CHAPTER 2 THE NATIONAL LITERACY AND NUMERACY STRATEGIES

This chapter reports the diverse and contrasting views on the national literacy strategy (NLS) and the national numeracy strategy (NNS) held by headteachers and teachers in our study. While many criticisms were made of the NLS, despite some caveats the NNS received overwhelming support. Various reasons were given for this but, most importantly, the content and underlying principles of the NNS were regarded as preferable, with more to offer teachers and schools and more benefits derived by pupils. In all schools the strategies, particularly the literacy and numeracy hours, were being adapted to a minor or greater degree, ranging from modifications to teaching made by individual teachers through to major whole-school changes resulting from a review of literacy or numeracy practice. The much less popular NLS was subject to greater adaptation than the NNS. As a result of teaching methods promoted by the strategies, the literacy and numeracy lessons observed during this study were very different from those observed and discussed a decade ago. Teachers considered these teaching methods to have improved the quality of their teaching.

The DfES' Standards and Effectiveness Unit commissioned a team of researchers based at the Ontario Institute for Studies in Education, University of Toronto, to provide an external evaluation of the implementation of the NLS and NNS. The team collected data over the first four years of the strategies' implementation at national and local levels producing three reports, the final one of which summarised the key findings of the evaluation and the implications for understanding the process of large-scale reform. At the outset they found that "headteachers and teachers were enthusiastic about both Strategies, numeracy in particular" (Earl *et al*., 2001, p.51) and that "most concerns or reservations that were expressed were with portions of the Strategies, rather than the Strategies on the whole" (p.55) – findings that were broadly replicated in their final report (Earl *et al*., 2003).

While our research suggests mounting criticism of the NLS, the data reveal a continuation and further consolidation of positive views and experiences in relation to the NNS. Earl *et al*. (2003) conclude that: "The major shifts associated with the Strategies have been an improved range and balance of elements of literacy and mathematics being covered, increased use of whole-class teaching, greater attention to the pace of lessons, and planning based on learning objectives rather than activities" (p.3). Our data portray teachers' perceptions of the strategies and the impact of these "major shifts" since the evaluation was conducted. This chapter reports these perceptions and considers how far, and in what ways, the strategies have become embedded in primary school culture.

Teachers' general response to the strategies

Key criticisms sometimes made of qualitative research studies, especially in relation to their potential implications for policy makers, are that the samples are often too small to warrant valid generalisations and that it is not possible to assess the wider representativeness of the emerging themes that are subject to in-depth analysis from interview data (Gorard, 2001). Our use of a relatively large interview sample enables us to present, where appropriate, a broader quantitative picture of our interview responses as a context for the more nuanced qualitative analysis of key themes. To begin here with such a quantitative picture, each of the 188 interviews was scrutinised for evaluative comments made about either the NLS or the NNS or both. A threefold classification was used of "strongly like", "strongly dislike" or "mixed responses" where interviewees could not be firmly placed in either of the other two extremes. Not all the interviewees were explicitly asked for their reactions to the NLS and NNS, and some used general descriptive terms without expressing evaluative opinions and therefore could not be included in the classification. The total number of interviews coded with evaluative responses was 124 for the NLS and 119 for the NNS. While inevitably such a simple threefold classification cannot do justice to an in-depth understanding of teachers' views, it does have the advantage of providing a reasonably reliable representation of the entire sample's views. In doing so, it highlights some interesting patterns.

About 20% of the sample (23 interviewees) strongly liked both strategies:

> *I think that the national numeracy strategy and the national literacy strategy have been really, really big steps forward. They have been excellent and I like the structure of them [literacy and numeracy hours], and I think that is great for kids who do not benefit from just being given tasks and asked to finish them in their own time. (KS2 coordinator, 185, June 2003)*

Note: in this case and in each instance hereafter, where a number is given it refers to the number of pupils in the school, eg 185

However, as can be seen from a comparison of Tables 2a and 2b, the NNS was viewed very much more favourably than the NLS.

Table 2a Teachers' responses to the national literacy strategy (%s; N= 124)

Strongly like	Mixed responses	Strongly dislike
19%	68%	14%

Table 2b Teachers' responses to the national numeracy strategy (%s; N= 119)

Strongly like	Mixed responses	Strongly dislike
52%	45%	3%

Another indication of this differential response is that 7 of the 17 interviewees coded as "strongly" disliking the NLS were coded as "strongly" liking the NNS. For example, one headteacher was extremely critical of the NLS, principally because she perceived it as causing a drop in the school's literacy standards:

> *The literacy I think is a load of rubbish and our standards have gone right down. But I've always argued that. We've always believed you give it at least two years and give it a really, really fair trial doing it as it is. Our writing – we used to have a really, really fantastic standard of writing – creative writing, poetry, you know, letters of complaint, anything, and that just disappeared because they weren't writing for any length of time. So we had a lot of problems. And the reading – if you didn't hear them read regularly, independently and discuss their work with them then their reading standard was going down. (Headteacher, 43, June 2004)*

However, this particular headteacher was very committed to the NNS, the implementation of which had led her to challenge her assumptions about effective practice:

> *I think the numeracy has definitely raised standards. At first I thought no way is this going to work … I said a week visiting multiplication and division is no good and then going back a term later and doing it. And I was totally wrong because it is absolutely fantastic and it does keep some rolling and somehow, apart from the fact that it's encouraging mental computation a lot more than we did before, the fact that they're able to switch horses – instead of doing like two, three or four weeks on one topic they can switch and move on so our standards have definitely risen. (Headteacher, 43, June 2004)*

In Earl *et al*.'s research (2003) into the early stages of the implementation of the strategies it was found that headteachers viewed them more favourably than other teachers. In our sample, a comparison of Tables 2c and 2d with Tables 2a and 2b suggests that, when the strategies had more firmly bedded in, the responses of headteachers and teachers were very similar.

Table 2c Headteachers' responses to the national literacy strategy (%s; N= 38)

Strongly like	Mixed responses	Strongly dislike
16%	63%	21%

Table 2d Headteachers' responses to the national numeracy strategy (%s; N= 38)

Strongly like	Mixed responses	Strongly dislike
53%	45%	3%

Finally, whilst sometimes researchers have found teachers' responses to the '90s reforms differ between those who had entered teaching before and after the implementation of the Education Reform Act 1988 (eg Day, 2002; Osborn *et al*., 2000), Tables 2e and 2f suggest only a very small tendency towards this in our sample.

