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A national target already achieved

The National Literacy Strategy (NLS) was launched at a London conference in 1997. During the conference, the Secretary of State for Education, David Blunkett, announced a target that by 2002, 80% of 11 year olds in England would reach Level 4 in reading (the target was later adjusted to Level 4 in English). The ambitious nature of this target is underlined by the fact that in 1996 the percentage of pupils achieving Level 4 in reading was only 58%. Speaking at the same conference, Professor Bob Slavin commented that the announcement reminded him of President Kennedy's 1962 target of getting a man on the moon by the end of the decade. Only, added Professor Slavin, the NLS target was more difficult.

Yet, three years later, the target for reading was achieved two years early. Progress towards the English target for 2002 had already been much greater than seemed feasible in 1997. Only the writing attainment of boys seemed likely to threaten the achievement of the target as a whole. At this high profile, national level, the National Literacy Strategy has already been a major success for English primary schools. It has brought about unprecedented requests for the sharing of its practices from other UK countries, from independent schools and from the secondary sector. The Strategy has been held up by international authorities on educational change as the most ambitious large-scale strategy of educational reform witnessed since the 1960s (Fullan, 2000). This chapter attempts to provide the careful analysis that the success of the NLS calls

for. Its achievements fall into even sharper relief when set against earlier attempts to raise literacy standards, at both local and national levels.

Some earlier attempts to raise standards

Previous more localised attempts to raise standards of literacy have not enjoyed anything like the degree of success of the NLS; many have been inconclusive. For instance, the Bradford Book Flood Project involved a substantial increase in book stocks but its evaluation noted that raising literacy standards involved a complex interplay of factors of which the provision of texts were but one part (Ingham, 1982).

Margaret Meek's *Achieving Literacy* was based on a similarly inconclusive study (Meek et al., 1983). This involved the use of 'real books' to raise the standards of pupils whose reading development had been delayed. Indeed, the study's lack of success apparently led to the publication of the study being thrown into question, although this did not discourage Meek from going on to build her theories of 'how texts teach what readers learn' on related anecdotal evidence (Meek, 1988).

The Leeds Primary Needs Programme, whose evaluation report received prominent coverage in the national press in the early 1990s, involved a substantial investment of resources and in-service training over five years, totalling £15 millions, but it appeared to have little effect on standards. A key constraint appeared to be the promotion of a complex 'integrated day' pedagogy which 'presumed that the particular classroom layouts and patterns of organisation commended would promote children's learning more effectively than others....[The commended approaches included] multiple curriculum focus in teaching sessions, with different groups

working in different curriculum areas and the kinds of teacher-pupil interaction associated with a commitment to discovery learning' (Alexander, 1992: 143). Unfortunately, during the time of the Primary Needs Programme, a slight decline in reading standards was found across the LEA (Alexander, 1992: 52). Robin Alexander's report culminates in his raising the 'problem of good primary practice', in which 'the good tends to be asserted but seldom demonstrated' (Alexander, 1992: 180). As will be shown later in the present chapter, this challenging of widely held assumptions has consistently run through primary and literacy education in recent years.

The Haringey Project, on the other hand, was much successful in raising reading attainment. Pupils taking home books recommended by the teacher to read to their parents led to highly significant gains that were still evident five years later (Tizard et al, 1982; Hewison, 1988). However, replications of the Haringey research in other contexts have been inconclusive (Hannon and Jackson, 1987; Tizard et al, 1988). The issues raised by the discrepancy in findings have been discussed by Toomey (1993).

A previous central government policy for raising standards was focused on the introduction of a National Curriculum in 1989 and a concomitant programme of national testing. Ironically, the national testing programme has not been a reliable way of monitoring national standards over a sustained period of time. The change in the national testing criteria from statements of attainment to level descriptions in 1995 invalidated comparisons of the years before and after this point. The statements of attainment model had, in any case, been subjected to substantial technical criticism

(Pumfrey and Elliot, 1991). The application of norm-referenced measures of reading in longitudinal studies have also failed to come up with evidence that the introduction of a National Curriculum has itself raised standards of reading (Davies and Brember, 1997; 1998).

Research and the National Literacy Strategy

Such a background makes the immediate success of the NLS, on such a large scale, all the more note-worthy. Above all, it reflects sustained hard work by thousands of teachers and pupils. It represents the pay-off from a substantial investment in education by central government, in training materials, in-service programmes and the appointment of several hundred literacy consultants in LEAs.

