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Making primary connections: the cross-curriculum story

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Using longitudinal curriculum data which they have collected over a ten year period from a nationally representative sample of primary schools (funded by grants from the Qualifications and Curriculum Authority), the authors report on evidence of changing models of subject provision within the primary curriculum. The period 1997–2007 has evidenced a range of government interventions with implications for subject teaching and data enable the analysis and discussion of the impact of these interventions on the ways in which sample schools have organised and planned their curriculum.

Keywords: primary curriculum; longitudinal data; subject organisation; combining subjects

Introduction

From 1996 until 2007 the authors were funded by the Qualifications and Curriculum Authority (QCA) to carry out longitudinal curriculum data collection and analysis from a nationally representative sample of primary phase schools. One of the annual questions in the survey asks schools to detail the use they make of 'combining' subjects for teaching. Using analysis of the survey data produced by this question alongside other sources of evidence, this article reflects on changes in primary school curriculum planning and design in that period. To locate the article we contextualise the origination of a subject-discrete National Curriculum (which, for political reasons, side-stepped the cross-curricular issue) and then move on to a descriptive analysis of the period covered by the data survey, a period influenced by the introduction of the National Strategies in English (Literacy) and mathematics (Numeracy) (Boyle and Bragg 2006).

An imposed curriculum

The first version of the National Curriculum in 1988 was criticised for its rigidly subject-structured model (White 2004). Rather than taking the opportunity to at least consult about a reform, an 'aims and values' based model, the 'curriculum model presented was locked into socio-historical precedent, traditional and academic' (Crawford 2000) and 'the 8–10 subject timetable has as academic a look to it as anything Sir Robert Morant could

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have dreamed up' (*Times Educational Supplement* 1987). Aldrich drew attention to the similarity between the subjects list and the one prescribed for the newly introduced state schools in 1904 (1988, 22). Recent retrospective commentaries, such as that by White, go further by stating 'The National Curriculum gives every appearance of having been lifted from what was originally traditional grammar school practice' (2004, 2). Brehony asserts that 'The National Curriculum adopted, in opposition to the primary schools' use of projects, the time-hallowed conception of the organisation of school knowledge into subjects' (2005, 31).

Among practitioners there was a common perception that the original National Curriculum (DES 1987, 1988) and its subsequent amendment following the Dearing review (SCAA 1993), were devised by sets of subject specialists working at the government's direction within the isolation of subject parameters and without a clear view of the aims and purposes of the curriculum as a whole (SCAA 1997).

> The construction of a subject-based curriculum seemed to suggest that the policy battle had been won by supporters of tradition rather than the advocates of a utilitarian and pedagogic tradition. (Crawford 2000, 69)

The 'single subject *v.* cross-curricularity' agenda

Better Schools (DES 1985) provided a stronger rationale for the subject-based structure of the National Curriculum than other succeeding documents. However, it also stated that the curriculum is described in subject terms for the sake of convenience and that it is not in dispute that the purposes of education at school go beyond learning the traditional subjects (DES 1985, para. 53). The National Curriculum 5–16 consultation document (DES 1987) did not ignore whole curriculum issues and there is a clearly discernible direct line from Better Schools:

> there are a number of subjects or themes ... which can be taught through other subjects. ... It is proposed that such subjects or themes should be taught through the foundation subjects. (DES 1987, 8)

The consultation document clarified 'the description of the National Curriculum in terms of how the school day should be organised and the curriculum delivered' (1987, 9) and that programmes of study should 'reflect cross-curricular themes' (1987, Annex A, para. 3).

Subsequent commentators have reported that behind the scenes there had been complex manoeuvrings based upon the DfES's objective of 'getting teachers to accept, understand and implement a National Curriculum free from the distraction provided' (Crawford 2000, 629) by the cross-curricular debate, while managing 'conflict between the curriculum endorsed by Baker (Minister of Education) and the DES and that supported by Thatcher, her policy advisers and right wing pressure groups' (Crawford 2000, 625). The Thatcherite view of a National Curriculum was a 'basic syllabus' with the pupils' knowledge and skills being assessed by 'simple tests' (Thatcher 1993, 53), a view echoed in 1991 by her successor John Major's call for 'a return to basics in education'. This 'nostalgic' view of education (Ball 1994, 44) extended into the Blunkett years of tenure of the department, and there is an interesting current parallel in that

> with the National Literacy and National Numeracy Strategies, New Labour went much further in the direction of a 'teacher proof' curriculum that indicated that teachers could not be trusted to implement its top down, standards agenda. (Brehony 2005, 33)

Oblivious to this political in-fighting, the absence of any formal 'cross-curricular' guidance, however, was noted by teachers and commentators alike with dismay, as this to them seemed to emphasise the rigidity of the new curriculum structure.