Table 2e A comparison of views on the NLS of teachers starting their first job prior to and after 1990 (%s; for pre-1990 N= 82, post-1990 N=42)

	Strongly like	Mixed responses	Strongly dislike
Pre-1990	17%	68%	16%
Post-1990	21%	69%	10%

Table 2f A comparison of views on the NNS of teachers starting their first job prior to and after 1990 (%s; for pre-1990 N= 78, post-1990 N=41)

	Strongly like	Mixed responses	Strongly dislike
Pre-1990	50%	47%	3%
Post-1990	56%	39%	5%

Benefits and limitations of the strategies

The introduction of the strategies, designed to transform primary schools, was described by Earl *et al*. (2003) as "the most ambitious large-scale educational reform initiative in the world" (p.11). The need for such a transformation was viewed as a public declaration of the government's lack of trust in the expertise of the teaching profession:

I do think that when the strategies were introduced there was this huge implication that things were terrible and that teachers were not teaching correctly. I think everybody felt threatened by that. I know that from going on courses. There was a great feeling of discontent, particularly when the literacy strategy came on board because we had had nothing like that. People really did feel very, very threatened by it. (Deputy head, 430, Jan 2004)

The main downside of over prescription in the strategies was the lack of flexibility, which meant that if, by choice or circumstances, a lesson did not occur you fell "behind a day with everything knocked out" which was a source of anxiety.

However, for many teachers, knowing exactly what ought to be covered to teach the basics thoroughly, especially for teachers who lacked confidence in either literacy or numeracy, was very positive:

For me personally I like it because I am not that strong on literacy. You have got the hour where you are sharing some text at the beginning and then you have got some sentence level, some word level work, and a plenary … but here I would say that it is a more flexible approach. You might not even have the hour one day; it might just be a lesson where you are doing some extended writing. I like it with the structure and you are showing the children good examples of literature and you are pointing out examples within that text. I like it, I agree with it and I think that it is good. (Year 3 teacher, 580, Jan 2004)

Personally speaking as a teacher, and I have never stopped teaching though I have been a head for 16 years, but I have always, always taught and maths was my specialist subject. I think that the numeracy strategy is the best innovation I have come across in my time as a teacher because I think it has got the emphasis in all the right places, particularly the mental strategies and things like that. The support is there for teachers through the framework and I think that it is really well thought out. (Headteacher, 280, Feb 2004)

Earl *et al*. (2003) described the infrastructure of the NLS and NNS, with its regional directors and LEA staff for literacy and numeracy in charge of linking schools to the central agencies and bringing about change, as "impressive and efficient" (p.54). The teachers in our study readily acknowledged that through national and LEA training, materials to support the strategies and school-based professional development, they had increased their knowledge of literacy and numeracy and reflected on, and improved, their practice. However, the need to maintain the direction and momentum of the strategies required teachers to continually update their knowledge. Thus professional development, rather than being a source of motivation and inspiration, was experienced as a constant pressure, a cause of anxiety and therefore a negative process:

I think on all the various courses that you go on every subject leader puts forward their subject as a role of major importance within the school. There is this constant feeling that you are not doing enough about a certain element! So even within the literacy – at one point it was, well, we had a wonderful time, we have looked at this book, we have really done well and we have taken on so much. Then you will go on the next course and it will all be about syntax and you think, did I really mention enough of that to get it done? You might be teaching what you think are really sound numeracy skills and then you will find something will trigger the fact that you haven't done enough investigative work with it. There is always something there that you seem not to be able to keep up with. In your real moments you know that you couldn't possibly keep up with everything, but there always is that feeling you are never quite good enough. (Year 5/6 teacher, 144, June 2003)

I just feel completely overloaded with it. I mean I do develop professionally now, but I don't feel like it is me thinking "Oh I want to teach better". I feel like it is a pressure. It is more a negative thing now in that you think you are going to be identified as sub-standard or something if you don't keep up to par – which maybe is what the profession needed – I don't know. (KS2 coordinator, 280, Feb 2004)

The majority of headteachers valued the strategies for encouraging continuity and consistency of teaching across the school so "harmonising what is going on in a much more clear transparent way". Several reported having used the strategies to monitor and support weaker members of staff, to improve the quality of their teaching and to exert pressure for improvement where teachers were reluctant to change. However, a small minority complained that such staff used the strategies as a "crutch", delivering literacy and numeracy lessons "unthinkingly without taking into account the needs of the children". Headteachers also reported that "teachers don't change into other years now because they have got their resources all lined up", which made it difficult to spread expertise around the school and to prevent weaker teachers permanently teaching Years 3 and 4.

The strategies were generally viewed as very positive in ensuring children across England had access to the same content in literacy and numeracy, so that children moving schools would have had similar experiences to their new peers. The strategies were also regarded as providing pace, structure and objectives that helped children to understand the purpose of their work and to work harder:

We had the national literacy and numeracy strategies and so it was very set what objectives you need to cover in your year group. Whereas before literacy and numeracy, a lot of classes just worked through a text book and there seemed no sort of link from one page. That has completely gone now. The children can see the purpose of one lesson and the one before and the one coming next. (Year 5 teacher, 450, Nov 2004)

In some schools the NLS was regarded as having brought about considerable changes in the teaching of reading:

I mean really it has changed hugely in that there is now a clear structure for introducing phonics, which wasn't there, and I think that is really positive. Reading in general — we used to hear children read as individuals and that is very rare now; the children read in the group reading session. The only time that we hear them read as individuals is where they are demonstrating a reading skill. (Deputy head, 391, Oct 2004)

However, this was also an area headteachers often felt had been well taught before the NLS, with many teachers declaring that to varying degrees they had always used phonics to teach reading.