However, a more profound explanation of the success of the NLS may lie in the much maligned area of educational research. It is paradoxical that, soon after this research was being subjected to substantial criticism (e.g. Hargreaves, 1996; Tooley and Darby, 1998; Woodhead, 1998), the likely success of the NLS was being predicted on the basis of a wide-ranging research review (Beard, 1999; see also Beard, 2000b), although what actually counts as 'educational' research is not always easy to determine. The review was in turn built on the reports from a literacy task force that contained two academics whose work had focused specifically on the research-policy interface.

School effectiveness

The basis of the prediction lay in both generic and subject-specific domains. As was mentioned earlier, English primary schools have for many years been influenced by

notions of 'good practice' that have become increasingly at odds with generic research findings on school effectiveness. These findings have added significance because they have been confirmed after advances in multilevel statistical modelling (Davies, 2000) and multiple studies which have been brought together in meta-analyses. Meta-analyses on school effectiveness and classroom effectiveness were central considerations in the research reviewed during the setting up of the National Literacy Strategy. Two meta-analyses in particular were singled out by the Literacy Task Force (LTF, 1997b): those by Jaap Sheerens (1992) and Bert Creemers (1994).

School effectiveness is a relatively new area of educational research, as is the use of meta-analyses in social research generally (Glass et al, 1981). The effectiveness field is still characterised by debates, particularly on factor isolation (Goldstein and Woodhouse, 2000). Nevertheless, the following extract from Sheerens' analyses identifies a number of factors that, according to research and inspection evidence, were relatively uncommon in primary schools before the advent of the NLS.

Scheerens (1992) identifies two characteristics of school effectiveness that have 'multiple empirical research confirmation':

structured teaching

i.e.
- making clear what has to be learnt
- dividing material into manageable units
- teaching in a well-considered sequence
- using material in which pupils make use of hunches and prompts
- regular testing for progress
- giving immediate feedback

effective learning time

This factor is partly related to the first, in that whole class teaching can often be superior to individualized teaching because in the latter the teacher has to divide attention in such a way that the net result per pupil is lower. Other aspects of effective teaching time are 'curricular emphasis', related to the time spent on certain subjects, and the need to inspire, challenge and praise so as to stimulate the motivation to learn and thus indirectly to increase net learning time.

The London study

As was indicated in the earlier references to the Leeds study, the emphasis in English primary schools has been more on the teacher facilitating learning by extensive use of individual and group work. Whole class teaching has often been denigrated as failing to cater for children's individual needs. Above all, English primary education has been unusual in the international context in promoting teaching approaches in which several subject areas are tackled a the same time. The relative ineffectiveness of this approach was highlighted in one of the first major school effectiveness studies which studied 50 primary schools over a three year-year period (Mortimore et al, 1988), using measures of reading, writing, basic and practical mathematics, oral skills and classroom behaviour. The study identified the importance of 'limited focus' in lessons:

> 'pupils made greater progress when teachers tended to organise lessons around one particular curriculum area…[Where] the tendency was for the teacher regularly to organise classroom work such that three or more curriculum areas were running concurrently, then pupils' progress was marred....pupil industry

> was lower...noise and pupil movement were greater, and teachers spent less time discussing work and more time on routine issues and behaviour control…higher-order communications occurred more frequently when the teacher talked to the whole class (Mortimore et al, 1988: 253-6).

Mortimore et al report that 'limited curriculum focus' is one of twelve factors which are characteristic of effective schools, including purposeful leadership by the head-teacher, a work-centred environment and a positive climate. They also note features that were to become hallmarks of the National Literacy Strategy's Literacy Hour: explaining the purpose of the work to pupils and a balance of whole class and independent work (for which pupils were taught the related skills and guided in the allocated tasks). The researchers go on to identify the value of an audit of what has been achieved and learned, part of what in time was to become the plenary session in the Literacy Hour.

The authors are clearly aware of the tensions between their findings and the views of 'good practice' that were prevalent at the time. Like Alexander, they encourage a questioning of established assumptions:

> 'It appears that many experienced and extremely skilful teachers, whose normal practice has been to limit the curriculum focus of their lessons, have been led to feel guilty about their failure to manage more diverse activities…Many teachers have felt that they ought to be able to handle a variety of topics a the same time. The implication of our data is that they should think again' (Mortimore et al, 1988: 270; 287).

