ericsson, 2002).

Several trends have exposed the inadequacies of this thinking. In no particular order of significance, these forces include: findings from educational research which exposed the limitations of the model of learning as 'doing classroom work'; advances in our understanding of how minds work and of the major

drivers of schoolroom progress; developments in the philosophy of knowledge; deepening understanding of the interconnectedness of school and society; continuous political pressure for enhanced standards of school achievement to meet the demands of modern society; and advances in practice of cutting-edge professional teachers.

The limitations of traditional classroom experience and of the work metaphor for learning have been exposed in a large number of studies (Marshal, 1988). There are surface attractions in seeing ranks of pupils earnestly engaged with a flow of teacher-set work. Under the surface, however, a number of severe limitations emerge. Research has shown that the order is built through subtle processes of negotiation between teachers and pupils in processes dominated by the assessment system. The system is risk averse, especially where the assessment is high stakes (Doyle, 1986). Teachers set large amounts of routine work that the pupils perform in exchange for grades. Pupils see their task as 'doing the teacher's work'. We ask them, "What did you *do* at school today?" Little time is deployed on problem-solving tasks because the outcomes are too risky. Pupils might not achieve standard grades in assessments and this threatens classroom order. The curriculum is covered but not necessarily understood. However well pupils do in tests, material is quickly forgotten. Pupils' capacity for knowledge application is severely limited. The capacity for independent learning is not developed because, in a profound sense, learning is not on the curriculum. The model of learning as classroom work is associated with mediocre standards of achievement for the great majority of pupils (Doyle, 1983).

Research also found classrooms where achievement consistently went way beyond the mediocre (Wang et al, 1993). The major drivers of attainment in these classrooms were identified. Foremost was the demand that pupils learn through thinking. Teachers set challenging tasks and required pupils to think their way through them using a broad range of cognitive processes. These processes were then subject to further reflection or 'metacognition' to equip pupils to manage their own intellectual processes. In these classrooms learning is not 'doing the teacher's work', although, of course, this gets done. Rather, learning involves 'making sense' in curriculum subjects.

The management characteristics of these classrooms have been identified across a broad range of research studies (Bransford et al, 1999). They are learner-centred, knowledge-centred, assessment-centred and community-centred. These terms have strict practical meanings. 'Learner-centred' management calls for the teacher to identify what pupils know about the subject matter to hand. If the pupil is to make sense of the experience, this is an essential starting point and it requires advanced diagnostic skills on the part of the teacher. Learning experience must be 'knowledge rich' in the sense of being sufficiently complex to demand problem-solving capacities and knowledge application. 'Assessment-centred' calls for the assessment process to be embedded in the learning process. Assessment can no longer be merely a summative process, nor a reward for performance. Assessment must provide timely and usable feedback. The teacher acts as a coach with assessment information. 'Community-centred' refers to the fact that pupils spend more time out of school than they do in it and that their in-school transactions are inevitably shaped by what they know and who they are in the community at large. This involves recognition, through the 'learner-centred' factor, of pupils' starting points, attitudes and broader knowledge bases.

In classrooms so managed, learning pupils are thinking pupils. This approach is entirely consistent with the research outcomes of modern psychology that show the general power of human thought to be evident at birth (or as close to birth as scientific ingenuity can get measuring instruments). The capacity to learn through creative thinking is no longer seen to be the province of the gifted. Rather, it is the norm (Bruner, 1996). Teachers who demand learning through thinking play off their pupils' central human endowment. Not surprisingly perhaps, enhanced outcomes from these circumstances include greater pupil confidence, deeper comprehension and enhanced capacities for knowledge application.

Impressive though these settings are, they have their own limitations exposed through advances in our understanding of the nature of knowledge and knowing.

Sometimes we must learn bodies of arbitrary knowledge. Custom and practice dictate how things are called. Foreign vocabulary cannot be derived by logic or reason – it has to be learned, and old-fashioned principles of practice have their application here and elsewhere. Most knowledge, however,

is not arbitrary. It has been constructed to understand rather than merely name experience. Bodies of such knowledge (such as the subjects in the school curriculum) are characterised in contemporary epistemology as socially constructed, distributed and situated (Lave and Wenger, 1991). Knowledge is said to be 'socially constructed' in the sense that it is invented and validated in and by communities. In some cases (eg science or history) these are communities of scholars. In other cases these are communities of practitioners (eg teachers). In all cases concepts and their relationships are invented to advance understanding. Bodies of knowledge are not static. They constantly evolve and, on occasion, change radically on a revolutionary scale. Engaging with such knowledge in a passive/receptive mode can lead only to the most trivial and temporary learning (Rogoff, 1994).

Knowledge is said to be 'distributed', in the sense that no single mind holds all the knowledge necessary for its social function. A mathematician can construct a new theory but it cannot be validated without a community of scholars and it could not be spread without a greater community of publishers, teachers etc. No individual can educate a child. The necessary pedagogic knowledge is spread across a number of minds, including those of ancillaries, parents, education managers and so on. Knowledge is understood to be 'situated' in the sense it is embedded in the working practices of the community which generates it. In a profound sense, science is what scientists do. Science is a working process in which scientific understanding has its meaning. In these terms, imbuing children with a sound sense of the curriculum demands that teachers go way beyond asking them to make sense of standard texts and exercises. Rather, pupils must be inducted into the working practices of scholarly communities. But before examining the educational response to developments in epistemology, it is useful to place them in the context of advances in the relationship between schooling and society.

It has always been recognised that the broader society sets and influences the outputs of schooling. These are not always propitious forces. The divisive impact of social class on educational achievement is well known if not well understood, and the impact of differential parenting is increasingly recognised as both an asset and a challenge. In recent decades a string of policies has attempted to harness schools more closely and profitably to family and community influence (White Paper, 2005). At the same time it has been bitter experience that many children, and especially the most vulnerable, have fallen between the interests of the many agencies involved. The call for 'joined-up' government has been especially strident here, culminating in a management and policy shift from a focus on service (education, health, care) to a focus on children per se. This is most specifically set out in the 'Every Child Matters' (ECM) agenda. In these terms, integrated services should provide for children's being healthy, staying safe, enjoying and achieving, making a positive contribution and for laying the foundations for their economic well-being. Children and their families are not cast as passive recipients of these policies. The reform of services is expected to recognise the strengths and legitimate wants of all participants and, in regard to education, there should be a call on families and children, 'to invest hope, effort, time and imagination into learning' (Leadbeater, 2005). In common with other public sector reform, change is to be 'user- centred' with 'producers and users co-producing the service'. The point, 'is to engage users far more in designing, producing and creating the learning they seek' (Leadbeater, 2005, p 4). The general requirements of this, the 'personalisation agenda', are that users must be given a far greater choice (and consequent voice) in the educational agenda and that provision should evince both extensive community involvement and flexible organisation.

Practical responses to these developments in secular trends, extended and integrated policies, developments in epistemology and further developments in theories of learning have taken the form of two further quantum leaps in the conception and management of learning experiences (Watkins, 2005). First, we have seen the emergence of classrooms as communities of learners and subsequently the development of learning communities (Rogoff et al, 1996).

In a community of learners, all the characteristics of 'making sense' are evident but learning per se is on the curriculum. As well as covering the curriculum, pupils overtly learn how to learn and think. They also have some say in the way the learning arrangements are managed; there is some voice and choice. There is much more evidence of the hallmarks and processes of community. Learning has become a corporate responsibility rather than an individual occupation. There is a greater sense of learning together, and evidence of collaboration and discussion not merely as a means of sharing resources

typical of most group work, but as means of achieving joint or shared objectives in pursuit of progress and the understanding of shared learning.

A learning community is a further advance in the development of the management of learning experience. Here, we should expect to see evidence of the hallmarks and processes of community. Learning is on the agenda and pupils engage explicitly with learning to learn. But the distinguishing characteristics of a learning community are:

- a focus on knowledge generation which goes beyond learning curriculum content or received opinion and towards the creation and validation of ideas
- a major mobilisation of the community, both near to hand and beyond the school walls, as a resource for learning
- greater evidence of both cohesion and diversity, best exemplified by the tenets of personalisation

There will be strong symptoms of collective responsibility for the learning of the collective, but at the same time this will be energised by diversity, individual agency, positive use of a wide human resource base and the co-authoring (personalisation) of experience. Flexibility will be evident in the use of time and space and pupil choice and voice will be strongly evident.

The learning community is the state-of-the-art mode of working towards the objectives of ECM and of the personalisation agenda consistent with the most advanced models of human cognition.

The above, necessarily very brief, note on the major trends in philosophy, psychology and practice suggests that provision for learning in the classroom over recent decades may be captured as progressing through the following stages of development.

At the basic stage we have pupils **doing work** ie their teachers' work. These settings are characterised by good order, mutual social understanding between pupils and teachers, a production-line model of learning based on a 'learning is work' metaphor, the exchange of performance for grades, safety and security and respect in the classroom, and a push for high standards in test performance.

The next stage of classroom experience foregrounds **making sense.** Pupils are expected to go beyond performance towards deep understanding of the curriculum. These classrooms are characterised by being learner-centred, knowledge-centred, assessment-centred and community-centred. Diagnosis of pupil starting points is salient, as is a problem-solving curriculum. There is much investment to secure understanding through knowledge application. But experience is still subject-dominated, teacher-dominated and focuses mainly on individual progress. Group work may be evident but it is a means to an end. Personal agency is strongly evident. Where there is evidence of 'going meta', it is at the individual level, involving reflections on method of achievement.

The next stage of development characterises the classroom as a **community of learners**. Here, all the characteristics of 'making sense' are evident but at this level, learning per se is on the curriculum. As well as covering the curriculum, pupils overtly learn how to learn and think. They also have some say in the way the learning arrangements are managed – there is some voice and choice. There is much more evidence of the hallmarks and processes of community as set out by Watkins (2005). Learning has become a corporate responsibility rather than an individual occupation. There is a greater sense of learning together, and evidence of collaboration and discussion not merely as a means of sharing resources typical of most group work, but as means of achieving joint or shared objectives in pursuit of progress and the understanding of shared learning.

The ultimate stage of classroom provision for learning may be described as a **learning community**. Here, we should expect to see evidence of the hallmarks and processes of a community of learners: learning is on the agenda. But the distinguishing characteristics of a learning community are:

- a focus on knowledge generation which goes beyond learning curriculum content or received opinion and towards the creation and validation of ideas

- a major mobilisation of the community, both near to hand and beyond the school walls, as a resource for learning
- greater evidence of both cohesion and diversity best exemplified by the tenets of personalisation

There will be strong symptoms of collective responsibility for the learning of the collective but at the same time this will be energised by diversity, individual agency, positive use of a wide human resource base and the personalisation of experience. That is to say, experience in these settings will be co-produced by pupils and providers. Flexibility will be evident in the use of time and space and pupil choice and voice will be strongly evident.

The above describes developments in the conception of classroom provision for pupil learning experience, laying emphasis on the increasing sophistication in the quality of their engagement with the curriculum and with the processes of learning. The conceptual framework says nothing directly about the crucial matter of learning outcomes. But pupils do not come to school solely for the experience. They are expected to take away the foundations for lifelong learning in the form of a corpus of skills, attitudes and values. The framework encourages the expectation that the higher the stage of development in provision for learning the more we should anticipate the achievement of these desired outcomes. Unfortunately, many of these outcomes are not appraised by current systems of assessment of attainment. It is consequently difficult to cite evidence regarding the effectiveness of these advanced arrangements for learning. This difficulty is compounded by the relative newness of provision described in the later stages of development.

Watkins (2005) has reviewed the available evidence – sadly none of it from the UK – of the impact of learning community experience on pupils. Watkins reveals very promising trends in the formation of values, skills, attitudes and relationships underpinning the development of independent and committed learning. The jury is out as to the effect of this experience on test scores. This is an important question if such arrangements for learning are to acquire and retain the confidence of the public and, in the longer-term, change the 'folk psychology' of learning.

In this paper we consider the evidence from networked learning communities relevant to the research questions cited earlier and include a description of the experience of pupils and its impact on their attainment.

Methodology and data set

The analyses which follow are based on a range of data, most of which was submitted by NLCs themselves. Each NLC completed a detailed submission document prior to acceptance on the programme. At the end of years one and two of their operation, detailed review documents were also completed. NLCs were required to verify the statements made in their annual review documents by sending in an accompanying 'box of evidence' and by attendance at a review meeting at which Networked Learning Group (NLG) staff discussed and questioned their progress. These were the major data sets used for this paper. The scale of this set is detailed in the appendices below, and examples of each of these documents are also attached.