For teachers that did not have a particular expertise in literacy, the NLS was very beneficial as it prescribed what should be taught, whereas before some had struggled to come up with varied activities:

Before NLS you were scratching around sometimes for activities: "Oh I don't know what to do so I'll do a story today. That will fill a good hour." Those days are gone because you're more structured about what you're teaching and it's more like little bite-sized chunks that you put into it. So, it's much harder to teach but probably beneficial, because if you took a standard literacy hour you're working a lot harder to teach it rather than the example I just gave of doing a story. (Year 6 teacher, 279, May 2005)

The most frequently cited benefit was that "it's hugely increased the number of genres that children are exposed to both in reading and in writing and that is an enormous plus":

I think the literacy strategy and the numeracy strategy changed everybody's views… I am saying "everybody's" but it certainly changed mine — my views as a teacher and how to teach the subjects because I think that if we are all honest we weren't teaching literacy as it should have been taught. I think… I am not saying everybody, but I think that people just tended to get out an exercise book or a Reasons for writing *book. I know certainly that when I came in as an NQT I didn't really have any clues how to develop the various genres of writing. It was a case of exposing the children to these genres rather than teaching the genre and I think that is a change. (Deputy head, 275, Oct 2003)*

One of the major things is that teachers show models of what can be done. I think that in the past, we used to expect the children to be able to do it from our introduction and explanation of how it is done. If they see an example of how something is done then they do produce a much better job themselves. When I was showing them a model of how to do the poster they came out with lots of ideas of clubs and things. (Year 5 teacher, 566, June 2003)

In addition to clarifying what was expected and providing ideas, "it gets children interested in all forms of literature so in my class last week we were doing these poems and they loved them – that Walter De La Mare poem about my brother's horse – it was really good and they were translating the poem from poetic language into everyday written English" (Year 5 teacher). The NLS was also regarded as having focused attention on trying to address the underachievement of boys in reading and writing.

However, interview questions about the NLS invoked very strong negative responses from a small minority of headteachers, who were dismissive of it in its entirety because they perceived its implementation as causing a fall in their school's standards. Also, most teachers tempered their positive comments with criticisms of the limitations of the NLS, particularly the adverse effects it had on pupil writing and the overemphasis on technical language and grammar: "It's still very difficult to be talking to the children in terms of subordinate clauses and phrases and punctuation when some of them can't even read properly."

Some teachers also referred to the negative effects on pupils' speaking and listening skills, attributed to an overemphasis on teacher input which "they [those responsible for the NLS] should have known from the beginning – they don't necessarily know what's good for children". A few heads spoke of incorporating staff meetings and/or training sessions on speaking and listening into their school improvement plans for 2005-06.

While aspects of the NLS came in for considerable criticism from many teachers for having adverse effects on pupil attainment and motivation, the NNS was regarded by most teachers as having mainly very positive effects. Several teachers favourably compared the level of numeracy of the children they taught with that of their own children and/or their own numeric competency on leaving school. As in Jones' (2002) comparative questionnaire survey of the impact of the NNS with the numeracy initiative in Wales, headteachers reported that the NNS had improved teacher motivation and the quality of teaching in mathematics. Most also considered that it had directly contributed to raising their school's maths standards.

In order to investigate the effects of the NNS on attainment, the Leverhulme Numeracy Research Programme and Nuffield Extension Study collected comparable test data on Year 4 pupils before and after the NNS in 40 schools (10 in each of 4 varied LEAs). Members of the research team found a "small but statistically significant change in attainment in relation to the changes in curriculum, in particular, the changed emphases and ways of teaching

particular topics (eg using a number line)" (Brown *et al*., 2003, pp.667-8). They stress that this challenges politicians' claims that it has been "an indisputable success" in increasing attainment.

However, as stressed by this headteacher, in claiming that the NNS raised standards in maths he was interpreting standards in broad terms and not solely in relation to SAT results:

> *I think the quality of teaching has improved tremendously in numeracy. It is interesting because the way the government wants to measure success is by outcomes at SATs, at 11 and 7, and I don't think that they always actually show necessarily how much progress some children have made. Certainly our numeracy results up until two years ago were very strong. We have had two very turbulent cohorts just gone through – the Year 6s – and so if you look at the raw figures they are not brilliant. However, if you track those children that have been with us for some time I think the strategy has had an impact, it has made it a lot more focused, and I think that the children are getting a lot more switched onto maths. (Headteacher, 250, July 2004)*

Indeed Brown *et al*. (2003), in line with headteachers' perceptions, acknowledge that their data suggest the NNS "has been effective in improving teacher confidence, and in modernising the curriculum and the ways in which mathematical ideas are taught" (p.670).

The NNS was viewed as encouraging pupil enjoyment of maths and improving their learning:

> *I think the numeracy strategy's really worked, the oral and mental starter making children a lot more independent, a lot more knowledgeable, a lot more numerate – the ways of doing calculations are a lot more how your brain works. How maths was, we taught them a trick but if they couldn't do the trick sufficiently well they had nothing. Now they are using a lot more common sense … and there are a lot more children enjoying maths than ever used to. They love the oral and mental starter and the class teaching. You can see them humming really, they're all there – so it's great – even the less able are far more involved now. I think that's been good. (Headteacher, 155, July 2005)*

> *I think that my job has been made easier with the Year 6 in teaching them because they have had such a thorough background. For teachers who are not mathematicians it has definitely worked. I am not saying that the children achieve any higher at the end of it; it has just been easier for me to get the children to be involved in mathematics more because they are coming up much keener on maths. (Headteacher, 108, June 2003)*

Teachers generally reported growth in children's confidence in and enjoyment of maths, and believed that their understanding of mathematical concepts had increased. However, one teacher reported that "the children loved it to begin with but they got bored of the same programme every day and to me that was as bad as the unstructured was; you need to have a mixture of all those things so the children are not coming in to the same thing every day". Other teachers said that this had initially been a concern but they had not experienced

pupils becoming bored and disengaged. Adopting a more flexible approach to the strategies, and including a variety of tasks and activities in the middle of literacy and numeracy hours, was viewed as countering the potential for "too much sameness".

Complying with the strategies

Although not mandatory, the implementation of the strategies was forcefully recommended. As the DfEE (now DfES) put it: "Our presumption will be that the approach to teaching we set out, based on the National Literacy Project, will be adopted by every school unless a school can demonstrate through its literacy action plan and schemes of work and its performance in NC Key Stage tests, that the approach it has adopted is at least as effective" (DfEE, 1997, p.19). Looking back on the early years of the strategies and irrespective of their opinion of the strategies' advantages and disadvantages, teachers in the 50 schools were highly critical of the government for imposing the strategies "in such a way that 'You don't have to do it, it is an option, but woe betide anybody who doesn't!'" The pressure exerted on schools through Ofsted inspections and the LEAs to achieve compliance was also greatly resented.