The Literacy Task Force

Some critics of the NLS have noted the apparent anomaly of the NLS *Review of Research and Other Related Evidence* being published after the decision was taken to implement the Strategy. Such criticisms fail to take account of the fact that school effectiveness research is clearly being drawn upon in both reports from the Literacy Task Force (LTF, 1997a and b). The Task Force contained two major authorities in the field, Michael Barber and David Reynolds. Reynolds, in particular, had consistently drawn attention to the tensions between British teaching practices and research findings on effectiveness, including issues raised by unnecessarily complex teaching arrangements (Barber, 1997; Reynolds, 1992; Reynolds et al., 1994; Reynolds, 1998). This concern also continued to be expressed in reports of inspection evidence (e.g. OFSTED, 1997).

What may be seen as a greater anomaly than that referred to above is the fact that school effectiveness research seems to have been overlooked in many literacy education publications, despite the prompts that were sometimes given (e.g. Beard, 1990, 1991, 1992).

Reading process research

If generic research on school effectiveness partly predicted the success of the NLS, so did reading research, especially that concerned with the reading process and the role of phonic knowledge. Again, there is evidence of a substantial discrepancy between the model of reading assumed by influential teacher education publications and the conclusions from research, in this case particularly experimental research. These

conclusions have been recently marked by an unusual consensus in what has often been a contentious area of investigation. At an international conference at the University of Glasgow in 1995, the morning session ended with one eminent British researcher commenting in a rather surprised tone of voice, 'We all agree!' The focus of the agreement was the relative importance of word recognition compared with the use of contextual support in reading. Recent psychological research indicates that what characterises reading fluency is *context-independent* word recognition and *context-dependent* comprehension. This is well discussed by one of the speakers at the Glasgow conference, Charles Perfetti (1995). It may not be too much of an exaggeration to say that UK literacy education has, for many years, been disproportionately influenced by a model that is in many ways diametrically opposite.

For some years fluent reading was held to be a 'psycholinguistic guessing game' by some influential writers. This view assumed that fluent reading was characterised by increasing use of contextual cues and minimal use of visual cues (Goodman, 1967; Smith 1971). In the last twenty years a great deal of evidence has been put forward in support of the opposite view (see also Beard, 1995; Stanovich, 2000). The change in thinking has recently been starkly underlined by Jane Hurry in her literature review for the QCA on intervention strategies in early literacy:

> 'It is now very clear that Goodman and Smith were wrong in thinking that skilled readers pay so little attention to the details of print...skilled readers attend closely to letters and words and in fact ..it is the less skilled readers who rely more heavily on contextual cues to support their reading' (Hurry, 2000: 9).

Recent research-based models of fluent reading suggest that reading involves the use of sources of contextual, comprehension, visual and phonological information which are simultaneously interactive, issuing and accommodating to and from each other (Rumelhart and McClelland, 1986; Seidenberg and McClelland, 1989; Adams, 1990; Reid, 1993; Stanovich and Stanovich, 1995; Perfetti, 1995). These experimental findings are brought together in the National Literacy Strategy in the 'searchlights' model. As the NLS Framework notes, most teachers are aware of these strategies for reading, but have often been over-cautious about the teaching of the phonic aspect of reading (DFEE, 1998a: 4). Again, there is a substantial research base to this issue and, again, influential views have had to be challenged and eventually superseded.

The role of phonic knowledge

Researchers have associated phonological awareness, children's ability to hear speech sounds, with early success in learning to read for some years. Children's phonological development follows a clear pattern, from being aware of syllables, to being aware of onsets and rimes within syllables, to being aware of phonemes (Treiman and Zukowski, 1996). There is also a significant connection between children's phonological development and their later reading success, linking oracy and literacy in highly specific ways. The central importance of phonemic processing in reading development has been increasingly highlighted by research on both sides of the Atlantic (e.g. Rieben and Perfetti, 1991; Gough et al., 1992, Shimron, 1996; Macmillan, 1997; Byrne, 1998, McGuinness, 1998).