Additionally, a further set of data was used to provide some of the examples contained in the paper and to provide verification of the analyses. This data included:

- results of the annual 'levels of learning survey' (sent to all schools in all networks for completion by adults)
- a set of individual NLC case study reports compiled at various points during the programme
- the interviews conducted with adults as part of the externally commissioned evaluation of the programme
- the write-up of the NLC pupil voice conference. The scale of this data is also detailed in the appendices.

2. What has been the pupil experience of learning in networks?

When applying for funding from the NLC programme networks of schools stated their predominant focus for pupil learning. The graph below shows the distribution of their intentions, indicating the number of routes whereby the schools intended to raise standards of attainment (see also Stott et al, 2006).

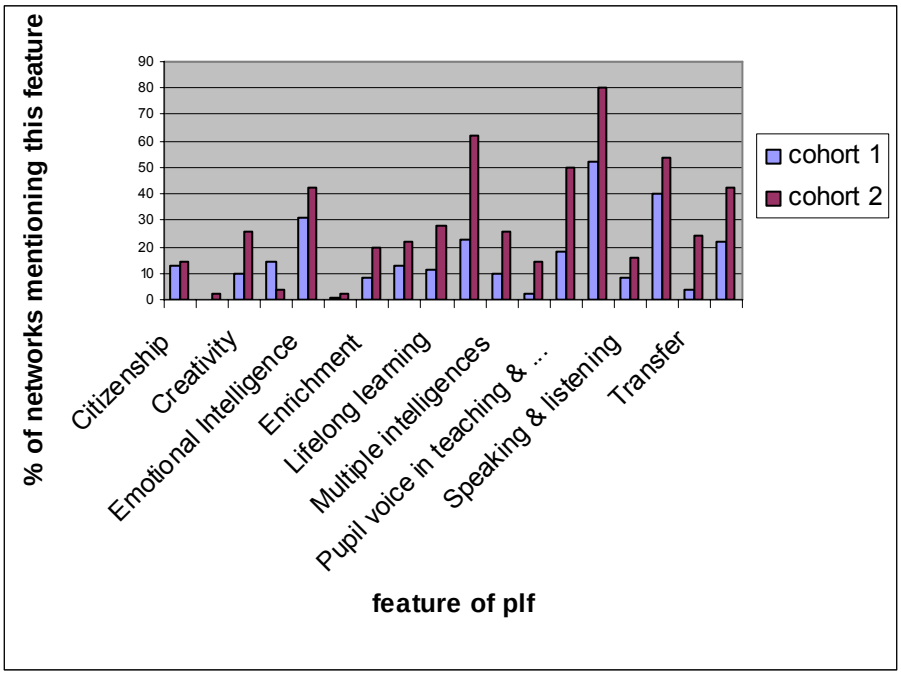


Figure 1: NLCs' identified pupil learning focus contained in submission for funding documents

How were the pupils to be engaged in these topics and issues? We addressed this question by examining the submissions and year one and two records of activity submitted by each NLC. As part of the year two review process, each network completed an activity record which recorded details of each activity as well as its duration, how many schools and pupils were involved and whether the learning was at the level of pupil, adult or leader. For this analysis, 93 activity records were available (36 from cohort 1a, 35 from cohort 1b and 22 from cohort 2a). Each activity was read and categorised as predominantly showing the characteristics of one of the four stages of engagement in learning described in the conceptual framework above.

The table below gives examples of the kinds of activities that were placed under each stage.

Stage	Characteristics for pupils	Example of type of activity placed in this stage
'Doing work'	Good order, a production model of learning, likely to focus on tests, attainment and standards	Gifted and Talented weekly workshops which are focused on pupils carrying out more advanced subject tasks but which do not enable them to learn consciously about the process of what and how they are learning
'Making sense'	Beginnings of a deeper understanding of learning, focus on problem solving but retaining an individual focus	Residentials for Year 11 students focus on transferable life skills, where greater understanding of the ways in which they apply their learning empowers their own progress and control over outcomes – the building blocks of lifelong learning

'Community of learners'	A clear focus on learning per se, pupils learning how to learn, some pupil voice evident	Student mentoring programme with students being trained to understand barriers and opportunities for learning, enabling them to understand their own learning and choices as well as supporting the learning of their peers. A degree of influence and control being accorded to the power of pupils' own voices in determining the ways in which problems are dealt with
'Learning community'	Activity will include knowledge generation, use of the wider community resources, strong personalisation and strong pupil voice	Action Research groups with students as co-researchers when students in partnership with teachers investigate, review and change the teaching and learning process in specific classrooms. They then share this new knowledge with other pupils and teachers through presentation and discussion

Figure 2: The four stages of engagement in learning: examples of each stage

The data was read and categorised by three members of the NLG research team. As a check on the reliability of the categorising process, 14 of the 93 activity records (ie 15 per cent) were categorised by 2 of the 3 researchers involved. Of this sample, there was 86 per cent agreement of categorisation of activities.

The bar chart below showing the distribution of stages of engagement across the NLCs reveals that NLCs were engaging in pupil activity across the spectrum of the four stages.

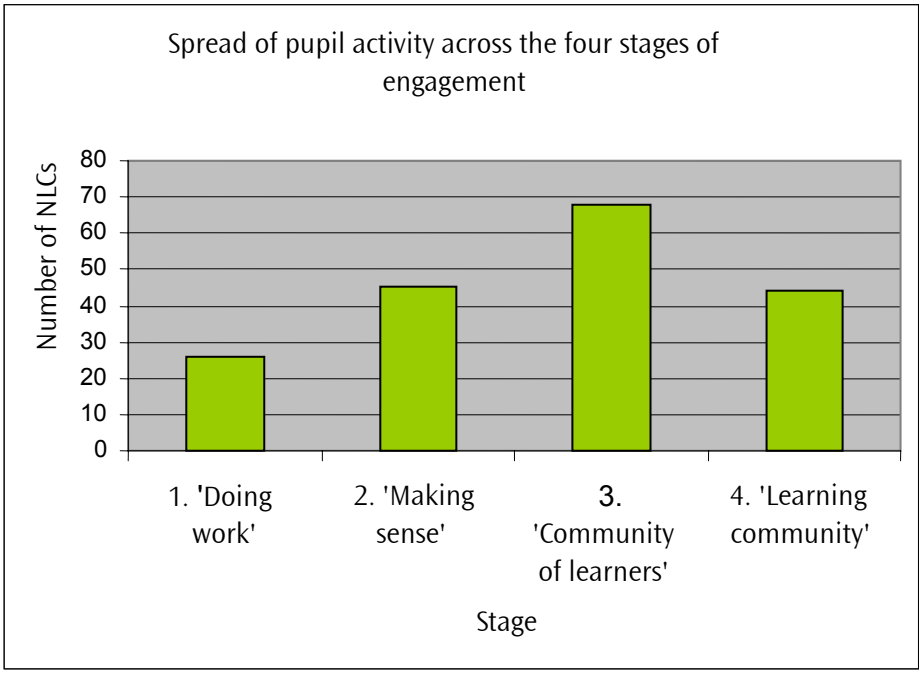


Figure 3: Pupil-level activity in NLCs

A chi square test on the frequencies (stages 1 and 2 combined and stages 3 and 4 combined) confirmed that there is significantly more activity in stages 3 and 4 than would be expected by chance ($p=0.002$) and significantly less in stages 1 and 2 ($p=0.008$). The higher frequency of activity in stages 3 and 4 confirms the success of NLCs in their intention to focus on developing approaches to learning which will enable pupils to have opportunities to be engaged in the processes of 'designing, producing and creating the learning they seek' (Leadbeater, 2005).

This can be seen in the following extracts from the year two review activity logs which provide specific examples of networks embracing stages 3 and 4 of the framework. Network N298 provided input to pupils on learning per se and then enabled them to discuss and reflect on this:

'…The NLC funded 'the learning game' in all schools for all staff, focusing on knowledge about how the brain works, learning styles, emotional intelligence and strategies for boosting confidence within the classroom. Activity packs were purchased for all schools to benefit all pupils. All Year 6 and all Year 11 pupils in all schools received a half-day input from the learning game. Governors and parents workshops were also provided…The 36 pupil ambassadors met again [April 2004]. They shared their research findings and then were taught about how the brain works. In cross-school and cross-phase groups, the pupils discussed ideas on what makes a good pupil or teacher …they were given activities to try within their own schools….The pupil ambassadors agreed to speak about the network to other pupils. Some pupils spoke at whole school assemblies; others gave presentations to smaller groups. The pupils researched into the history of their schools and prepared presentations for the celebration event.'
(stages 3 and 4)

A range of pupil-to-pupil interaction which developed over time was demonstrated by N258:

'Pupil-to-pupil learning [is] a strong feature of the project ongoing…Pupil-to-pupil dance work developed from the success of the Emotions Dance [performed at the NLG conference]. Pupils have taught others about how emotions can be expressed through creative dance….Querks mini project – puppets purchased as a resource. Year 5 and 6 pupils asked to develop activities to support emotional well-being for infant children using puppets as a theme. Children brought together for afternoon sessions in each other's schools….A spin-off was children formally visiting each other and receiving school-led pupil learning walks. Visiting children then asked to evaluate what they had learned and what aspects of learning they could feed back to teachers within their own school.'
(stage 4)

Other NLCs, for example N278, used pupil conferences as one of the centre pieces of pupil involvement:

'Pupil conference November 2004….12 schools represented, pupils from Years 2–6 in the morning, Years 7–10 in the afternoon. Each group led by Year 11 pupil using De Bono's thinking hats as a methodology. Four questions were asked of mixed groups…What does good learning look like to you? What does good teaching look like to you? What does good assessment look like to you? What does a good learning environment look like to you? Recorded in any form, but mind maps were the favourite. Co-leaders collated the findings and fed back to all staff via the network website and a network inset day.'
(stage 4)

The table below represents the data differently. Each row shows a different spread of pupil activity across the four stages of engagement with learning. ***The digit on each row indicates the number of NLCs which showed this spread of pupil activity.*** The chart reveals that there was a wide and varied spread of activity across the range. The largest group of NLCs (22) reported pupil activity across all 4 stages and the second most frequent spread (15) was across stages 2, 3 and 4. Just two NLCs reported only activity characterised as that of a learning community with an equal number of NLCs reporting activity only in the first two stages.

	1. 'Doing Work'	2. 'Making Sense'	3. 'Community of Learners'	4. 'Learning Community'
Number of NLCs with this spread of pupil activity				2
			10	
		15		
	22			
			7	
				5
			7	
		10		
	9			
		4		
	2			

Figure 4: the spread of pupil activity in NLCs across 4 stages of learning engagement

Activities in stages 3 and 4 were reported in 87 NLCs. This is a powerful indication of networks' planning activities which typically engage pupils in creating knowledge for themselves, connecting with people and groups outside their own schools, and having a high degree of choice and voice in the styles and kinds of learning in which they engage. Nonetheless, most NLCs (74) reported at least some examples of activity characterised in the first two stages – ie more traditional classroom-based provision with an emphasis on transferring knowledge to pupils and on improving standard attainment scores for individual pupils. Only 12 NLCs focused solely on stages 3 and 4.

This evidence can be interpreted as showing a conscious shaping of networked activities that will enable constituent schools to build cultures which promote far greater choice and active contribution to learning for pupils, generating a climate that will promote self-esteem and independence. These are key factors in laying the foundations for future economic well- being. Through a range of diverse strategies and approaches illustrated throughout this paper, it is clear that a large majority of NLCs are striving to ensure that pupils both enjoy and achieve highly.