> Some of the teachers I have spoken to over the past year maintain that the only way to meet the large number of attainment targets in the core and foundation subjects is to continue the tradition of cross-curricular themes. . . . These teachers further support this view by pointing to the large overlaps between the various subject documents – the only effective way to teach when there are so many common themes is by using a cross-curricular approach – the overlaps with English, mathematics, geography and design and technology are probably the most obvious. (Tyler 1992, 564)

It was not as if the 'cross-curriculum debate' was not alive during the development period for the original National Curriculum. Shoemaker (1989, 5) described an integrated curriculum as

> education that is organised in such a way that it cuts across subject-matter lines, bringing together various aspects of the curriculum into meaningful association . . . it views learning and teaching in a holistic way and reflects the real world which is interactive.

Humphreys, Post and Ellis described 'links among the humanities, communication arts, natural sciences, mathematics, social studies, music and art. Skills and knowledge are developed and applied in more than one area of study' (1981, 11), while Palmer mentions 'developing cross-curriculum sub-objectives within a given curriculum guide; developing model lessons that include cross-curricular activities and assessments; and including sample planning wheels in all curriculum guides' (1991, 59). However, Tyler also presents the contradictory opinion of other teachers who argue that the discrete subject approach is best as

> the National Curriculum documents are quite complicated enough as they are and to try to develop a cross-curricular approach on such a basis is virtually impossible . . . and can only lead to a rather vague and ineffective implementation of the various programmes of study. (Tyler 1992, 564)

Tyler reported the early 1990s debate between 'the teachers who support the cross-curricular approach' and their belief that creating artificial divisions between different areas of the curriculum will not help children 'to learn [and] . . . those who prefer to consider the curriculum in terms of discrete subjects' who believe that their approach will make it 'easier to teach the National Curriculum' (Tyler 1992, 565).

This study can therefore throw light on how this debate played out in the way the curriculum is organised in schools.

Methodology

For those primary schools in the early and mid-1990s coming to terms for the first time with a National Curriculum, and which many viewed (see Tyler, above) as a refocusing of their whole teaching strategy onto 'teaching the National Curriculum', there seemed to be emerging three styles of curriculum planning: (1) individual subject teaching; (2) subject-led or subject-specific topics; and (3) thematic planning (Goodson 1989; Tyler 1992). In 1993 the National Curriculum Council (then chaired by Ron Dearing) produced *Planning the National Curriculum at Key Stages 1 and 2: Advice to the Secretary of State for Education* (NCC 1993), which advised on the organisation of the curriculum within the National Curriculum framework and

recommended units of work divided into 'continuing' units and 'blocked' units which contained a progressive sequence of learning activities either within or across subjects. The development of thematic planning focused on a cross-curricular approach, with subjects embedded within thematic units which were stimulating and retained the child's interest through their active involvement with the theme.

The data for this article were collected by the authors between 1996 and 2007 through funding supplied by the QCA for their School Sampling (1996–2004) and Monitoring Curriculum and Assessment (2005–7) research projects. Although this article focuses on primary school data, the survey comprised an annual curriculum survey of schools and settings across all phases: foundation, primary and secondary.

A nationally representative sample (by region, school type and size) of state-maintained primary schools that participated in the primary curriculum survey forms the basis of this study. As an example, Table 1 shows the 2005 sample (41% response rate) by geographical distribution against the national statistics. The number of schools in each sample year was as follows: 1997 N = 297, 1998 N = 362, 1999 N = 339, (*no survey in 2000*), 2001 N = 367, 2002 N = 348, 2003 N = 463, 2004 N = 802, 2005 N = 677.

A range of key themes was embedded in the longitudinal questionnaire, with one in particular focused on trends in teaching approach, i.e. whether subjects were taught separately or the degree to which they were combined. Questions also investigated the number and range of subjects combined into topic planning and issues concerning curriculum balance and breadth (see Appendix, Figure A1, for sample questions).

The authors are aware that there are methodological issues with the instrument, for example changes over time in the wording of question stems and in the style of a question. These are witness to the constraints which emerge in publicly funded policy research. The key longitudinal question probed the profile of separate and combined teaching implementation across all subjects by year group. In the years 1997–2001 the sub-categories of the question were: nearly always separate, separate half the time and never/hardly ever taught separately. For 2002 and 2003 the sub-categories were: hardly ever/never combined, combined half the time and nearly always combined. The same

Table 1. Sample by regional distribution (2005).

	Invited sample		Returned sample		National statistics*	
	N	%	N	%	N	%
East Midlands	156	*9.5*	70	*10.3*	1729	*9.7*
Eastern	193	*11.7*	69	*10.2*	2085	*11.7*
Inner London	65	*3.9*	18	*2.7*	702	*4.0*
North East	87	*5.3*	42	*6.2*	949	*5.3*
North West and Merseyside	247	*15.0*	91	*13.4*	2639	*14.9*
Outer London	106	*6.4*	43	*6.4*	1147	*6.5*
South East	267	*16.2*	118	*17.4*	2717	*15.3*
South West	179	*10.8*	71	*10.5*	1981	*11.2*
West Midlands	176	*10.7*	73	*10.8*	1892	*10.7*
Yorkshire and Humberside	174	*10.5*	82	*12.1*	1921	*10.8*
Total	1650	*100*	677	*100*	17,762	*100.1*

*DfES January 2004.

information was collected but the categories were labelled differently in those two years. For 2004 and 2005 the question addressed English, mathematics and ICT only, and looked at key stage rather than year group.