Particularly in relation to literacy, many teachers trained in or before the early '90s found their beliefs about effective practice challenged and their confidence undermined by the extent and the detail of the strategies. There were very few who claimed to have been sufficiently confident to evaluate the prescribed changes and make decisions on how to respond to them in the light of their own values and experiences. The majority of teachers interviewed described how they "toed the line" even if they had misgivings about what they were doing and, if they did deviate from recommended practice, they did not publicise the fact to colleagues:

> *Some people wanted to do it [the NLS] properly and I think that as a general group some teachers just lacked total confidence. I mean I suppose it is an important job in that you have got these children here and you want to do your best for them and you want them to meet all your targets and everything else with them. However, I think sometimes we are just a bit too anxious to toe the line. I think that the worst thing ever invented was that clock! I just couldn't get my head around it and in the end you are in your classroom and you know that on a Monday, well my introduction is going to be that bit longer because I am introducing something new. On Wednesday I have a plenary, I am really going to take that time to mop up these misconceptions and it is using your professional judgement. (Year 4 teacher, 391, Oct 2004)*

The minority of schools that decided against implementing the strategies as specified, and chose to modify the literacy and/or numeracy hour from the outset, found themselves "doing battle", "fighting their corner" and "defending the barricades against all the onslaught" from LEA strategy consultants and advisors:

We didn't implement it in the way that the government had suggested. Right from the word go we decided it would be a three-part lesson, that it wouldn't be four different activities with the teacher on one and the others all hopping around doing different things. We didn't ever do that. So we were at loggerheads with the LEA right from the word go [laughter], but we stuck to our guns and said, "No, that is not how we are doing it here". We are really pleased that we did because eventually the three-part lesson, which is in place now, replaced what they said in the first place that we should be doing. (Headteacher, 391, May 2005)

With the benefit of hindsight most headteachers and some literacy and numeracy coordinators were critical of themselves for giving in to national and local pressure, accepting most of the changes without protest and in the process relinquishing established good practice:

We adopted it [NLS] without actually weighing it up in terms of what it was asking and … the practice we were doing already. I think that we tended to take the whole package and try and implement it and that was probably a bad thing to do … for the very good teachers probably it wasn't as good as what they had – good practice that might have been cast aside and shouldn't have been. (Headteacher, 470, Oct 2003)

I was in a unique position in my last school because it was a Beacon school and was very highly regarded within the authority. I was the English coordinator at the school. When the literacy hour came in even in that very, very strong position you still felt, "we will take it on board". There is this thing of making that decision and if anything goes wrong – if, for example, you have a poor year and suddenly your results come down and the authority comes in or you have an Ofsted – people will say "but you are not doing the literacy hour, what have you put in place?" It seems that whatever I have put in place, or whatever is there, has got to be really, really very strong and you have got to be able to stand up and be accountable. Which I think we could have done, but it is about isolation in many ways to say "well I am not doing it", whereas everybody else around you is…. It is having that courage, strength of mind, to say "no, this is good practice, this works within my school. I know my children and no we are going to keep this." (Headteacher, 218, Jan 2004)

It was generally acknowledged that only schools with excellent SAT results and Ofsted inspection reports were in a position to resist implementing the strategies and maintain existing preferred practice. For example, a head of a very successful small school refused to introduce the literacy hour despite considerable continual pressure from the LEA. Her experience was in sharp contrast with that of the headteacher who took over a school in a very disadvantaged area, which was at the bottom of the LEA performance table. As a result it was put in "intensive care". This involved the LEA literacy consultant, who "had very strict, very defined ideas on how the literacy strategy should be handled" coming in to observe lessons and provide help. As a consequence of their position in the performance tables, the staff "felt that we had to do it her way" even though "it involved an awful lot of paperwork, a lot of planning, a lot of assessment, a lot of changing and moving around".

As argued by Jeffrey (2002), "the performativity discourse changed teacher-inspector relations from one of partnership to one of subjugation" (p.541). LEA inspectors now have formal, hierarchical and authoritative roles geared to driving up pupil attainment to satisfy LEA accountability to the government and maintain their position in the tables of LEA performance.

Adapting the teaching of the strategies

Earl *et al*. (2003) found that "the vast majority of teachers felt that they had developed new knowledge and skill through implementing NLS or NNS and indicated that they have the knowledge and skill needed for implementation" (p.93). Also, "nearly all" teachers indicated that they felt "comfortable making adaptations to the Strategy to fit the class" (pp.92-93). However, a different picture emerged from their survey of consultants as "consultants expressed concerns about teachers' understanding of the principles underlying the Strategies, with less than half agreeing that teachers had a thorough understanding" (p.93). Earl *et al*. conclude that "some teachers may feel they have fully implemented the Strategies, but may lack awareness of the underlying principles", or owing to lack of subject knowledge "will have made the easier changes required by the Strategies and may not recognise that many changes and more knowledge are still required" (p.94). Such conclusions clearly have major implications for the future development of the strategies and the associated shifts in classroom practice.

All the 50 schools in our sample were adapting the strategies to some extent. This was in order not only to tailor the strategies to the needs of the children but also to account for the strengths and limitations of the teaching staff, and to abandon aspects considered unnecessary or unsuccessful and to bring back valued practices that were being "squeezed out" by the strategies. This process was facilitated by the perception that such adaptations were acceptable, even expected of them (eg Ofsted, 2002a), although the majority of schools weary of change opted to proceed slowly. Just as the role of LEAs had been crucial in policing strict adherence to the strategies when introduced, the stance of LEAs on adaptation and the nature of any published guidance was also highly influential. For example, in two LEAs, schools "probably wouldn't have broken away so quickly" from the NLS if they had not been provided with units of work that covered the content of the NLS, but in more flexible ways "so you can lengthen it or shorten it, as you need to, to fit the term or the actual books or work you are doing".

Adaptation took a variety of forms ranging from "modifications in small ways by different staff as they need to" to major changes in whole-school policy. Some schools concentrated on systematically reviewing practice and altering one of the strategies, while in others minor changes were occurring simultaneously across both strategies. Taking a whole-school approach involved staff sharing opinions and experiences and deciding jointly on the way forward: "We've

freed it [NNS] up a little bit and made it more flexible and we've done it together as a staff talking about how we plan it and so on and it's been evolving and we feel that we are in control of it". The freedom to make changes was extremely important, not because staff necessarily wanted to make major changes but because feeling "in control" was crucial to the restoration of teacher confidence.