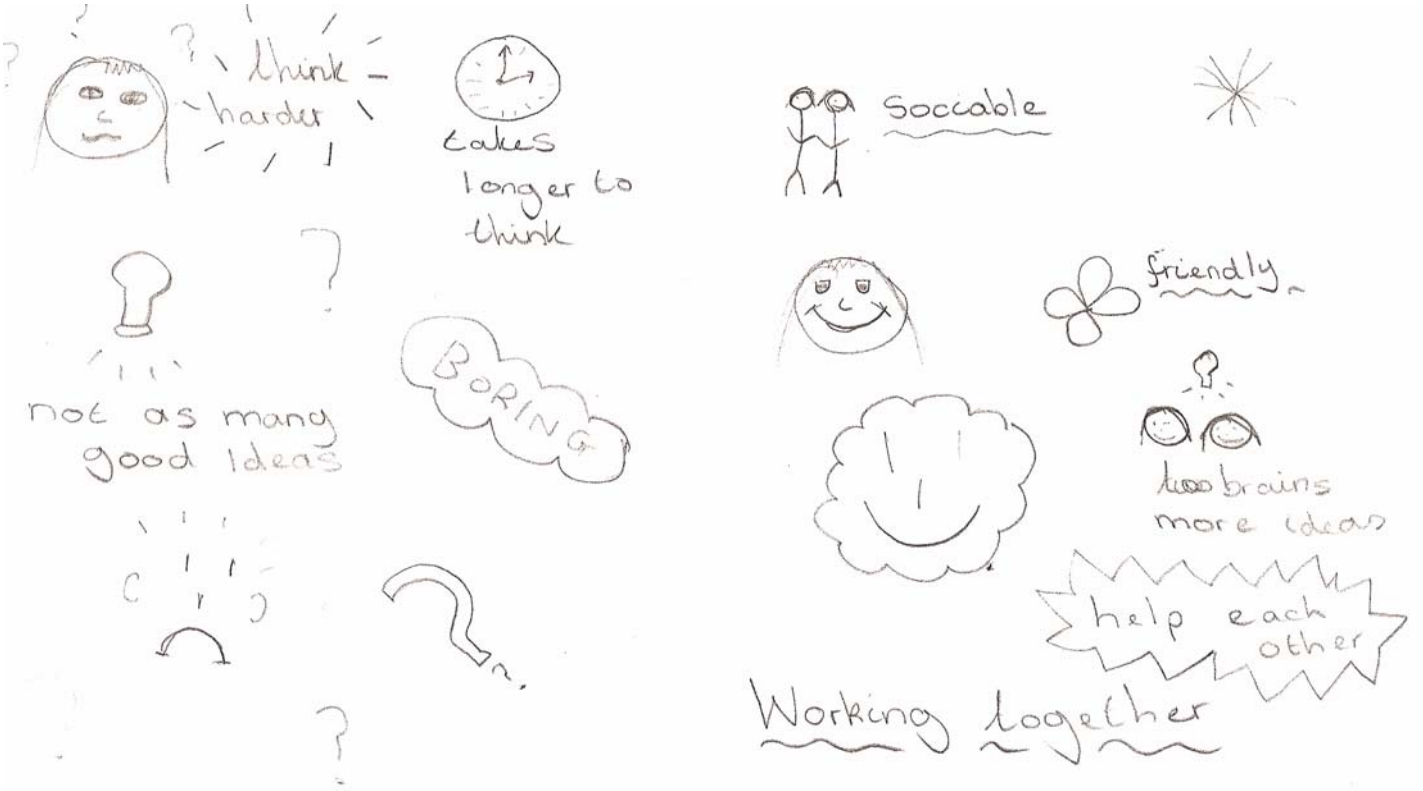
These activity records are, however, compiled by adults. Only pupils can tell us what their learning and their experience of learning actually feel like and whether they have changed for the better. How far have things changed for them within NLCs?

2.1 Pupils' views

As part of their drive to raise standards, many schools have adopted particular off-the-shelf packages to aid their development of Assessment for Learning, a key component in the primary and secondary strategies as well as a vital ingredient in enabling children to understand what and how they are learning.

One of the case studies in the Annual Enquiry 2005 (N267) demonstrates the ways in which the school improvement co-ordinators adapted and extended several of the Assessment for Learning approaches stemming from familiarity with Shirley Clarke's work (Clarke, 1998). This network's core aim is to '*be a network that seeks to excite pupils about learning, to increase their independence as learners and to help them understand themselves better as learners*'. Teachers have therefore further shaped their practice to suit their pupils' needs in their particular context. Clarke emphasises the need to build pupils' understandings of the processes of learning by making sure they know precisely what they need to include in order to meet success criteria. Following this line of thinking, the teachers sought to find ways of involving pupils in shaping and controlling their writing – in effect putting the children themselves in charge. Developing paired work in classrooms has begun to turn the network's focus on promoting independence in learning. They share their ideas, check each other's work and comment on whether the lesson's learning objective has been met. In these ways the pupils gradually build an awareness of precisely what it is they are trying to learn and how far they have got in achieving it. They clearly appreciate the particular value of paired work in increasing their confidence in their own ability to

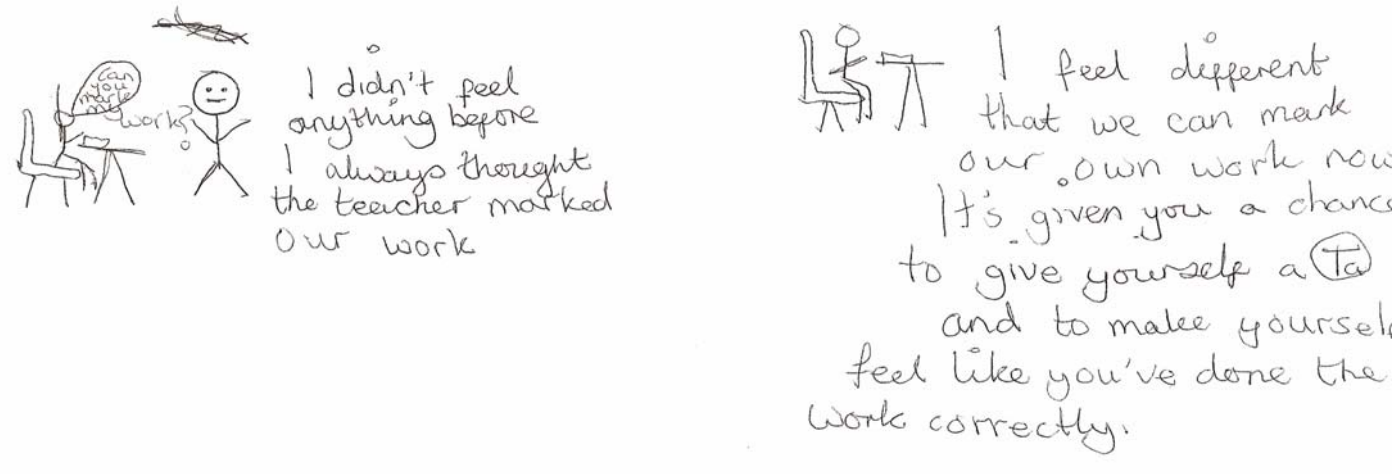
succeed: *"I'm not really a very confident writer so when we're in partners they're like giving more ideas so I can get things done a lot quicker"* (Year 4 pupil). Asked to record her views of working on her own and with a partner, a Year 7 student drew these contrasting diagrams, indicating her perception of the potential for building a community of learners in her classroom:



A Year 4 pupil's description of an approach to teaching poetry techniques indicates how they are learning through use about the significance of success criteria in achieving learning objectives:

> *"We had to think about a poem we'd like and all the stanzas and structure of it. Then we had to make up the rules of what the poem should be. And then somebody else had to write the poem from your rules…..The person who gave the rules had to read it and mark it. They had to see that we'd obeyed all the rules and had the right amount of lines. We had to mark it and give it TA, which means target achieved if they'd followed all the rules."*

This sense of design and ownership of learning which places these activities firmly in the third stage of engagement, was also shown by a Year 7 student:



However, in the desire to personalise the pupils' learning experiences, Assessment for Learning is not the sole mechanism adopted by NLCs. The year two reviews also revealed that an increasingly popular approach is for network-level resources to fund the introduction of thinking skills programmes such as Philosophy for Children (P4C). By giving access to the necessary adult training, networks such as N255 have enabled teachers to run lessons, described by a primary teacher as, "*starting with a stimulus – often a short story being read to the class by the teacher. Other types of stimuli include drama sketches and works of art or sculpture. Pupils then brainstorm a range of questions that the stimulus has raised for them. Several different voting mechanisms are used, by which pupils choose one question for further discussion in both small groups and as a whole class. At a later date another question from the list may be chosen for further discussion.*" When a group of Year 6 pupils were set the task: Think about our philosophy sessions in school. How do you think they help you? How useful are they? What do you like about them? Why should we do philosophy in school? – their answers show the impact on their developing thinking, communication and life skills as well as building their emotional intelligence:

"It helps you exercise your thinking skills."
"Philosophy helps us to consolidate our thoughts and ideas."
"Philosophy relates what we do in school to our everyday life."
"Philosophy helps us develop our questioning skills."
"Helps you speak clearly."
"It helps you listen."
"It helps you participate in group discussions."
"It helps you work better in groups or with a partner."
"I think it helps you co-operate with other children."
"It helps you express your feelings."
"I think it helps you understand other children's feelings."

Such evidence of these children's growing understanding of the processes of learning indicates progress towards their becoming a community of learners as a result of the deliberate choices about teaching strategies made by the network's adult members.

The year two activity records stand as testament to the explosion of interest in the wide variety of approaches marketed under the umbrella of accelerated learning (more than 30 per cent of networks), and in particular the prevalence of using learning styles in schools and classrooms (20 per cent of networks). An indication of the ways in which networks pull together the potential of a variety of approaches rather than relying solely on one can be seen in an extract from the year two activity record of NLC N183:

- P4C, a 'subject' within the curriculum has been embedded through the resources made available by NLC. Thinking, increased pupil adult dialogue, enhanced social skills and peer group respect, as well as the ability to listen, follow an argument, and vocalise agreement or disagreement are evident.

- Under the umbrella of Thinking for Learning, elements, strategies, practices associated with accelerated learning, assessment for learning and thinking skills are becoming embedded within the pedagogy. De Bono's thinking hats, diamond 9, and mind and concept maps are used in lessons.

Children seem to have seized upon such opportunities, exemplified in one network (N296) by the Pupils' Network Council identifying learning styles as a focus for enquiry, leading to groups of children, entitled VAK detectives, visiting other classrooms, observing and recording how the types of activity being set fitted into the categories of visual, auditory or kinaesthetic, and then feeding their findings back to teachers and pupils in the network. Despite the lack of any evidence-base in cognitive neuroscience (DEMOS, 2005), the flurry of activity aroused by such concepts as brain gym has galvanized enthusiasm amongst pupils, which teachers have been able to harness to improve motivation. At its best, this begins to establish a climate of shared enquiry into the nature of learning, a key characteristic of becoming a community of learners. The pupils' enjoyment when asked to investigate and feed back to teachers on their findings is evident from a conversation with two Year 11 girls from the N200 NLC:

> *"We were aware that the teachers might not like what we had to say, but the majority seemed to accept our ideas with enthusiasm. We discussed what we consider learning to be, what makes an effective lesson and what teaching styles we prefer …it was nice to have the teachers ask us questions instead of us asking them."*

As children experience the development of a very different type of relationship with their teachers, as a result of activities organised by their network, they are encouraged to see themselves differently – as people with the power to make choices and affect decisions rather than being passive recipients. The sense of co-agency and of meaningful dialogue is pronounced in children's explanations of the activities they are now undertaking.

2.2 Pupil voice: the crucial ingredient

Identified by Hargreaves (2004) as one of the key pathways to personalisation, the importance of the development of pupil voice cannot be over-estimated in coming to judgements about the placing of NLCs on the continuum of the identified four stages of engagement with learning as conceptualised above. It has been a feature of the programme that an increasing number of NLCs have chosen to identify the development of pupil participation as a key priority, encouraged by public statements endorsing the importance of pupil voice work:

> *'Pupil voice work is about valuing people and valuing the learning that results when we engage the capacities and the multiple voices in our schools. It is essentially both optimistic and aspirational, representing a belief in the contribution that is made when we release the leadership of all those who share responsibility for learning in a school – both adults and pupils.'*
>
> *[Jackson, Nexus 2004, p 7]*

Undoubtedly, the requirement of the ECM agenda to place the needs and opinions of the child at the centre of decisions about provision demands that individual needs are met through increasingly personalised arrangements. Further, Ofsted has a new focus on feedback from the pupil as client within the self-evaluation framework. Schools are therefore increasingly foregrounding the voices of children. In their turn, networks which are committed to the creation and sharing of knowledge and to collaborating as a matter of course have perhaps unsurprisingly increasingly focused on pupil voice as a powerful means of achieving these goals.