In contrast, the prevailing view in teacher education has been based on other perspectives. It has been widely assumed that learning to read has much in common

with learning to speak. These assumptions have been combined with arguments against the use of systematic teaching of sound-letter correspondences (phonics). By 1992, publications which espoused such theories figured largely in initial teacher education book-lists (Brooks et al., 1992). The most recommended booklet on these lists was one espousing an 'apprenticeship approach' to teaching early reading, which referred to phonics as 'only one very small part of reading' (Waterland, 1985: 24; see also Beard and Oakhill, 1994).

It is difficult to estimate the effects that Waterland's ideas, and the ideas of those who espoused her views, had on the teaching of early reading. Inspection evidence suggests, however, that, through the 1990s, the teaching of phonic knowledge was sometimes unconvincing and at times haphazard (HMI, 1991; OFSTED, 1996a; OFSTED, 1998). In contrast, the National Literacy Strategy clearly draws on both the experimental research and the inspection evidence in its commitment to a strong and systematic teaching of phonics and other word level skills (DfEE, 1998a: 4), but within a balanced framework that ensures continuing attention to text and sentence level teaching as well. The importance of such a balance is shown in overseas literacy research.

Lessons from overseas literacy research

Inspection evidence and curriculum development research have also highlighted several other aspects where British primary education may have been out of step with thinking in other countries. Early reading in English primary schools has been largely taught by individualised methods in which the structure of commercial materials was often very influential. There was little use of regular direct class or group teaching of

reading, even when the design of commercial materials suggested it (OFSTED, 1996c). As an earlier HMI report had pointed out, for most pupils in Key Stage 1, reading to the teacher was often the most frequent experience of one-to-one teaching... often less than five minutes per pupil. Schools generally provided too few opportunities for the pupils to see and hear the text of a story simultaneously (HMI, 1992: 16).

This state of affairs contrasted with the shared reading approaches which have been developed in New Zealand. In these, teacher and pupils simultaneously read aloud a large format text. The approach has been especially promoted in the writing of Don Holdaway (1979, 1982). He was particularly interested in developing methods which resembled the visual intimacy with print which characterises the pre-school book experience of parents reading with their children. Holdaway suggests that the use of 'big books' and shared reading enables the teacher to display the skill of reading in purposeful use, while keeping before pupils' attention the fact that the process is print-stimulated. Research suggests that, before the National Literacy Strategy, large format texts were not widely used for teaching reading in English primary schools (e.g. Cato, et al., 1992; Ireson et al., 1995; Wragg et al., 1998; see also Beard, 2000c)

There was a similar story in relation to the teaching of skills for dealing with information texts. According to inspection evidence, these were taught rather patchily and sometimes left to chance (OFSTED, 1996a). Links between reading and writing were often not directly made (OFSTED, 1996b). This indicated that much might be gained from the approaches developed from Australian genre theory. The distinctive features of various genres are used firstly to raise awareness about their structures,

then to model them in shared reading and writing and eventually to tackle them in collaborative or independent writing (Martin, 1989; Callaghan and Rothery, 1988; Cope and Kalantzis, 1993).

The EXEL project at Exeter University has also influenced the NLS. The project has drawn together a range of skills and strategies to form the EXIT model ('Extending Interactions With Text'). The model maps ten process stages and related questions from activation of previous knowledge, through establishing purposes and locating information, to interacting with a text and communicating the information to others (Wray and Lewis, 1997).

To assist children in the writing of non-fiction, the project has used a number of 'frames', skeleton outlines of starters, connectives and sentence modifiers, to help to 'scaffold' early attempts to write in particular genres (Lewis and Wray, 1995). The EXEL project focused on recounts, reports, procedures, explanations, persuasion and discussion, building on the work of Beverly Derewianka (1990). The potential of this curriculum development research was recognised by the Literacy Task Force (LTF, 1997b, p.38) and subsequently many of its ideas were built into the NLS *Framework for Teaching* (DfEE, 1998a).

International comparisons

The potential of a national infusion of direct, interactive teaching which drew upon the above sources was further underlined by international comparisons of reading performance. Britain is located within a 'middle' group of countries which includes Belgium and Spain. In the middle and upper parts of the range of scores, children in

England and Wales performed as well as those in countries much higher in the rank order (Brooks, Pugh and Schagen, 1996: 13). However, a distinctive feature of British performance is the existence of a long 'tail' of under-achievement which is relatively greater than that of other countries (Brooks, Pugh and Schagen, 1996: 10).