The adaptations schools were making can be placed into four overlapping categories, as follows.

Minor modifications to the strategies

Essentially minor modifications involved "freeing up" school practices from adherence to the detailed prescription of the literacy and numeracy hours, especially the literacy hour, enabling teachers to make their own decisions about lesson organisation and pupil grouping. For example:

> *We got half way through addition of decimals in columns and it [the lesson] is going to go on to tomorrow and so I didn't do a plenary and that is that kind of flexibility. Two years ago you didn't appear to have that flexibility. It was either stop, do it or you got into trouble. (Teacher, 566, June 2003)*

The most common minor modifications to the NLS in relation to the structure and timetabling of the literacy hour were:

- ceasing to have a four-part lesson with a time allocation for each part
- no longer organising work for four groups of pupils and planning in teacher support for each group in turn
- not being tied to having a literacy hour each day.

While the notion that most literacy and numeracy lessons should have a definite beginning, middle and end with a plenary session was very strongly supported, departure from this pattern to take account of the content being taught and the children's progress was now generally regarded as appropriate.

Adaptation also allowed for some spontaneity and opportunities to "bring our own knowledge of the world into our teaching that was lost when it was told 'you will do this book and you will get this out of it' and now we are a bit more free to use some different things". The modifications to the content of the NLS that were commonly mentioned were:

- teaching word and sentence level work together
- spending much more time on aspects of writing, often having separate additional lessons to enable creative writing to be developed and completed
- teaching grammar through the process of carrying out a piece of writing rather than teaching it in isolation
- ceasing to introduce children to technical language terms and complex grammar regarded as unnecessary.

The latter modification was also viewed as lifting some of the pressure on teachers and reducing their planning workload:

> *There is so much to learn and to take on board and you have almost got to re-educate yourself. You have only got to mention the words onomatopoeia and alliteration to people and that is useful work, but most people don't know what those mean. If you have got to constantly re-educate yourself before you can begin to educate the children then that is quite difficult sometimes. (Teacher, 440, June 2004)*

> *The literacy strategy imposed a great deal on the teacher… I think that it was actually requiring a level of grammatical knowledge which they had never been taught, they had never learnt themselves when they were at school. I think that it has taken teachers a long time to come to terms with the literacy strategy and feel comfortable with it and I am not sure that they all do now. (Headteacher, 280, Feb 2004)*

However, for a small minority, usually literacy coordinators, the challenge to develop their own knowledge about language was welcomed:

> *Certainly my awareness, and I would say other teachers' awareness, of how the English language works has improved. I am a language person, I did French and Spanish at university, and so I have a good grounding and yet I have learnt a lot since implementing the literacy strategy. (Literacy coordinator, 185, June 2003)*

As found by Earl *et al*. (2003), teachers were generally much more enthusiastic about the NNS than the NLS, which was why it was receiving much less individual teacher and planned whole-school modification. In part this support was thought to be because teachers regarded their maths teaching as a weakness prior to the introduction of the strategies, whereas they considered themselves to be successful teachers of literacy:

> *The teachers' perceptions – I think it was perception, not necessarily reality – but certainly teachers here perceived that they were teaching English very well. They perceived that they had trouble teaching maths and so there was resentment to the literacy hour. (Headteacher, 315, Feb 2005)*

The teaching approaches brought in by the NLS were a major departure from existing practice for many teachers but they had become familiar by the time the NNS was introduced so, in some respects, teachers found the NNS was less demanding. Also as reported by Earl *et al*. (2003), "We heard repeatedly in our site visits that Numeracy benefited from going second and 'learned from the mistakes made by Literacy'"(p.81). The introduction was thought to be better managed and the training more appropriate and useful. However, for most teachers the NNS was received much more favourably than the NLS because it was regarded as a superior strategy, with more to offer pupils, teachers and schools.

The main issue in relation to the NNS that was mentioned by many of those interviewed and had been the subject of debate in staff meetings was the organisation and pace determining the introduction of new mathematical topics. On the one hand this was perceived as having important advantages:

On a positive note the sort of spiralling effect of the numeracy strategy is that they do re-cover skills over and over again, gradually building on those as they go up through the school. I think that it makes it much easier to link one skill with another. Certainly within planning, knowing where you are going is something that is a big element of the numeracy strategy. (Year 5/6 teacher, 144, June 2003)

Reflecting on past practice, as one teacher put it: "I hate to say it, but before in the olden days you would do shape for weeks and you were thinking 'Oh they haven't got it and so I will do it differently and get the shapes out and keep them going' and obviously at the end of the time you would hope that more of them had got it." On the other hand teachers were concerned about the level of understanding reached by children with special educational needs (SEN), "because if you move on at too much of a gallop with a poorer child they never actually get hold of anything". This was thought not only to adversely affect the learning of children experiencing difficulties but also their confidence and motivation – an observation supported by Ofsted's (2005) findings.

With this in mind, a few schools were considering whether to continue as recommended or whether additional time should be spent on newly introduced topics. However, the majority of teachers felt that on balance the approach advocated by the NNS was preferable and shared the conclusions of the teacher who said: "It needs to be revisited, they are right I think as even in my maths now I have slipped back into some of my old ways but I do take that on board – you know if they haven't got it, just leave it, do something else, come back to it."

Major modifications to the strategies

If a school simultaneously or cumulatively introduces modifications to the strategies like those listed above, classroom practice increasingly becomes very different from both how it was originally conceived in the strategies and how it was initially implemented. At what point in the process of adaptation schools might be perceived as making fundamental modifications to the strategies, or even no longer following them, is of course debatable (as is how desirable, or otherwise, such a move might be).

No longer teaching a daily dedicated literacy and numeracy hour can obviously be regarded as a major structural modification. For example, a few schools were taking certain aspects of the NLS to teach as separate lessons while incorporating other aspects across the curriculum. However, within alternative approaches to curriculum organisation, the fundamental principles of the strategies might or might not be adhered to, intentionally or otherwise. For example, a school of 185 pupils in a rural market town stressed that it intended to continue with the "literacy strategy ethos", which was summarised as promoting children's comprehension and writing through text analysis, but to teach literacy through their own units of work. Each unit was designed to harness text analysis to teaching an approach to writing for a specific purpose and audience, and to provide time for children to achieve depth in their writing and complete a piece of work before starting the next unit.