Involved at the beginnings of a network's attempts to build what might be termed a shared ownership of schools, two Year 9 students from N301 NLC wrote the following:

> '*Our role in school is to try to influence how individual teaching techniques are applied for the better. We do this by looking at what makes the average person tick in a classroom and what makes them throw Blu Tack at the current class victim or nearest swot etc. OK, sounds funny and unrealistic – but it's true. How easy do you find it to stay switched on when the room temperature is also body temperature and there's about as much light in the classroom as there is in a ten-watt bulb? Our job is to provide two things for teachers – what we would realistically like to change around school – and to give an inside picture of how the majority of the school feels about the running of things…….*
>
> *We're here to try to make school a better place in an unbiased and fair way, taking into account the wishes of teachers and students.'*

The development of such partnerships, characterised by qualitatively different relationships between teachers and pupils, will be a key change agent if schools are genuinely to embody the ambitions of the ECM agenda as well as meeting the criteria for being a learning community.

According to the year one review summary report (Hadfield et al 2005), 31 out of 76 cohort 1 networks had undertaken or were planning a range of pupil participation and voice activities which were perceived to fall into three broad categories: pupil feedback on teaching and the learning environment, pupil reflection on their learning and pupils as network activists. Many networks sought additional information from pupils, using a wide range of feedback processes, "ranging from online diagnoses of ICT skills to interviews and surveys of student opinion on the learning environment, priorities for school improvement or barriers to learning." The Hay-McBer Transforming Learning surveys were supported by the NLG programme:

> *'Pupil perceptions are gathered using Transforming Learning software, co-ordinated by student leaders and the results are interpreted in partnership with pupils. It is the ensuing dialogue, making meaning from the data together, that is likely to change relationships and improve the conditions for learning.'*
>
> *[McGrane 2003, Nexus]*

Pupils in networks with a pupil learning focus face a built-in requirement for greater pupil reflection on and sharing of the experience of learning. These networks undertook, during that first year, 'self-audits of learning styles or emotional health, completed learning logs and worked in a variety of different ways with other pupils and teachers. Such activities… emphasise pupils as inter-dependent and self-responsible learners.' (p12) Some networks had given pupils an active role in the development of the network, for example as pupil voice co-ordinators, researchers or journalists:

> *'Pupil VAK (visual, auditory and kinaesthetic) detectives do a learning walk.*
> *Through lesson observation they identify teaching practice that addresses different pupil learning styles. Findings are shared with teachers in their home school.'*
>
> '*The network organised for six pupils from different schools to become pupil ambassadors and provided training in research skills. Focusing on making teaching across the network more adaptive to individual learners' needs, these students work with teachers to discover what forms of teaching and learning students receive in their school and which are most powerful for them.'*

Even at this early stage of development of the NLCs some networks had launched into giving pupils advanced roles either co-teaching with staff or taking small groups of pupils themselves:

'One network has organised master classes for numeracy in which pupils co-teach. By showing fellow pupils how they use and apply numeracy skills, students' self-esteem and confidence grow. Also, by

operating as role models, these students now want to share their strategies whereas before they would just complete tasks and not reflect on how they learned.'

Two Year 6 girls from one NLC (N240) reported much increased levels of pupil participation in relation to issues of social inclusion:

> *'Some Year 6 children have become 'mediators', and along with teachers, help to sort out problems and issues that may come up in the playground. We have helped children who have been upset because of being called names or fallen out because of an argument. The mediators listen to both points of view and ensure the children see what they have done wrong and put it right by apologising and making friends again. We are both mediators…..we really enjoy what we do and think we make a difference by improving friendships at playtimes.'*

NLC N278 took this approach further by placing all of their Year 12 students in the role of teachers for a de-timetabled day. They were given the task of teaching their chosen topic to Year 11 pupils, to give them a flavour of things to come. For one young man, passing on his acting skills in a drama 'taster-lesson' was daunting:

> *"At first it was a bit hectic and the teaching was quite awkward, but we seemed to pull together and the lesson went smoothly. I think the younger kids enjoyed it."*

A similar approach is evident in much of the work on improving transition, a common focus for many of the cross-phase networks. In NLC N218 pupils in Years 9 and 10 worked collaboratively to produce an alternative interactive prospectus for Year 8 pupils (about to transfer to the upper school) and their parents. Three of the students involved recalled how this happened:

> *'The pupils were involved in every part of the making of the CD. They designed the pages, thought up the ideas and themes, planned and filmed the video clips and edited and created images and sounds……..At every step we were learning new skills and increasing our understanding…..We have learnt a vast range of technical and multimedia skills. Just as importantly, we have developed other key skills: working as a team, carrying out research, working to deadlines and gathering and evaluating other people's opinions. We now plan to help other students in our network develop the skills to produce their own multimedia artefacts.' (Nexus,* Spring 2004*)*

During 2003-2005, NLG ran a Development and Enquiry group open to networks particularly interested in the processes and outcomes of building increased pupil involvement and participation in learning. At the annual conferences that formed part of this, students presented workshops on their activities. A more detailed review of one network's achievements serves to indicate the ground that has been covered and the ways in which the climate of teaching and learning has been changing as rapid progress is made towards becoming a learning community. This is particularly noticeable in NLC N311's work on student leadership, presented at an NLC pupil voice conference in 2005:

> A Year 12 student explored with delegates the Learning Research Diploma, a project that allows students to take a deeper look at their school and how it works. It was developed in partnership with Warwick University, and students receive a diploma to acknowledge their achievements. The three topics so far researched at her school have been 'Homework and its effectiveness within the school'; 'Teaching methods: what works well?'; and 'Learning styles: what works well and what do the students prefer?' The choice of these topics came from the students who also decided how they would like to conduct the research. The supervising teacher then approved their choices.
>
> The research process has involved students identifying, from the 'several competing theories about how people learn', three main aspects of how people study – perceiving information, processing information, organising and presenting information. Using a variety of research methods including questionnaires, lesson observations and interviews,

> the student researchers investigated current practice and student perceptions. They then asked a small sample of students to try out using different learning styles in lessons and to keep a learning record of how well each style worked for them. Their research findings were shared at a Learning Parliament at Warwick University with all the other schools whose students were also involved in the diploma. They also held video conferences with other NLC schools and others throughout the country as well as visiting further schools to share their insights into learning. Within the school, the student researchers presented their information to the senior management team, the year and subject leaders, all of the staff and their fellow students. Gradually they are beginning to see concrete results as teachers and students absorb and act upon their findings.

A further example from the same network indicates a personalised approach to building self-esteem and consequently leadership:

> A Year 9 student demonstrated the ways in which he has developed his ability to lead his own and other students learning through following the school's Learning to Lead course. He provided teacher delegates with a helpful booklet: 'Learning to Lead: thinking of starting up?' which outlined the 'revolutionary leadership course' predicated on the core belief that students have the right to be:
> good leaders, trustworthy, inspirational, aspirational and potential realising.
>
> The course poses each student a personal challenge which involves the student using leadership skills and demonstrating the ability to organise things independently. Examples given were setting up and running a club or revision session for other students, or simply organising a day out for the family. There is also a group challenge which is a more complex version of a personal challenge involving three or four students working together to make something better. The range of activities is vast. For example, the challenge group could go on a visit to another school and teach some students a particular sport technique or an aspect of the leadership skills course. The students are assessed on both challenges by an adult who may be a teacher or a family member. Once the challenges and assessments are completed successfully, the graduates of the Learning to Lead course receive certificates at an end-of-course celebration.

By opening this course to all Year 9 students in the network, the NLC is striving to build a learning community where each and every student is given the opportunity for self- development and increased levels of participation.

In an interview with an NLG facilitator the Year 11 student in NLC N200, who is the Director of Student Voice at his school, declares that "Giving the students power to work collaboratively with teachers and other organisations….is the only way to really make a difference." Emphasising that the culture of a 'good' school fits the system to the individual, he describes the ways in which the development of a series of student action groups [Holdsworth, 2000] will facilitate the simultaneous addressing of many more concerns and issues than would normally be possible for the 'traditional' school council. In advice given in one of the workshops at the second pupil voice annual conference, this network's students advocated to their peers:

> "*Set up action groups designed to focus on specific issues, such as refurbishment or curriculum. Make sure you use facilitating skills so action is decisive. Don't try and tackle too many issues at once. By focusing on one key area of school, such as curriculum, you may be given more power and the change is more likely to be sustained."*

An enquiry into the effects on children's learning of being part of a 'Students as Researchers' initiative in N193 revealed that there was considerably more impact, in the students' opinion, on their social as opposed to academic learning (Naylor & Worrall, NTRP, 2004). The experience was valued highly by the participants because they welcomed the opportunity to make their voices heard:

"Because it's a chance for students to improve their school rather than teachers and adults doing it for them."

"It's about having a say in what we do, being involved in the school, not just attending."

These students, too, drew attention to the rewards of engaging in activities that are one of the hallmarks of a learning community:

"I think the experience has allowed me to learn valuable skills in teamwork and oral presentation. It has helped me to appreciate how much can be achieved with good student-teacher relationships."

"Other people benefited from our research. It inspired other people to get involved with it. We were able to make a difference."

When asked to reflect on her earlier experience of being a student researcher, one girl wrote:

"It is now two years since I completed the research project and I am still noticing the benefits. My experience from the project and the skills that I have learned have made the prospect of going to university less daunting. With the self- motivation and the independent learning style that I experienced while carrying out the research project, I feel that I will be able to cope with the transition to the more self-learning environment of university."

It can be seen from this representative sample of activity that NLCs have launched into pupil voice activities with energy and impact, illustrating the potential power of activity at the third and fourth stages of engagement. At this point pupils have a real input into their learning experience and that of others in their community of schools.

In the above section we have shown that networks advanced the development of pupil learning experience significantly beyond the two basic stages and into the provisions of learning communities. We have also shown that pupils were very conscious of the benefits of this provision. Pupils had clearly 'gone meta' regarding the engagement and management of their learning and recognised that they were acquiring a corpus of skills, values and attitudes relevant to a commitment to lifelong learning. But how broad was their experience and how wide was the range of application of the advanced stages of learning experience?

3. What has been the breadth of student experience in curriculum terms?

All of the activity records at the end of year two were read for reference to work in particular curriculum areas. These references were counted and the graph below shows the spread of activity across the predominant curriculum subjects and also shows the spread of these activities across the four stages.

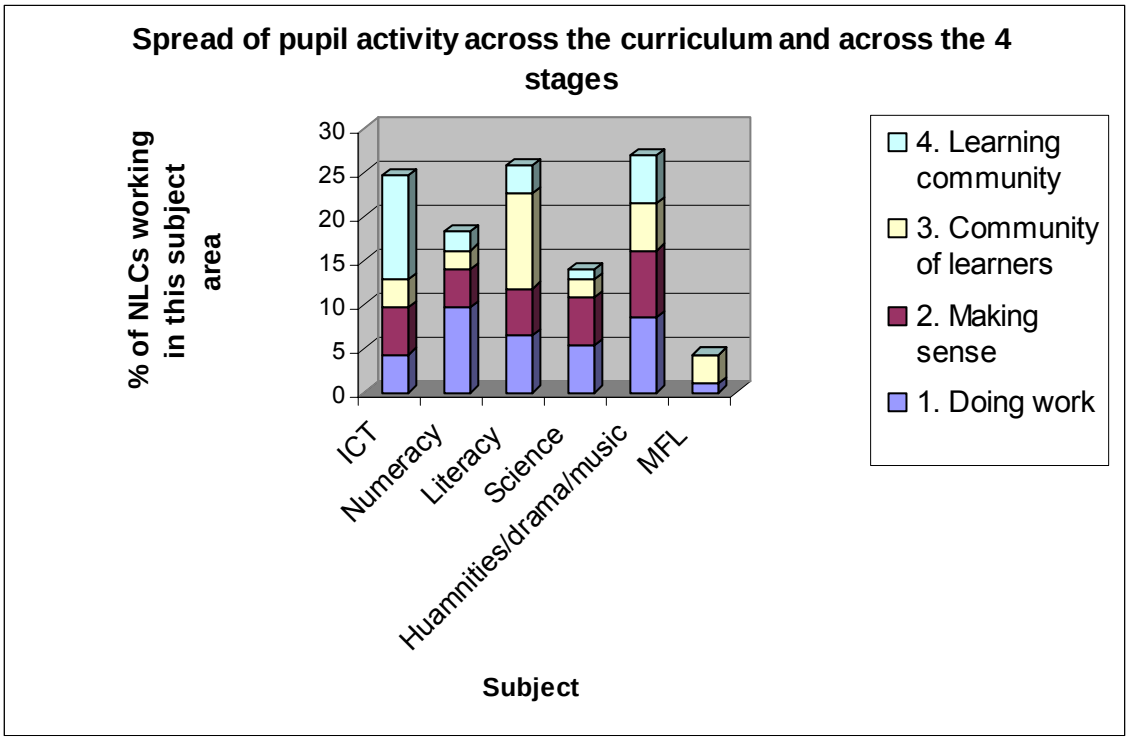


Figure 5: Spread of pupil activity across the curriculum and across the four stages

Note. Some of the activity which falls under the heading of ICT is cross-curricular ICT activity. Where the NLC stated which subjects were benefiting from the ICT work then this was counted under that particular subject heading. Otherwise it was recorded under 'ICT'.