Dealing with the tail of under-achievement

There are several programmes in different parts of the world which are specifically targeted at disadvantaged students. These use combinations of teaching approaches which, until recently were relatively rare in the UK, but which have subsequently been adapted by the NLS. For instance, Bob Slavin's *Success for All* programme is currently in use in nearly 500 schools in over 30 states in the USA. It is also used in an adapted form in Australia, Canada, Israel and Mexico (Slavin, 1996).

The main features of *Success for All* (more recently called 'Roots and Wings') are:

- a fast-paced, structured curriculum;
- direct, interactive teaching;
- systematic phonics in the context of interesting text;
- a combination of shared and paired reading and writing;
- early interventions for pupils who have not made expected progress after one year at school.

A similar strategy especially to address the needs of disadvantaged pupils is being implemented in Melbourne, Australia, in the Early Literacy Research Project (ELRP)

led by Carmel Crévola and Peter Hill (1998), researchers whose work has also clearly influenced the NLS (LTF, 1998a: 19).

The National Literacy Project

Perhaps the most significant indicator of the likely success of the NLS came from he National Literacy Project. The National Literacy Project (NLP) was set up by the previous government in the Spring of 1996 in 15 local Education Authorities. The rationale of the NLP drew upon the school management and teaching quality evidence from research and school inspections. Participating schools implemented two key structures, a *Framework for Teaching*, which translated the national curriculum into termly objectives, and the Literacy Hour, whose time allocation was based on the review of the national curriculum (Dearing, 1994). The Framework and the Literacy Hour were earlier versions of what were subsequently to be included in the NLS.

Major gains in attainment

The NLP was evaluated by the National Foundation for Educational Research (Sainsbury et al, 1998). Data were collected from 250 schools. The test results revealed a significant and substantial improvement over the 18 month period. Final test scores had improved by approximately six standardised score points for Y3/4 and Y5/6 pupils. This is equivalent to 8 to 12 months progress *over and above* what is expected in these ages. For Y1/2 pupils the increase was nearly twice as large again, at 11.5 standardised score points.

It is unfortunate that a project that reported such startling successes and which had such positive messages for national policy was over-looked by critics who argue that

the justifications for the NLS were *post hoc*. Early in 1997, the Literacy Task Force were clearly convinced that the Project was the harbinger of a major change in literacy education.

> 'The NLP's framework for teaching is firmly based on the OFSTED data, research evidence and intentional experience.....the work of the National Literacy Project seems likely to make a major contribution [to raising standards]. There is nothing to be gained from a new government coming in and overturning good work which is already in progress. On the contrary, the National Literacy Project provides a helpful beginning from which we can develop our strategy (LTF, 1997a: 19-20).

The evaluation of the NLP provided clear indications of the substantial increase in reading standards that the NLS would be likely to bring about. The evaluation provided less detailed evidence on writing, beyond measures of spelling and punctuation. Later national test results raised different issues about the influence of the NLS influence on writing.

The question of writing

As was pointed out earlier, the main obstacle to the achievement of the 2002 target was shown to lie in children's writing attainment, especially that of boys. Again, a clear direction for literacy education is found in research findings, encapsulated in a meta-analysis. Provision for writing in schools has become better informed by research in recent years, particularly in relation to process and range (Beard, 2000a). However, a number of pedagogical aspects remain under-developed.

In line with its commitment to increasing the direct interactive teaching of literacy, the NLS has promoted greater use of shared and guided writing. The research basis of these methods appears not to be widely appreciated and it is worth spelling them out in detail. As with the school effectiveness research discussed earlier, a meta-analysis provides a clear sense of direction for literacy education.

Shared writing

The value of shared writing has been underlined by the research of Bereiter and Scardamalia (1987). On the basis of a sustained programme of over a hundred experimental studies, they make a number of recommendations:

- pupils (and teachers) need to be made aware of the full extent of the composing process;
- the thinking that goes on in composition needs to be modelled by the teacher;
- pupils will benefit from reviewing their own writing strategies and knowledge;
- pupils need a supportive and congenial writing environment, but will also benefit from experiencing the struggles that are an integral part of developing writing skill;
- pupils may also benefit from using various 'facilitating' techniques to help them through the initial stages of acquiring more complex processes (e.g. listing words, points that may be made, the wording of final sentences etc.), in advance of tackling the full text. Such procedures can relieve the pressure on children to produce a text, even a rough first draft, until they have assembled the support that they need.