While over half the schools were experimenting with teaching and/or revisiting some aspects of literacy through the foundation subjects, particularly certain writing skills, there appeared to be little evidence of the same kind of approach being taken towards the numeracy strategy. However, one school that was featured in *The curriculum in successful primary schools* (Ofsted, 2002a), and which had continued to teach the foundation subjects through topic work with a different subject focus each term, was looking at "moving away from numeracy as one solid hour". Instead they were considering timetabling maths groups alongside groups doing other sporting and PE activities, taken and/or supported by teaching assistants, in order to give teachers more opportunities to work in depth with small groups of pupils.

Returning to past practices

Part of the adaptation process was to return to aspects of previous practice, such as individual teachers once again making space in literacy and numeracy sessions to discuss with the class the interests and experiences raised by specific children. Also, many schools were broadening the curriculum in terms of opportunities for pupils to develop literacy skills, by putting greater emphasis back on or reintroducing practices such as book weeks, writers holding school workshops, visits by theatre groups and school plays.

In relation to the NNS one school was considering whether to continue encouraging children to develop alternative approaches to calculation or to return to teaching preferred methods:

> *We've done the analysis of the results this year because we've always done quite highly on the numeracy but we haven't for the past two years. I discussed it with my maths coordinator and with the consultant, and one of the areas where the children didn't score very highly was the calculation. I said that I thought we were confusing our children because we were giving them too many different strategies so they don't know which one to use. So, what we are doing now as part of our training programme for next term is to have a couple of staff meetings looking at the strategies we use for calculation through to Year 6 and decide which one and say "This is the way we are going to do it at our school". (Headteacher, 159, Dec 2003)*

However, for one school returning to past practice meant a major move away from one of the strategies:

> *We abandoned the structure [for maths] that we worked on over a period of about seven years. We had developed our own scheme which was a mixture of all sorts and it was progressive, it had continuity, and it appealed to the children; it was resourced throughout. We overnight had to – like lemmings going over the cliff top – go for the numeracy strategy and it is only now that we are beginning to claw back … so we are just coming back really to what was basically Fletcher maths. (Headteacher, 317, Feb 2004)*

Extending and innovating

For schools that did not have regular literacy events, such as book weeks, writing workshops and visiting drama groups, prior to the NLS, their

introduction alongside the NLS constituted an innovation. In several schools where the numeracy strategy was viewed as "working well" the next stage was "putting the creativity back into maths like they are trying to put the creativity back into English", through linking maths to other subjects, introducing more problem solving and holding maths events. For example, in one medium-sized town school the maths coordinator organised maths challenge mornings for KS2 twice a year. This involved setting up 20 different maths activities (games, puzzles and problem-solving tasks) in the hall. These activities were then tackled by each year group in turn with children working cooperatively on them in small groups.

Other activities that supported the strategies, especially the NNS, were those that involved parents through evening meetings and workshops so they could better assist their children with homework. For example, it was regarded as important for parents to understand how numeracy was taught so they could help their children without confusing them by using traditional methods of computation:

> *When you send homework home there has been some confusion so I think that the maths coordinators are going to do an evening, or a couple of evenings, where they invite parents to come in and teach the parents how to do the maths. (Teacher, 580, Jan 2004)*

The impact of the strategies on teaching methods

An Ofsted survey in three inner-urban LEAs, which was reported in 1997 (Ofsted, 1999), identified weaknesses in the teaching of numeracy. These included "a debilitating overuse of individual work, often linked with an over-reliance on worksheets and published schemes, where reliance on individual work isolated pupils in ways which made it difficult for them to receive any sustained, direct teaching". Also identified were "inappropriate expectations in terms of the pitch of the work and the pace of the lessons, often linked to weaknesses in teachers' curricular knowledge about how to progress number work" (p.96). Such an approach to mathematics teaching was predominant when the 50 schools were visited a decade earlier and, as reflected upon by a teacher trained in the '70s, could be extremely difficult to manage:

> *The main thing [advantageous curriculum change] with me is in the maths. We used to have a scheme and … I hated it because everybody would be following these books, like the old Heinemann books, and they'd all be at different levels. I was teaching in one school and there were, like, 36 children and they were all at different levels working on their own – and it was a nightmare, an absolute nightmare… I ended up with queues and they'd say "I can't manage this". And one teacher said to put them in groups but even in groups you'd have some children racing ahead and you couldn't hold them back but you were trying to explain different things all the time. To me that had just got silly, you know. (Year 2 teacher, 43, June 2004)*

Interestingly, she considered that the approach of the NNS had much in common with her mathematics practice at the beginning of her career:

> *When I first qualified in teaching they didn't have the schemes like that, so you had your maths topic each week ("Oh I'm doing time this week"), so everyone was doing time, but you might give differentiated worksheets or whatever to each group. And to me that was great.*

There were many examples of teachers' perceptions that the NNS had improved the quality of their teaching often involving an unfavourable comparison of past with current practice (see also chapter 7). Maths lessons comprised of individual work, such as those criticised by Ofsted (1999), had been replaced by whole-class teaching at the beginning and the end, or as illustrated later in Box 2a, throughout the lesson. There was general agreement that the teaching of maths is better now than it was with "staff much more confident in exactly what they are supposed to be teaching" and "much more teaching going on rather than children completing exercises".