The graph shows that NLCs have focused the majority of their subject-specific work in the areas of ICT, numeracy and literacy, though by no means to the exclusion of other subjects. There was strikingly more activity characterised as that of a learning community occurring in ICT in comparison to other subject areas. There was notably more numeracy activity at the stage of 'doing work' than in other subject areas.

3.1 ICT in NLCs

The NLC programme (2002–6) has coincided with a sustained period of growth in the range of technology available to schools, in terms of both hardware and software. One way that schools have managed to share new knowledge, to keep pace with developments and to make economies of scale in provision of ICT has been by collaborating with other schools. For example, shared purchases of software and shared recruitment of technicians are common practice among groups of schools. Within this trend of schools working together on ICT, it is not surprising that a number of NLCs have taken this a step further and shown evidence of innovative ways of improving pupils' experience of learning through collaboration.

Some of the ways in which NLCs have used ICT to move towards stages 3 and 4 have included:

- structured email exchanges and other online communities and forums as valuable venues for experimentation with ideas and new knowledge
- pupils moving 'beyond their school walls' via intranets or internet communication
- realisation of some of the tenets of personalised learning afforded by on-line learning – tailored to the individual's needs; pupil involvement in the design of new styles of teaching and learning afforded by new technologies including digital recording, electronic whiteboards, interactive network based websites

The NLC activity logs showed that at the end of year two, 25 per cent (ie 23 of 93) of all NLCs were identifying use of ICT as a key network activity. As Figure 5 above shows, this was often at stage 4, that of a learning community. For example, at the end of its first year as an NLC N192 felt that it had already begun to provide greater access to ICT for independent learning across all phases.The redefined pupil learning focus asked *'Is it possible to create a dynamic ICT curriculum that is closely matched to the learning needs of individuals and to the inception of new technologies?'* Two of the three priorities for action in year two were therefore specifically ICT related: *'to provide ICT access for special needs pupils for communicating and learning…and to provide enhanced independent ICT learning for more students.'*

During the second year, in an attempt to engender cross-phase collaborative learning between groups of schools within the NLC, nine projects were launched, variously led either by existing NLC staff, or commissioned from the local authority's ICT consultant team. All projects were open to all network schools, all of whom signed up for between one and eight projects. The nine projects included:

- ACCESIT, a project in which teachers from six schools led the trial and design of materials to support user-friendly software for students with SEN
- ICT and independent learning in lower and middle schools
- building schools' capacity to help to set up and manage independent learning in literacy and numeracy
- modelling exemplar lessons
- an extension to a museum and galleries education programme, in which pupils who had visited the museum created web pages and resources useful to other pupils
- an email project, in which four schools piloted the use of structured email between pupils in different phases to ease transition
- the U Need IT in Education (UNITED) project, in which students from 13 schools came together to focus on improving the quality of teaching and learning of ICT in the network by gathering and sharing of information

Another network, N224, aimed in its second year *'to give children more of a voice in their curriculum and to allow children to feel a sense of belonging to the NLC community.'* Each of this network's broad themes incorporated a strong ICT element. For instance their aim to aid transition from Foundation to KS1 includes use of ICT to support role-play in both key stages. Similarly the writing in Years 4 and 5 project uses specific software packages to develop skills (eg Kar2ouche) as a motivational tool to develop writing. The network developed an ICT co-ordinators group of skilled ICT staff to develop their own learning and support the learning of others.

3.2 Literacy initiatives in NLCs

An activity at the end of year two which had a focus on literacy, the most frequently chosen curriculum area after ICT was reported by 23 NLCs. The prevalence of literacy projects is likely to be partly explained by the high national priority given to improving standards in literacy in recent years. A review of the projects described by NLCs as literacy-based showed no obvious patterns or common approaches. There was a wide range of examples of how NLCs had used literacy as a focus for their work with pupils:

Characteristics of stage 4 were seen in one network (N224) which focused on two curriculum areas, one of which was improving literacy at KS2 using ICT, especially writing with boys. An extract from the annual enquiry 2005, NCSL case study showed:

'…All of the schools we visited are doing interesting things with ICT and multimedia to provoke children's and adults' learning. What the network adds is a collaborative dimension that enables them to share ideas as resources, and practices are being constructed. For example, Chocolate Palace is a multimedia resource for literacy created by children and overseen by a Year 3 teacher at school A, who wanted to make cross-curricular links between literacy, ICT and design and technology. The class spent three weeks on this one activity, writing their own fairy story, creating shoe box scenes and recording them with digital cameras to create interactive e-books using PowerPoint. As a finishing touch, the children recorded themselves reading their part of the story. When the project was finished, it became a network artefact shared at first in school, then used in staff ICT training for the network as a whole,

where it was shown as an example of how cross-curricular links can be made in literacy. One boy at school A described to us how much he had enjoyed working on the project. Before that he did not feel capable of extended writing at all.'
(stage 4)

There were also examples of literacy activity at stages 1 and 2. For some networks (eg N206) activity was reported as traditional classroom teaching:

'More Able and Talented Strand (main focus for Years 3 and 4)
Master Classes – established and expanded Master Class programme within KS1 and KS2. Building and expanding on previous provision to include literacy [and other subjects]. These are provided at both key stages in a variety of venues and contexts and regularly throughout the year. Each master class session lasts for approximately two hours and the lesson plans are posted on the website for information. Master class leaders are quality assured by co-leaders and participating headteachers and the local authority advisory team.'

Another network literacy initiative (N212) included purchase of training for teachers to provide the same 'RML' programme to pupils across the network.

'In January 2002, headteachers identified oracy/low literacy levels by evaluating the NLC review of strengths and weaknesses. KS1, 2 and 3 SATS and GCSE results in English were generally below national average. The Ruth Miskin literacy programme (RML) was introduced to address our pupil learning focus of improving literacy. With financial support from the local authority RML training was delivered to key staff. Individual schools made informed decisions about cohorts of pupils to be taught based on the knowledge gleaned from training sessions. An RML manager was appointed in the network to offer advice and support to teachers, progress discussions between headteachers and RML teachers. The RML manager has enabled RML 1 and 2 to be taught from Foundation Stage to Year 8, with some successful peer teaching.'
It should be noted that although this final example was categorised in the lower stage, it does also show seeds of higher level work with greater pupil involvement in the final reference to '….*some successful peer teaching.'*

3.3 Numeracy initiatives in NLCs

As can be seen in Figure 5, 18 per cent of NLCs chose numeracy as a pupil learning focus. As with literacy, this may well reflect national attainment priorities as SATs and GCSE scores for mathematics continue to cause concern to policy-makers, teachers and parents.

An example of a primary network focusing on raising attainment at KS2 shows children doing work (stage 1). A network of small schools in the West Midlands sought to address the issue of lack of support in mathematics for SEN pupils that could be offered by any individual school. The lack of confidence in deployment of resources experienced by each member school could be overcome using a collaborative approach. By working together the teaching assistants across the eight schools developed a project entitled 'Will I remember this on Monday?' This targeted pupils who experienced poor short-term memory and slow progress. A multi-sensory approach was developed and implemented through a series of planned interventions involving withdrawing children for small group work. The different methods of teaching gave the pupils access to material they had previously found difficult:

> "I felt that when I went back into class I could do bits of maths that the others were doing."

By building the pupils' self confidence through enjoyment – "I like SSMIG maths because it is fun and it helps me to learn more" – and by working together to address a shared problem, the schools were able to raise their SATs scores significantly.

A professional study group of mathematics teachers in network N192 decided to focus on tackling areas of maths where traditional teaching methods were not working. Using thinking skills methods (Fisher, 1990), they designed together lessons which used information processing, reasoning, evaluation,

enquiry or creative thinking. An example of the kinds of activities designed is Mystery which seeks to teach pupils how to select the relevant data to solve a problem. Eighteen statements, each containing numerical facts relating to a topic, are printed on individual slips of paper. For example, a family have to decide on their choice of holiday destination so the facts given covered costs relating to travel and food as well as the family's personal preferences. Working as a group, pupils come to a decision about the best choice of holiday for the family. Because some of the statements can be interpreted as being both in support of and against one of the destinations, the resulting discussion means that pupils develop the ability to sort relevant from irrelevant information. They also learn to classify and interpret information, make links between pieces, form hypotheses, check, refine, explain and justify. Learning how to make and justify a decision for which there is no 'right' answer is a new experience for many pupils in maths lessons and indicates that this network is moving into the stage of pupils making sense of their learning.

In developing a virtual learning environment (VLE) the secondary mathematics teachers and primary numeracy co-ordinators in NLC N238 were aware of the need to create as seamless a transition as possible for children. They therefore focused on developing a Year 6 to 8 curriculum that would ensure that all of the network's schools' pupils have a common starting ground on transfer to secondary school. The teachers have agreed which topics will be covered during the two months after the KS2 SATs and created a shared electronic database which holds all of the resources available for the teaching of each topic. This is available to all teachers, pupils and parents. So, for example, a parent of a Year 6 child can find out at the click of a mouse, not just which maths topics will be covered in the autumn, spring and summer terms but also click on each resource that will be used by the teacher and pupil.

Because all of the curriculum resources are held electronically in this way it becomes possible for pupil and teacher to shape individual learning in mathematics, with the child having equal access to the resources on offer. Pupil choice and eventually design or co –authorship of personalised learning is therefore becoming more of a reality as the children increasingly take advantage of the VLE's potential. Parental access to this resource indicates the learning community potential of this approach.

The focus on transition of the last numeracy example is shared by a significant number of NLCs who view their existence as making a critical contribution to improving the sense of continuity in learning for all pupils.

3.4 Working with pupils cross-phase and at transition

Of the total of 133 NLCs, 32 per cent were networks of primary schools only, 15 per cent were secondary schools only and the remaining 52 per cent were cross-phase, containing both primary and secondary schools. There is evidence that a number of NLCs have targeted activity across phases which was engaging and involving of pupils, the implication being that schools believe pupils have much to learn and benefit from interaction with different age-groups. Much, though by no means all of this activity has attempted to ease the transition of pupils across phases. This is an area of the pupil experience which has come under great scrutiny in recent years, with evidence of learning loss at key transition points (Galton et al, 1999).

At the end of their second year, 13 per cent of NLCs were running pupil activities specifically cross-phase or targeted at easing transition between phases. Pupil research was used by many of these networks as the means by which pupils might be actively involved in this issue. Network N281 was one case in point.

This network has as its focus the gifts and talents of all pupils, including improving the identification of, and provision for, development of these gifts and talents. The network comprises 2 secondary schools, 12 primaries, 1 junior and 1 infant. It is in an authority which still uses selection by the 11+ exam. The two secondary schools take pupils who have been overtly labelled as 'failing' (the 11+ exam) and are therefore challenged to improve the self-esteem and confidence of their pupils. During year two the NLC steering group prioritised greater engagement with the two secondary schools. With this context in mind, it was decided to launch a student research project in the two secondary schools. Groups of Year 8 and 9 pupils were invited to participate, based on their each having at least one gift or talent required for the project (eg project management, presentation skills, analytical skills etc). One group of pupils

designed a high-quality questionnaire to be completed by Year 6 pupils from the feeder primary schools. Results were analysed to produce a highly effective animated PowerPoint presentation that dealt with the most frequent areas of concern for Year 6 pupils approaching transition. The presentation was then distributed across the primary schools for use. The second group of researchers conducted research within their own Year 7 group concerning their key issues or problems on starting secondary school and produced a leaflet of information and advice targeted at Year 6 pupils.