Guided writing

The value of guided writing has been indicated in a meta-analysis by Hillocks (1986; 1995). Hillocks reviewed nearly 500 studies that assessed the effectiveness of one or more teaching approaches. He then used a set of criteria to select sixty well-designed studies for inclusion in a meta-analysis (research synthesis). He identified four broad teaching approaches. Their particular features are set out in the table below.

Approach	**Teacher's Role**	**Writing Topics**	**Particular Teaching Strategies**
'Presentational'	Imparting knowledge prior to writing	Assigned by teacher	Setting tasks and marking outcomes
'Natural Process' and Individualised	Engaging pupils in writing and fostering positive dispositions	Chosen by pupils	Providing general procedures e.g. multiple drafts and peer comments
'Guided Writing' (what Hillocks calls an 'environmental' approach)	Inducing and supporting active learning of complex strategies that pupils are not capable of using on their own.	Negotiated	Developing materials and activities to engage pupils in task-specific processes

Hillocks reports that the guided writing approach was two or three times more effective than the natural process/individualised approaches and over four times more effective than the presentational approach. According to Hillocks, the presentational approach is only minimally effective because it involves telling pupils what is strong or weak in writing performance, but it does not provide opportunities for pupils to

learn procedures for putting this knowledge to work. The process and individualised approaches are only moderately effective because they prompt ideas and plans for incorporation in particular pieces of writing, but do not ensure that pupils develop their own ideas and plans autonomously. This is especially so in the organisation of different kinds of writing. The guided writing approach is more effective because it presents new forms, models and criteria and facilitates their use in different writing tasks. Problems are tackled in a spirit of inquiry and problem-solving.

Evidence from recent inspection evidence

School inspection evidence has suggested, however, that writing attainment is still relatively weak in many English primary schools. In a recent discussion paper, Her Majesty's Inspectorate (HMI) has drawn attention to inspection findings that suggest that the writing aspects of the NLS have not been as effectively implemented as its generic and reading aspects:

- there is insufficient teaching of writing
- extended writing often comprises practising writing rather than being taught how to improve it
- in literacy hours, there is often not an appropriate balance between reading and writing
- skills learned in literacy lessons are insufficiently transferred into work in other subjects
- there is an over-reliance on duplicated worksheets

- there is an over-reliance on the use of a good stimulus to inspire pupils to write and insufficient back-up by the necessary teaching, for example in teacher-modelling.

The features of the best teaching of writing reported by HMI include the following, several of which are currently being taken up in the NLS *Grammar for Writing* initiative (DfEE, 2000), which was developed to bolster the teaching of writing in the 7-11 age-range from 2000-1.

- a good technical knowledge of literacy
- the selection of good quality texts to illustrate the particular writing skills being taught
- the incorporation of word and sentence level work into the teaching of writing
- intervention at the point of composition to teach writing skills
- the reinforcement and development of writing skills throughout the curriculum (HMI, 2000).

Conclusion

There has only been space in this chapter to discuss some of the main reasons why the success of the NLS represents the fulfilment of what could be predicted from a close reading of educational research. The chapter has also shown how the implementation of the NLS confronted some widely held views and introduced different emphases in primary teaching. Such changes inevitably cause unease. Sometimes they cause knee-jerk responses that a reflective reading of research findings might obviate.

The success of the NLS may also confirm that its contribution to the curriculum is not as a monolithic 'one size fits all' model, as has been suggested. Instead, it provides a highly flexible framework, offering endless permutations of shared, guided and independent work at text, sentence and word levels. It uses a rich range of text types outlined in the national curriculum and which schools have been able to adapt according to circumstances.

Neither is the NLS an excessively top-down model that threatens the flexibility of early years of schooling. Instead, it provides for such flexibility by yearly rather than termly objectives for the Reception age-range that can be used in ways that are felt to be developmentally appropriate.

Most importantly, the NLS has not yet been challenged by other research-based curriculum models for literacy education that could be adopted with similar or greater likelihood of success on a national scale. The NLS has already achieved the equivalent of getting a man on the moon. In so doing, it has raised standards and improved the life chances of many children.

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