As emphasised by Kyriacou and Goulding (2004), the nature of "interactive" whole-class teaching as promoted by the strategies is intended to be different from that of traditional whole-class teaching, particularly in relation to teacher questioning and pupil responses. The latter relies heavily on a teacher-centred didactic approach where "teacher questions and pupil answers are based on the teacher asking a high proportion of closed questions or questions requiring a simple recall of facts or procedures, and pupil answers are often short". This is in contrast to interactive whole-class teaching that is intended to actively involve pupils in the lesson through "the use of more searching, higher-order questions which seek to challenge and extend pupils' thinking, in which pupils' answers are probed, built upon and elaborated, and which encourage pupils to ask questions and to interact with peers" (Kyriacou and Goulding, 2004, p.34). However, their systematic review of the literature suggests that teachers may not be aware of this distinction. Certainly some teachers in our study viewed whole-class teaching within the strategies as synonymous with traditional teaching:

> *There is a place to stand up and talk to children and be more direct in your approach and the numeracy strategy hasn't invented that — it is just part and parcel of what I think most teachers are doing anyway. I don't think there are teachers who spend all their time teaching in groups and never ever face the whole class. There has been a turnaround and more of an emphasis on that. It has kind of made it okay now to be more didactic. (Deputy head, 391, May 2005)*

However, most teachers did view whole-class teaching within the strategies as intended to be different from that practised in the past, but appeared to perceive the action part of the interaction as predominantly the responsibility of the teacher. This perception comes across in the comment of a Year 6 teacher about "a lot more waving your arms about and modelling and more interaction with the kids" and is embodied in the frequent reference by interviewees to "the all singing, all dancing teacher" of the strategies.

Table 2g gives a comparison of proportions of time spent on individual, paired or group work within whole-class lessons in literacy and numeracy. Such a table allows readers to see how representative the detailed portrayal of the Year 4 numeracy lesson given below in Box 2a is in relation to the whole sample of 26 literacy and numeracy lessons observed. In addition, this comparison of literacy and numeracy teaching suggests that the latter had higher proportions of direct teaching than the former in our sample, although the small sizes of the sub-samples limit the potential generalisability of such a conclusion.

Table 2g A comparison of proportions of time spent on individual, paired or group work within whole-class lessons in literacy and numeracy

Time spent on pupil activities	Literacy lessons (N=16)	Numeracy lessons (N=10)
More than half of lesson	44%	20%
Between half and a quarter of lesson	44%	50%
Less than quarter of lesson	13%	30%

In addition to more whole-class teaching, another major break with the past introduced by the strategies was planning the lesson to achieve specific learning objectives. These objectives were then shared with children so they were clear about the purpose of a lesson and reviewed at the end to consider what they had learned:

> *I never would have thought a decade ago of actually telling them what I was going to do before we did it. At the end of the lesson too, something else I would never have done a decade ago is asking them, "well, what have you learnt in this lesson?" or "do you think you have understood…" whatever the objectives were that we were trying to get across. (Deputy head, 212, June 2004)*

Plenary sessions were viewed as potentially very important in promoting pupil learning but often experienced as problematic and therefore a useful focus for staff workshops:

> *I'm going to pick it up in the autumn term; looking at what plenary is actually about. It's not about saying we've done this. It's about what we understand and what we are going to do next. And it's about rounding it off, coming together, fixing the learning and I don't think … well, it's the weakest part. Also, coming at the end, it can be a bit rushed. For me it's probably the most valuable part of the lesson. It's where all the learning, all the strings are drawn together and really where the evidence for teacher assessment comes out – this person's got it but that group hasn't. (Headteacher, 226, June 2003)*

Box 2a describes a numeracy lesson that was taught to a top set in Year 4. It provides a breakdown of the components of the lesson and illustrates the ways in which pupils' attention and interest was held by: the pace of the lesson; teacher questions; and the involvement of pupils in a range of related tasks, both individual and in pairs and groups, with a cooperative and a competitive element.

While such participation is endorsed by the NNS, it has been called into question by the lesson observations of Denvir and Askew (2001) who conclude that pupils may be participating in activities rather than engaging in mathematical thinking and that the pace of the lesson may disguise this distinction from the teacher. The questions asked by the Year 4 teacher were predominantly closed and factual, reflecting the material she was teaching and her choice of how to realise her objectives. (A lesson on history described in chapter 7 that uses a similar lesson structure incorporates a wide range of different types of questions and also seeks to encourage pupils to ask questions.) The Year 4 teacher viewed her questions as moving the lesson forward, helping her to hold the children's interest and enabling her to check their understanding. The interactive whiteboard (with some of its benefits and limitations being illustrated) was used to involve the whole class and to assess pupil learning in relation to the lesson objectives.

Box 2a Numeracy hour, top set Year 4

The lesson took place in the Year 4 teacher's classroom. There were 28 pupils in the set. There were 4 tables each with 6 pupils and one with 4 pupils.

9.27 am The teacher introduced the lesson by telling the group, "Our learning objective this morning is to know what a quarter, a half, and a tenth of a litre is in millilitres." She indicated to where these objectives were displayed on the interactive whiteboard.

On the board was written 1600ml, 850ml, 300ml and 13 tenths of a litre. The teacher then put a scale on the board of more than a litre and less than a litre. She asked pupils to volunteer to come up and move the numbers to the correct place on the litre scale. To do this they touched the whiteboard and dragged the number across the board into position. The teacher then went on to provide a half-litre mark and a volunteer moved the 300ml below this and another the 850ml above it. They were asked to explain their positioning of the numbers.

9.35 am The teacher then moved to an ordinary whiteboard where she had put down the same numbers and told the children to list on their own little white slates the smallest through to the greatest.

9.36 am Pupils then had to take out of an envelope on each table a group of cards with numbers on them (eg 2000ml, 600ml). She asked pupils to work in pairs and take four of the cards each and put them in order with the smallest first. Then all the children at the table were told to work together to put all the cards in order. This generated lots of discussion from pupils as to which ones were correctly or incorrectly placed and why.

9.42 am The teacher announced that "there is a table here that has finished". She addressed the whole class and asked each table to hold up one card that was smaller than a litre and then to hold up one between 100ml and half a litre. She went around checking and commenting. She queried one choice and so the table selected another. She emphasised that there is more than one possibility. Then she asked the tables to suggest amounts between one and two litres. When this activity was finished, one pupil per table was asked to put the cards back in the envelope – the rest of the pupils turned to face her.