The two research projects demonstrate the potential for network projects on many levels. Student research, as shown in the outcomes of the Teaching and Learning Research Project on Consulting Pupils about Teaching and Learning (2004), is a powerful means of giving voice and confidence to students:

> *"The girls have certainly become more responsible and independent over time. By the end of the project I was saying 'this is what you've got to do' and they went away and planned and did it."* (Year 8 teacher)

> *"It felt good that somebody had seen how good at working you were and that you are one of a small group out of a much larger group."* (Year 8 pupil researcher)

> *"I've gained a lot of confidence out of this and feel special."* (Year 8 pupil researcher)
> *"I am undoubtedly going to use these girls to lead and help other projects in the future. I am also going to suggest that we have a gifted and talented working party as we have different working parties across the school each year."* (Year 8 teacher)

The focus on transition, which resulted in several visits by KS3 pupils into primary schools to talk to and pass on information to those at KS2, was reported as valuable by both sets of pupils.

> *"The transition presentation definitely made us more confident about moving up – we liked the animation slide show. It was funny, and we liked being able to ask questions of pupils who are already there……I'm glad they came and did a presentation because now we'll know some pupils already when we start in September – yeah, I saw the girls who had come here when I went to the taster day, which was good."*
> (Year 6 pupils, following presentation by Year 9 pupils)

The animated presentation was then used across the network, including at parent and governor meetings, as well as with Year 6 pupils.

The discussion in the above section establishes that the higher stages of provision for learning were met by pupils across a wide range of curriculum areas. This is not to say that any individual pupil operated at stages 3 and 4 across the curriculum but it is to say that teachers collectively have shown that stage 3 and 4 provision is possible and productive on a wide curriculum canvas. This leads us to our next research question: did the networks achieve momentum in moving through the developmental stages of provision or did they stick at one entry level?

4. What has been the change in pupil experience over time? Did NLCs get better at involving pupils in higher-level learning?

There was no suitable comparator group of schools or networks against which the NLC cohort could be measured or benchmarked. Therefore the analysis looked for indications of change in the practice of NLCs over time to gain some insight into the impact of the programme.

The pupil activity records at the end of year two were compared to information given prior to the formation of the networks. At submission stage, prospective networks were required to indicate the 'current practice or position with regard to pupil learning and outcomes.' These sections were available for 66 of the networks. They were read and categorised on the same spreadsheet as the year two activity records. Each NLC was then coded; +1, 0, -1, where +1 indicated movement made towards pupil work in a learning community, 0 indicated no change and -1 indicated that the NLC had regressed away from being a learning community in terms of pupil activity. Inter-rater reliability across the two researchers rating the same 11 sets of NLCs showed 90 per cent agreement in this coding exercise.

NLC cohort	Number of NLCs rated +1	Number of NLCs rated 0	Number of NLCs rated -1
1a	21	6	0
1b	19	4	0
2a	13	3	0
Total	**53**	**13**	**0**

Figure 6: NLCs' movement towards stage 4 of the stages of engagement in learning

As Figure 6 shows, 53 NLCs were judged to have made progress towards learning community status in terms of their involvement of pupils over two years, 13 were judged to have stayed still while none were rated as having regressed.

A Sign test and McNemar test (see appendix) showed that there is a highly significant statistical difference ($p<0.001$) between the pre- and post- scores. There is strong evidence that the NLC programme has encouraged a statistically significant proportion of networks towards becoming learning communities in their provision for pupil learning experience.

The types of shifts in practice over the two-year period are exemplified by the individual case examples below.

NLC	Extract from submission (2000)	Extract from end of year two review
N184	Informal partnerships exist between three (of the six) schools where there are instances of collaborative learning. As a group of schools we would like to extend our partnership to become a network with the common focus of AfL.	A series of pupil reciprocal visits has happened, including…The focus of this visit was assessment. Pupils brought along their marked work from English, mathematics and science. Each school provided a display or presentation on one of the core subjects to act as a stimulus. Primary pupils had a booklet to help them focus their observations. In year groups they discussed how they were assessed, how they knew when the work was good, did they know how to get to the 'next stage' and how they feed back their experiences of assessment to their teachers. Older pupils ran these discussion groups acting as facilitators, then delivered at BHGS to both phases of pupils and their visiting teachers. Pupil involvement also in research lesson study. These lessons have focused on the same group of pupils across two subject areas. The overall theme for the research lesson study remained assessment for learning but with a specific focus on questioning techniques.

		`
N311	Schools are interested in pursuing *teacher* enquiry. The network has commissioned Dr xxxxxx who has trained the network steering group in action research methods.	There is a student leaders' research group. The work tackled by this group includes the introduction of (student) learning walks and the research that informed the decision to change homework policies in the schools of the network. It has also talked about issues related to the impact of the network in our schools…..A group of highly motivated students who feel like a team empowered.
N278	Inset has taken place on how children learn, types of learners, the learning cycle and the key stage strategies…some experimentation has taken place with regard to peer learning and assessment.	Pupil conference November 2004, involvement of as many pupils as practical – Year 2–Year 6 in the morning, Year 7–Year10 in the afternoon, each group led by Year 11 students using De Bono's hats as a methodology. Four questions asked of mixed age groups…What does good learning look like to you? What does good teaching look like to you? What does good assessment look like to you? What does a good learning environment look like to you? Recorded in any form, but mind maps were the favourite. Co-leaders collated findings and fed back to all staff via website and inset.

Figure 7: Shifts across learning stages over time, as shown by comparison of submission and year two review documents

Further evidence of the move by NLCs towards activity characterised at stages 3 and 4 was found in the annual levels of learning surveys. This survey was sent to all schools in all NLCs during 2003 and again in 2004. The surveys included questions pertaining to network activity at the pupil level, asking teachers, school and network leaders to give their perceptions. In 2003, 3641 completed surveys were returned and 6925 in 2004. Answers to two of the questions were significant with regard to pupils in networks:

	2003			2004		
	Regularly	Often	Sometimes or rarely	Regularly	Often	Sometimes or rarely
Pupils in our network take responsibility for each other's learning (eg through peer assessment or peer mentoring)	8%	25%	67%	27%	29%	44%
Pupil feedback to teachers is used to improve teaching and learning	14%	27%	59%	27%	32%	41%

Figure 8: Data from levels of learning surveys, 2003 and 2004

The table shows a significant shift over the 12-month period. NLCs believed that they increasingly enabled and empowered pupils to take responsibility for the learning of others and to provide feedback which was used to improve their experience of learning.

We have shown that across the networks, provision for pupil learning has achieved increasingly sophisticated stages of development across a broad curriculum canvas and that pupils have appreciated their direct involvement in this work and its impact on their experience and confidence. A significant feature of the later stages of provision is the experience of working in wider networks of participants, reaching out beyond the immediate classroom into the wider school and further beyond into other schools and communities of learners. Such provision offers not only broader contexts for garnering and testing ideas but also for the accumulation of social capital. Notwithstanding the fact that teachers have clearly made provision across these wider networks, the important question remains: to what degree was networking experienced at the pupil level? We now turn to this question.

5. To what degree has pupil participation been networked?

The analysis of activity also looked at the degree to which pupil-related activity was networked across schools within each NLC. It is one thing to be demonstrating higher levels of pupil learning in one classroom, quite another to involve all schools in a network. In order to get a feel for this, each activity was rated for 'networkedness' on a scale of 1 to 4. Frequencies of activities were counted and are represented below:

	1. One class only involved in the activity	2. One school only involved in the activity	3. Two or more schools involved in the activity	4. All schools in the NLC involved in the activity
% of NLCs reporting at least one pupil activity at this level	1%	25%	74%	87%
% of all pupil activities at this level	0.4%	5.8%	39.3%	54.4%

Figure 9: Networked nature of pupil activity

The final column shows that 87 per cent of all NLCs reported at least 1 pupil activity which was occurring in *all* schools within the network. More encouragingly, over half (54 per cent) of all the pupil level activity in NLCs was occurring across whole networks and could be said to be truly networked.

The figures in the table below refer to individual accounts of pupil-related activities by individual NLCs.

	1. One class only involved in the activity	2. One school only involved in the activity	3. Two or more schools involved in the activity	4. All schools in the NLC involved in the activity
'Doing work'	1	1	24	16
'Making sense'	0	12	26	36
'Community of learners'	3	8	54	57
'Learning community'	0	5	42	75

Figure 10: Stages of engagement with learning in relation to networked nature of pupil activity in NLCs

This table confirms that not only have NLCs been successful at instigating pupil activity which has travelled across all schools in each network, but that an extremely high proportion of this activity has been at stages 3 and 4, tending towards that of a learning community.

It seems important to stress again at this point that the spread of activity observed in Figure 10 was by no means inevitable. While networking is certainly a significant feature of a learning community of schools, providing as it does the potential for building social capital, it is not sufficient in itself to move a group of schools towards stage 4 in pupils' experience of learning. A group of schools may come together as a network and plan joint activity, but that activity may remain grounded at stage 1, ie be characterised by a production mode of learning. As this paper has already shown, activity at stage 4 requires careful planning for it to involve and engage pupils in more sophisticated forms of understanding and managing their own learning. For this to happen across a number of schools therefore requires careful preparation and a strong commitment from each of the schools, involving a significant investment of time and energy.

The following examples illuminate the potential for networked activity to occur at either end of the range of four stages of engagement with learning. Stage 4 activity across all schools was demonstrated by NLC N242. Two pupil representatives were selected from each existing school council to come together as a network council. As a group of pupils, they established their collective understanding of the terms 'network', 'learning' and 'community'. They then fed this back to their own schools and led

discussions on key issues for pupils. When they came back together again it became clear that lunchtimes were a network-wide issue. Therefore pupils were selected from each school (with lunchtime organisers and TAs) to attend lunchtime training, part of which included inventing games and putting together a pack for use by pupils at each school.

By contrast, some of the activity reported by NLC N238 was across all schools but was grounded in the lower stages of pupil engagement. Curriculum working groups were set up and produced an action plan for the year, to design and produce 6–8 curriculum-shared teaching and learning resources. Work also commenced on a variety of transition work and this culminated in maths master classes and a science project set up in primary schools and completed in specialist rooms in secondary school. The schools are certainly functioning as a network, but the activity in this case was traditionally based. Encouragingly, examples of the first kind were far more prevalent in the data.

The data offers a rich picture of the breadth and depth of the general pupil experience in NLC schools but to what degree did the programme impact on the test scores, as they are currently measured nationally?

6. How did levels of attainment of pupils in networks compare with those not in networks?

School- and pupil-level attainment data has been made available by the DfES for analysis by the NLG statistician (KS2, 3 and 4 core attainment data). The Fischer Family Trust has also undertaken some analyses of pupil-level value-added data on behalf of the NLG. The analyses conducted on this programme-wide data up to 2005 show some positive indications, but overall there is generally a mixed picture of impact on pupils in NLCs as compared to those in non-NLC schools. The key findings of these programme-wide analyses are summarised in the appendices below.

This mixed, and so far inconclusive picture across the programme is unsurprising given the relative youth of the NLC programme and the wide range of pupil focus and activity which NLCs were able and indeed encouraged to choose, depending on their local context and the perceived needs of their pupils. Nonetheless, there are grounds for real optimism provided by some of the individual NLC case studies which have looked in more detail at impact on smaller cohorts of pupils. Targeted and focused pupil activity at stage 4 of our range of engagements with learning has certainly been shown by individual NLCs to have the potential to impact positively on standards as they are currently assessed nationally. For example:

> Network N224 has managed to close the gap between the highest and lowest attaining schools in the network – at the same time as raising overall achievement at twice the national rate. Gaps between schools were calculated over four years in the KS2 core subjects to see if these differences were decreasing from year to year and thus 'closing the gap' between schools.
>
> For English, maths and science, the difference between the highest and lowest attaining schools in the network decreased from 2002 to 2005. At the same time the bar was raised across the network – the average point score for networked schools increased by 0.4 points from 2002 to 2005, as compared to the national increase of 0.2 points.
>
> Literacy was the particular focus for NLC N267. Attainment data for reading and writing at KS2 from school D was gathered. The pattern of improving results demonstrated the success of the school's approaches to teaching and learning. The percentage of pupils achieving level 4+ for writing rose from 44 per cent to 73 per cent, 2003–2005 and for reading rose from 69 per cent to 89 per cent over the same period.
>
> Network N262 has achieved improvements over time in terms of value added between KS1 and KS2. An analysis of 2003 data revealed that there were four schools within the network which achieved a value-added measure of below 100. In 2004, these four schools displayed improvements in their value-added measures, with the result that all the network schools achieved a value-added score of at least 100.
>
> One of the focuses of NLC N281 was on the performance of higher-achieving pupils, and the data bears out some success. From 2002 to 2004 the percentage of pupils who achieved level 5 in the three core subjects at KS2 increased at a higher rate for schools in this NLC than in its local authority as a whole or nationally. In particular in English, attainment at level 5 increased from 2002 to 2004 for NLC schools while it decreased in the local authority and across the country as a whole over the same period.
>
> NLC N261 developed its own 'Reading and Writing Recovery programme'. Data tracked the improvement of pupils in terms of reading age, spelling age and spelling quotient after 20 weeks of programme intervention. In each year the process has been thorough and systematic. The first five weeks were spent assessing potential pupils in the target schools, followed by two weeks training teaching assistants. The programme leader and teaching assistants worked with the targeted pupils for 20 weeks before a final 4 weeks of assessment. Pupil H who was studied for the case report showed significant improvements – over a two-year period his reading age improved by 6.5 years.

NLCs devoted themselves to promoting higher stages of provision for pupil learning experience with a view to developing that broader set of values, skills and attitudes foundational to a commitment to lifelong learning. Our earlier analyses showed how successful they had been in setting up these advanced arrangements for learning across a broad range of the curriculum and how successfully the pupils had engaged with and appreciated this provision. The case studies immediately above show that in many instances spectacular gains have been made in terms of traditional measures of standards of achievement. The broader statistical picture is less persuasive but at worst it shows NLCs have maintained the pace of school improvement across the system. We now turn again to the broader picture of children's interests as set out in the ECM agenda.

7. To what extent has the NLC project provided a foundation on which to meet the objectives of the Every Child Matters strategy?

The policy shift noted in the conceptual framework has necessarily affected the ways in which NLCs have chosen to develop, perhaps finding in their 'networkedness' the structure and relationships which may facilitate the necessary 'joined-up' approach to making a success of, for example, the ECM agenda. A range of examples can be used to illustrate the approaches and activities that are being undertaken in attempts to get to grips with the five ECM priorities. In relation to improving pupils' enjoyment and achievement in learning and increasing the ways in which children make a positive contribution, there are ample examples of the strategies and approaches adopted by NLCs to develop classrooms, schools and learning communities which embody those priorities. Some further examples of NLCs' role in improving children's mental and physical health, ensuring and developing their abilities to be safe as well as creating strong foundations for their future economic well being, can also be itemised, indicating the ways in which membership of NLCs can help schools and other agencies to dismantle the old-fashioned silo approach to children's services.

Much of the work beyond individual organisations is focused on developing more effective multi-agency approaches. Some of the most extensive attempts to generate both extensive community involvement and flexible organisation can be seen in the work of NLC N188. Combining increasingly effectively with its local authority, this secondary network has been involved in auditing health issues and counselling. Accessing funding through The Children's Fund has enabled the network to gather expertise and to work with a multi-agency focus. The network is also part of a group investigating the local authority approach to developing emotional intelligence and literate schools at both primary and secondary level, and one of the co-leaders is advancing this initiative as part of a multi-agency steering group within the borough.

Equally committed to a wide community focus, NLC N312 has, from the outset, stressed its aspiration to transform its community as well as its schools. Located in a town characterised by economic deprivation where 44 per cent of children live in low-income households, the NLC includes all 17 of the town's schools. In the words of one of the headteachers:

> *"I think what's happened with the NLC is we've all woken up together to realise there are a lot of key issues that need solving, that we're just one player among other people and that we really do need to do our best to engage with our locality very fully."*

The network provides a much broader constituency of users to consider than would be the case if only one school were involved, providing a far more effective forum for bringing together all of the agencies whose actions affect the lives of children and families in the area. In 2005 the network was able to secure funding from the DfES Innovation Unit to become one of the first federations in the country. This is enabling them to develop strategies that encourage children to 'make a positive contribution'. In spring 2006 pupil representatives from each school will give a presentation to local politicians outlining the key wishes from pupils in their schools, thus providing a user perspective perhaps not available at present. Through such activities the NLC is seeking to listen and respond to its most vulnerable members in ways that should raise their self esteem and sense of themselves as valued members of the community.

In some NLCs, generating international networked links is also offering pupils opportunities to contribute positively to their own and others' development. The increased levels of understanding of themselves and others is apparent in the judgements of Year 8 and 9 pupils from N210 on their return from an exchange with pupils as part of a UK-Maltese Arts project:

> *"A couple of my friends told me I had changed when I got back. You just realise how things could be – it's your attitude which has changed, I think. You know you could do better. If other countries can be like polite then so can we. Yeah, they are not lazy like us. They pick litter up and stuff where we just chuck it out of the window."* (Year 8 pupil)

"I know I've changed since I've come back [from Malta]. It changed the way we think about things. My family say I am more confident now and I just seem happier." (Year 9 pupil)

Enabling pupils to understand the importance of emotional intelligence is a key aim of many, particularly primary, networks. This is most clearly illustrated in the activities of NLC N258 whose work is centred upon *'Giving pupils the language of feelings and emotions and strategies to raise self-esteem, confidence, empathy, and develop relationships in a positive way*'. [Annual Conference, 2005, Learning Conversation]. In the Annual Enquiry 2005 particular case studies are used to illustrate the impact on children and their families of what is being done in the schools in this network:

Case 2: boy now in Year 6: situation described by the deputy head
"J has dyslexia. Throughout his time in school he found it difficult to mix and was aggressive to other children – hitting them… complex family problems. Because of his anger people often thought J was not bright."

Outcome:
"Now he takes on many responsibilities, is able to better control his anger, knows how to walk away, takes time out sessions, and has far better relationship with others. Achieved two level 5s in science and mathematics, level 3 in English... (Would have been level 2 in English, level 3 in mathematics and level 2 in science.)"

Action taken:
Outside team anger management used: "*problem-solving activities, alternative answers .. ways of responding when angry. Twice a week he goes to the Acorn room* (nurture room). *This is time for him to talk about any problems."*

Such positive outcomes for individual children, made possible in the eyes of the teachers in the network by the collaborative INSET and resulting shared thinking about emotional intelligence, reinforce the importance in terms of improving life chances that such approaches can make. In a local authority-wide network, N269, 11 primary schools and 1 secondary have created a Mobility Network, the focus of which is to improve school experiences for pupils who move frequently between schools. They have put together a publication: 'Safe, Settled and Valued' for all schools to use. The network and local authority anticipate that this will significantly help to improve the educational experiences and hence achievements of one of the most vulnerable groups of pupils.

8. Summary of the analysis

The analysis shows that pupils in the NLCs predominantly experienced the more sophisticated forms of engagement with learning as described in the conceptual framework. These pupils were significantly more engaged as communities of learners and ultimately in learning communities than they were in more traditional forms of classroom experience. In this respect they were put in a position consistent with contemporary theories of thinking, learning and epistemology. To that degree, they were well positioned to develop that corpus of knowledge, skills, attitudes and values which lay the foundation for lifelong learning.

The provision was deployed over a broad range of the curriculum, with success in ICT being particularly evident. Most importantly, the pupils fully appreciated the opportunities being offered them and engaged enthusiastically in particular where possibilities for personalisation were most evident. As documented, over the life of the networks this provision was enhanced significantly suggesting that more and more pupils were engaging in stage 3 and 4 activities and fewer and fewer in stage 1 and 2 experiences. In addition to that, the pupil experience was predominantly networked across many classes and schools. Increasingly then, pupils were experiencing opportunities for broadening their skills base and building social capital.

Data on attainment comparing NLC and non-NLC schools shows across the piece no significant difference, but case studies show some spectacular instances of significant advances in achievement in some targeted children. Also, case studies show that networks had met the classroom-based demands of the ECM agenda. At the same time many networks had developed multi-agency working to collaborate with other service providers to meet the more demanding challenges faced by some pupils related to their capacity to engage with learning opportunities.

9. Commentary

These results are more than encouraging. Given the opportunity, the NLCs provided learning experiences appropriate to 21st century demands of education. Pupils were afforded the possibilities of learning how to learn and of acquiring social capital through networking as learning communities. Pupils in their turn took extensive advantage of these opportunities and recognised the value of them.

Some reservations are in order before thoughts of generalising from these results can be entertained. First, much of the data was from self-reports. It would be essential to validate these through objective, third-party observation. Second, NLCs in the study were all self- selected. Each volunteered and took some trouble to be involved. It can safely be assumed that they were confident of their capacity to deliver on their creativity and opportunity. It does not follow that schools in general could achieve these outcomes. Additionally, there were no appropriate comparator groups against which to judge the achievements of schools in the initiative. This concern is ameliorated by the observation of the developments of network schools against their own high standards. Using each school for which there was sufficient data as its own comparator, significant enhancement in provision for learning was evident. Finally, it should be emphasised that although impressive provision was shown at all key stages and in most curriculum areas, individual pupils focused on a narrow front. This raises the question of how far the provision could be sustained if energies were to be spread in each school across the board.

The main lesson learned is that great things are possible amongst the focused and committed. Among the questions that remain unresolved are:

- How substantial were the pupils' gains?
- How far might the gains generalise to other settings or even to other areas of the curriculum?
- Are the gains sustainable in the longer term?
- What was the variety or variance of pupil response?
- Were there losers and if so who were they?
- Which of the experiences worked best for the pupils and which were less sustaining?
- What was learned from the relative failures in provision?

The study shows what can be done. It does not show how to do it in the general run, nor does it show how broad, substantive or sustainable are the pupil gains. All these questions would be the proper subject of a further, scaled-up study in a development and research paradigm.

References

Bransford, J, Brown A L & Cocking, R (eds.), 1999, *How people learn: mind, brain, experience and school,*. Washington, National Academy

Bruner, J, 1996, *The Culture of Education,* Cambridge MA, Harvard University Press

Clarke, S, 1998, *Targeting Assessment in the Primary Classroom,* Oxon, Hodder & Stoughton

DEMOS, 2005, *About learning: report of the Learning Working Group,* London, DEMOS

Doyle, W, 1983, Academic work. *Review of Educational Research* 53, 2, 159-199

Doyle, W, 1986, Classroom organisation and management. In Wittrock, M C (ed.), *Handbook of research on teaching,* New York, Macmillan

Ericsson, K A, 2002, Attaining excellence through deliberate practice: insights from the study of expert performance. In Desforges, C & Fox, R (eds.), *Teaching and Learning,* Oxford, Blackwell

Fisher, R, 1990, *Teaching Children to Think,* Cheltenham, Nelson Thornes

Galton, M, Gray, J & Ruddock, J, 1999, *The impact of school transitions and transfers on pupil progression and attainment,* DfES Research Report 131

Hadfield, M, Kubiak, C, Noden, C & O'Leary, D, 2005, *Network building: a review of the formation stage of networks in the NLC programme,* Nottingham, National College for School Leadership

Hargreaves, D, 2004, *Personalising Learning,* London, Specialist Schools and Academies Trust iNet

Holdsworth, R, 2000, *Discovering Democracy in Action: Learning from School Practice,* Melbourne, Australian Youth Research Centre & Commonwealth of Australia

Lave, J & Wenger, E, 1991, *Situated Learning: Legitimate Peripheral Participation,* Cambridge, Cambridge University Press

Leadbeater, C, 2005, *The shape of things to come,* London, DfES Innovation Unit

Marshall, H, 1988, Work or learning: implications of classroom metaphors, *Educational Researcher* 17, 9, 9–16

Rogoff, B, Matusov, E & White, C, 1996, Models of teaching and learning: participation in a community of learners. In Olsen, D & Torrance, N (eds.) *The handbook of education and human development: new models of learning, teaching and schooling,* Cambridge, MA, Blackwell

Rogoff, B, 1994, Developing understanding of the idea of communities of learners, *Mind, Culture and Activity* 1, 209–229

Stott, A, Jopling, M & Kilcher, A, *How do school-to-school networks work?* Nottingham, National College for School Leadership (Learning networks research legacy paper 4)

Wang, M C, Haertal, G D & Walberg, H J, 1993, Towards a knowledge base for school learning, *Review of Educational Research,* 63, 3, 249–294

Watkins, C, 2005, *Classrooms as learning communities: what's in it for schools?* London, Routledge

White paper, 2005, *Higher standards, better schools for all: more choice for parents and pupils,* London, HMSO

This paper was produced as one of a series of four research legacy papers based on comprehensive analysis of all the research conducted and commissioned by the Networked Learning Communities programme. The other papers examine leadership in networks; adult learning; and how school-to-school networks work.