9.47 am The teacher held up a horizontal stick with tenths on it and the group all recited in turn one tenth, two tenths, etc. She then said this was to represent tenths of a litre. She went to the interactive board and put on the screen a table with tenths of a litre on the left and an empty millilitres column on the right. [She had used the new Links software for lesson preparation; this allows lots of different programmes, eg PowerPoint or Excel spreadsheets, to be accommodated within the same lesson.] She then asked them to say zero, one tenth, two tenths, etc and frequently stops them to ask individual pupils how many millilitres eg seven tenths is. When they got it right she said "brilliant". When all those asked could do this successfully she gave the group two minutes to write into their books the table putting the correct numbers of millilitres on the right-hand side. She put a clock timer on. She went around the tables looking at their work. Most could do it but one boy appeared to be confused. She then got another pupil to fill in the results on the interactive whiteboard, explaining how she arrived at them as she did so. However, as the girl could not reach the top two rows (the teacher tried to move the table down but this was not possible), the teacher completed those and then the pupil took over. [In an earlier tour around the school the head had said that in some infant classrooms they had lowered the interactive whiteboard.]

9.54 am The teacher switched to another table on the interactive board that was the previous one plus an extra column "amount to make 1 litre". She took her metre stick and pointed to half a litre. A pupil said that as it is 500ml they need another 500ml to make a whole litre. One on the table gave an answer (400ml) to the last column (amount to make a litre) and then they had to say what the other two columns were (6 tenths of a litre and 600ml). She asked them to complete the rest of the table writing it into their books. She asked, "Is two minutes enough for this?" and they all chorused "No" so she said she would give them four minutes for the task. She told them when they had had two minutes. She went around helping individual pupils.

10.04 am When they had had just over four minutes she asked individual pupils in turn to come out and fill in one of the cells. Each time she asked if the rest of the class agreed that they were correct. They used a special pencil to write on the board – occasionally they had to be told not to lean their hand on the screen because this made extra marks (since the screen was touch sensitive). After several children had had a turn she said, "Boys and girls, I'm going to have to rush you a bit because otherwise we won't be able to do the last activity." She then went to the board, asked the children for answers and completed the table.

10.12 am She switched to a new slide on the interactive whiteboard headed "What do you know about a litre?" and there were two big squares (one yellow and one purple). She put the tables into two teams and told them that each of the two teams needed to give her a fact about a litre and if it was correct she would put a mark in their coloured box. Children on the tables suggested facts to each other and hands went up to volunteer answers such as "three quarters of a litre is 750ml", "if you have a quarter of a litre you need 750mls to make a litre", "if you have half a litre you need to add 500ml to it to make a litre". When the bell went the yellow team had won by four to three correct answers. They waved their hands in the air.

The influence of the strategies has resulted in more whole-class teaching, although initially for teachers following the three-part structure of the NNS (originally four part for the NLS), this was concentrated at the beginning and end of lessons. However, the increasing flexibility that teachers felt they had to depart from this three-part structure suggests that lessons like those described above in Box 2a are likely to become more commonplace.

It is interesting to consider the above lesson in the context of Wilson *et al*.'s (2001) comparative analysis of the shape and structure of maths lessons in England and Russia in 1998/9 (after the introduction of the NLS but before the NNS). Most of the Russian lessons consisted of whole-class teacher-led work characterised as "a focused series of linked tasks, each of which comprises a blend of oral work, pupil demonstration, written recording and teacher questioning and explaining, with the teacher directing the pupils' activity throughout each task" (p.42). Only one of the 60 English maths lessons that they researched was found to have a characteristically Russian shape. However, owing to the influence of the NNS, 3 of the 10 maths lessons that we observed, like the lesson portrayed in Box 2a, closely resembled the Russian lesson shape. Also, in the lesson in Box 2a, the Year 4 teacher taught in the same kind of ways as those described by Wilson *et al*. (2001) as typical of the Russian teachers.

Thus, her pupils benefited from the use of "a whole-class setting to make learning a social experience" (p.48) and the "high visibility (and audibility) of the work done" (p.49) in a shared public lesson which Wilson *et al*. (2001) consider the strengths of the Russian model of teaching and are also regarded very positively by Alexander (2000). However, whereas the approach to teaching in Box 2a was predominantly derived from government diktat, as Alexander (2000) argues, the Russian model of teaching is underpinned by pedagogical theory and not only draws on more recent theorists, such as Vygotsky (1978), but is also underpinned by an older tradition derived from Comenius (1592-1670).

Conclusion

The strategies, particularly the NLS, were implemented begrudgingly because of the top down, coercive way in which they were imposed on schools and enforced by LEA strategy consultants and advisors. The strategies not only specified detailed subject content but also how it should be taught. In this way, they challenged the one remaining area of teacher expertise not previously subject to government prescription and further undermined teacher competence and confidence. Notwithstanding the strong resentment of such government imposition still felt by many teachers, they expressed approval of aspects of the NLS and over half "strongly liked" the NNS. Adaptations, used to address reservations about the strategies, ranged from minor modifications by individual teachers to major departures based on whole-school decisions. Most schools claimed caution in their approach to change having become familiar with and institutionalised the strategies.

As found in a questionnaire survey for the DfES completed by 4790 teacher trainees (Stewart, 2005), the biggest influence on the decision to become a teacher was a desire to help children and young people to learn. In our study, in answer to the question "what keeps you in teaching?", interest in children's learning, enjoyment of working with them and making a difference to their lives were the predominant responses. It is therefore unsurprising that teachers attached greatest importance to what they considered the benefits to children from the recommendations of the strategies. As a consequence they made changes to their practice, despite considerable extra work and stress, and challenged their past beliefs and assumptions which, in many cases, resulted in a change to previously held values. While some of these changes were subject content specific, most were related to teaching methods.

Our lesson observations and interviews with teachers indicate major differences in the structure of literacy and maths lessons than was the case a decade ago. We found that teachers were making far greater use of whole-class teaching not only at the beginning and end of lessons but throughout. Their lessons were designed to achieve specific learning objectives that were shared with children – most usually through explanation at the beginning of the lesson and by being written on the side of the board. These objectives were revisited during plenary sessions that sought to establish what children had learned and to round off the lesson. Whether working with the whole class or groups and pairs of children, teachers were teaching more rather than setting tasks for children to complete on their own and at their own chosen speed. Through explanations and questions focused on the lesson objectives and ongoing monitoring and assessment of children's responses and work, teachers maintained close control of the direction and pace of lessons. As is illustrated and discussed in chapter 7, the teaching methods advocated by the strategies were increasingly being employed across the curriculum and most teachers regarded this as an improvement on past practice. On the basis of our research reported in this chapter, much of importance in the focus, structure and control of lessons appears to have changed as a direct result of the strategies. These changes seem likely to be enduring.