Appendices

Appendix 1

Data used in this analysis - scope and scale

The data used for this report is summarised as follows:

Data source	Number available	Completed by	Comments
NLC Submission documents*	66 available electronically	Prospective NLCs	Key sections were – • statement about 'current position with regard to pupil learning and outcomes.' • intended pupil learning focus
Year one review documentation	39 sets of review documentation	Network leaders and staff.	Key sections were – • pupil-level activity log for the year • restated pupil learning focus • traffic lights exercise, pointing to targets achieved or not • priorities for year two
Year two review documentation*	36 cohort 1a 35 cohort 1b 22 cohort 2a	Network leaders and staff	Key sections were – • pupil-level activity log for the year • traffic lights exercise, pointing to targets achieved or not
Levels of learning survey results 2003 and 2004	3651 returns 2003 6925 returns 2004 An analysis of the returns for each NLC was available	School staff from all networks	This was a wide-ranging questionnaire sent to all networks for completion by staff
Detailed case reports of NLCs – annual enquiry 2005	12 NLCs were researched and a case report available for each	NLG research team conducted the primary qualitative and quantitative research	The focus of research and case reports was the impact of NLCs on pupil attainment, achievement and engagement
Interview transcripts from phase 2 of the NLG external evaluation	Transcripts of interviews with 3–5 teachers and leaders from 20 network schools	Interview schedule was drawn up independently, interviews conducted by NLG researchers	The external evaluation of the NLG programme is being carried out in 3 phases by Aporia Consulting Ltd. Phase 2 comprised detailed interviews with adult members of networks
Pupil voice conference	Vignettes of workshops run by pupils	Summaries of plans provided by pupils running workshops and feedback from adults and pupils who attended	Source of detailed descriptions of activities in schools and networks with pupil insights into impact on their learning

*Blank versions of some of these forms are contained in Appendix 4

Appendix 2

Pupil attainment data across the programme – the 'headlines'

Below are the key findings from the analyses conducted into pupil achievement data for all NLCs in the programme.

Attainment

KS2:

- The percentage of pupils achieving level 4 or above in maths in NLC schools has risen at a greater rate from 2003–2005 than for pupils in non-NLC schools (2.1 per cent increase vs 1.7 per cent)
- The percentage of pupils achieving level 4 or above in science in NLC schools has dropped from 2003–2005 but at a lower rate than for pupils in non-NLC schools (-0.9 per cent increase vs -1.5 per cent)
- The percentage of pupils achieving level 4 or above in English in NLC schools has increased at the same rate as that for pupils in non-NLC schools (2.7 per cent increase)

KS4:

- From 2003–2005 the percentage of pupils achieving 5+ A*–C grades at GCSE in NLC schools has increased at a greater rate than for pupils in non-NLC schools (3.8 per cent increase vs 2.6 per cent)
- From 2003–2005 the percentage of pupils achieving 5+ A*–G grades at GCSE in NLC schools has increased by 0.2 per cent while the non-NLC percentage has remained constant

Value added

The Fischer Family Trust analyses of pupil-level data used value-added scores and made comparisons between NLC schools and non-NLC schools of similar composition and context. The analysis compared rate of change in value-added measures from 2003–2005 and concluded:

KS1– KS2:

Of the 118 networks that provide KS1 to KS2 value-added data:

- 65 (55 per cent) showed faster improvement than schools nationally
- 7 (6 per cent) were the same as similar schools nationally
- 46 (39 per cent) showed slower improvement than similar schools nationally

KS2 to KS3:

Of the 90 networks that provide KS2 to KS3 value-added data:

- 37 (41 per cent) showed faster improvement than similar schools nationally
- 6 (7 per cent) were the same as similar schools nationally
- 47 (52 per cent) showed slower improvement than similar schools nationally

KS3 to KS4

Of the 92 networks that provide KS3 to KS4 value-added data:

- 44 (48 per cent) showed faster improvement than similar schools nationally
- 8 (9 per cent) were the same as similar schools nationally
- 40 (43 per cent) showed slower improvement than similar schools nationally

Appendix 3

Statistical tests

Pupil activity by stage (page 9)

NPar Tests
Chi-Square Test
Frequencies

cats1 and 2

	Observed N	Expected N	Residual
0	37	31.0	6.0
1	41	31.0	10.0
2	15	31.0	-16.0
Total	93		

cats3 and 4

	Observed N	Expected N	Residual
0	17	31.0	-14.0
1	40	31.0	9.0
2	36	31.0	5.0
Total	93		

Test Statistics

	cats1and 2	cats3 and4
Chi-Square [a]	12.645	9.742
df	2	2
Asymp. Sig.	.002	.008

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 31.0.

Ratings of progress of NLCs over time (page 24)

- The Sign test shows there is a highly significant statistical difference between the pre_ and post_ scores (Z = -7.13, p<0.0001). This also shows that the data is not normally distributed.
- The McNemar test shows again a statistically significant difference was found between the pre_ and post_scores (χ^2 = 51.02, N = 66, p<0.0001).

NPar Tests
Sign Test

Frequencies

		N
post_score - pre_score	Negative Differences[a]	0
	Positive Differences[b]	53
	Ties[c]	13
	Total	66

a. post_score < pre_score

b. post_score > pre_score

c. post_score = pre_score

Test Statistics[a]

	post_score - pre_score
Z	-7.143
Asymp. Sig. (2-tailed)	.000

a. Sign Test

NPar Tests
McNemar Test
Crosstabs

pre_score & post_score

	post_score	
pre_score	0	1
0	13	53
1	0	0

Test Statistics[b]

	pre_score & post_score
N	66
Chi-Square[a]	51.019
Asymp. Sig.	.000

a. Continuity Corrected

b. McNemar Test

Appendix 4

Exemplars of forms completed by NLCs

These formed the key data sets for this paper:

1. Submission form – completed by all prospective NLCs prior to acceptance onto the programme
2. Activity record – completed by NLCs as part of the year two review process
3. Self-evaluation record sheet – completed by NLCs as part of the year two review
4. The traffic lights task – completed by NLCs as part of the year two review

NAME OF NLC:

URN NUMBER (for office use only) 02/002

2003

SEPTEMBER

COHORT TWO

Submission Form

Part One

1	Name of networked learning community
2	Named contact during the submission process
3	Correspondence addresses and contact information for co-leaders
4	What is the overall learning focus of your project? (no more than 100 words)
5	Why have you chosen this as your learning focus?

6 Five levels of learning

With reference to the aims of your network, please describe:

- the current stage of development of each of these levels in your network
- what you will do and how progress will be made in three years towards raising standards by improving the learning of pupils, teaching and support staff, school-to-school learning, the development of leadership for learning and building capacity for growth and continuous improvement

6.1 Pupil learning and outcomes

Current situation:

Progress in three years – what activities will your network engage in to progress the learning focus?

What support do you require from us?

How will you demonstrate evidence of progress?

6.2 Staff learning and professional development

Current situation:

Progress in three years – describe what training and development activities your network will be operating

What support do you require from us?

How will you demonstrate evidence of staff learning and professional development?

6.3 Leadership development

Current situation

Progress in three years – how will you model headteacher learning and advance leadership within your network?

What support do you require from us?

How will you demonstrate evidence of leadership learning within your network?

6.4 School-wide and organisational learning

Current situation

Progress in three years – how will learning be operating across each school and how will schools have adapted to create better learning conditions?

What support do you require from us?

How will you demonstrate evidence of school-wide and organisational learning within your network?

6.5 School-to-school learning

Current situation

Progress in three years – what will you be doing to ensure school-to-school learning?

What support do you require from us?

How will you demonstrate evidence of learning between schools within your network?

7 Network timeline

Please follow the template provided. This is available, with an example, on our website www.ncsl.org.uk/nlc

7.1 Complete a draft timeline for the first 12 months

Name of networked learning community:

Summary of details, aspirations, intentions and actions in relation to further developing networking

The existing practice within and across the network includes:	Year one September 2003 to August 2004		
	Autumn 2003	Spring 2004	Summer 2004
Pupil learning			
Adult learning			

Name of networked learning community:

Summary of details, aspirations, intentions and actions in relation to further developing networking

The existing practice within and across the network includes:	Year one September 2003 to August 2004		
	Autumn 2003	Spring 2004	Summer 2004
Leadership learning			
School-wide learning			
School-to-school learning			

7.2 Complete a draft timeline for the next three years

Summary of details, aspirations, intentions and actions in relation to further developing networking

The existing practice within and across the network includes:	Years two–four September 2004 to August 2007		
	Year two Sept 04–Aug 05	Year three Sept 05–Aug 06	Year four Sept 06–Aug 07
Pupil learning			
Adult learning			

Summary of details, aspirations, intentions and actions in relation to further developing networking

The existing practice within and across the network includes:	Years two–four September 2004 to August 2007		
	Year two Sept 04–Aug 05	Year three Sept 05–Aug 06	Year four Sept 06–Aug 07
Leadership learning			
School-wide learning			
School-to-school learning			

8 NLC finance template

Category			Total monies required	Monies requested	Matched funding
1 Human resources					
2 Professional development					
3 Learning packages					
4 Materials development					
5 Infrastructure					
6 Travel and subsistence					
7 Contingency					

Part Two

1	Details of each school and organisation in your networked learning community
Fifty word summary description of school or organisation including designation, size, age-range, context and any other major initiatives that the school is involved with (eg EiC, Beacon, Specialist, etc).	
2	Details of the first identified co-leader in your networked learning community
Fifty word pen portrait of co-leader	
3	Details of the critical friend you have identified in your networked learning community
Fifty word pen portrait of critical friend	

4	Details of the consultant to your networked learning community (if applicable)
5	Additional information
Please write 300 words (approximately) to convey the aspirations of the networked learning community. Describe succinctly your network plans – how you envisage 'being the difference that makes the difference'.	
6	Statement of commitment
Please include here a statement of commitment to the Networked Learning Communities submission signed by the headteacher and chair of governors of each school and by any partners involved.	

Year two review activity log

No.	List and briefly describe the key activities you have been doing with date started and duration **(No more than 300 words approx)** Network name:	a) How many - schools involved, adults/pupils affected	Tick levels of learning involved*			If we visited, what outcomes would you show us?
1.			P	A	L	
2.						
3.						
4.						
5.						

Please add rows as needed

Postal address:
NCSL
Networked Learning Group
Derwent House
Cranfield University Technology Park
University Way
Cranfield
MK43 0AZ

Year two review

NLC Self-evaluation record sheet (NLC self-assessment)

Please return this record sheet with your activity log, traffic lights summary, network-o-gram and network development and finance plan nlc@ncsl.org.uk

Please tick to indicate the development stage you have assessed for your network alongside each of the four assessment criteria. Use the Network Assessment Criteria booklet to help you.

Assessments should be made according to a best-fit model and a whole number must be identified between 1– 5.

NLC Name …….					
Criteria	Development stage				
	5	4	3	2	1
1. Pupil learning					
2. Adult learning					
3. Leadership learning					
4. Network development					

National College for School Leadership

Networked Learning Communities

learning from each other | learning with each other | learning on behalf of each other

The Traffic Lights Task

New Structures and Processes Pro-forma

Please list below any **new structures and processes** you have put in place in the following levels of learning.	Please indicate whether you grade this as **yellow or green**
Pupil	
Adult	
Leadership	
School-wide	
School-to-school	
Network-to-network	

Red lights pro-forma

Please list below any structures and processes you have marked-up as red in your year two plans. Put a number against each in your original plans and copy that into the first column. In the second column, please indicate why this structure or process was stopped or not implemented.

Number	Please indicate why you stopped or did not implement this process or structure?
Pupil	
Adult	
Leadership	
School-wide	
School-to-school	
Network-to-network	