The reliability and limitations of 'self-report' data should also be considered. Despite the random selection of a representative sample and the healthy response rate (e.g. 41% return in 2005: see Table 1), completion of the survey was not compulsory, and a percentage of schools chose not to respond. One might therefore expect a certain bias in the output – for example, do rather more 'successful' schools tend to participate and therefore 'skew' the resultant data? The findings of this study are reliable to the extent that the self-reported information is accurate. In the context of this survey, in which all reporting of responses is anonymised, one would hope that there is little or no reason for respondents to give inaccurate responses.

In order to enrich this study through deeper understanding of practice at the classroom level, a sub-sample of case-study schools was selected to reflect examples of different approaches to achieving curriculum balance. (Case-studies involved interviews with head teachers.) It was anticipated that data generated in these studies would triangulate with evidence from the quantitative survey.

Data and discussion

In presenting the school response data for this article we look at a chronological year-by-year profile for each subject across each teaching year group, and at patterns of subject combinations. We illustrate the findings with qualitative data generated through the case-study interviews and from supplementary survey data where appropriate.

Teaching by single subject or combination of subjects

Table 2 shows the percentage of time that each subject was taught separately across each primary year group in 1997, indicating that the only subject at Key Stage 1 (Years 1 and 2) which even 75% of the respondents reported as being 'nearly always taught separately' was mathematics. Apart from the timetabling of physical education and music for administrative and resource reasons, all the other subjects at Key Stage 1 were taught in some form of combination for up to or more than half their taught time.

At Key Stage 2 (Years 3–6), especially in the year prior to key stage testing, the profile of separate and combined subjects was different to that at Key Stage 1. Mathematics was

Table 2. Percentage of time a subject is taught separately, 1997.

(%)	Y1	Y2	Y3	Y4	Y5	Y6
English	36.8	37.9	48.3	50.6	55.8	55.8
Mathematics	74.1	78.2	91.2	92.4	93.8	93.3
Science	37.9	43.8	68.2	69.1	74.7	77.3
D&T	24.1	27.7	38.7	37.4	41.1	47.3
ICT	11.6	12.6	14.3	15.8	15.2	16.5
History	15.1	24.0	52.7	55.1	57.8	61.3
Geography	16.5	23.7	50.4	52.3	53.8	58.3
Art & design	19.6	21.6	36.1	38.7	41.7	44.6
Music	73.0	73.6	84.2	87.3	88.3	88.8
PE	91.3	91.5	96.7	97.0	98.2	97.8
RE	64.4	67.2	78.4	80.2	81.0	82.1

reported by over 90% of the schools (91% Y3–93% Y6) to be taught as a separate subject. Science (not tested at Key Stage 1, but tested at Key Stage 2) increased from 44% single subject teaching in Year 2 to 77% single subject teaching in Year 6. English similarly increased from 38% single subject teaching in Year 2 to 56% single subject teaching in both Years 5 and 6. Quite how much of that increase of single subject teaching was due to test preparation we can only speculate. However, our most recent survey data (2007) indicated that test preparation in Year 6, in the second half of the spring term, accounted for three or more hours per week in two-thirds of schools (66%) and two hours per week in about a quarter of the schools returning data (22%). Over three-quarters of the sample (77%) indicated that the amount of time devoted to test preparation had increased over the past ten years. Data from the 2003 survey illustrated that, in the month of April in Year 6 classrooms, an average of almost 14 hours per week (56% of the available teaching time) was spent on test preparation across the three tested subjects. Over 10 hours per week of 'teaching time' was spent on test preparation in January in Year 6.

There was an interesting non-test but cross-key stage effect apparent from the reported data for both geography and history – clearly not prioritised as discrete subjects at Key Stage 1 (geography 23% and history 24% taught as separate subjects in Year 2) but becoming timetabled as 'separate' subjects at Key Stage 2 (geography 50% in Y3 to 58% in Y6; history 53% in Y3 to 61% in Y6).

As illustrated by Table 2, the teaching profile of each subject was relatively consistent across the year groups within each key stage, so for the sake of simplicity and also because of the 'high stakes' associated with end of Key Stage 2 testing, the following discussion focuses on the trends in Year 6.

The introduction of the National Literacy Strategy (1998) and the piloting of a Numeracy Strategy (fully introduced in 1999) would, from the data, seem to have had a marked and immediate effect on the teaching models across all core subjects in Year 6. Figure 1

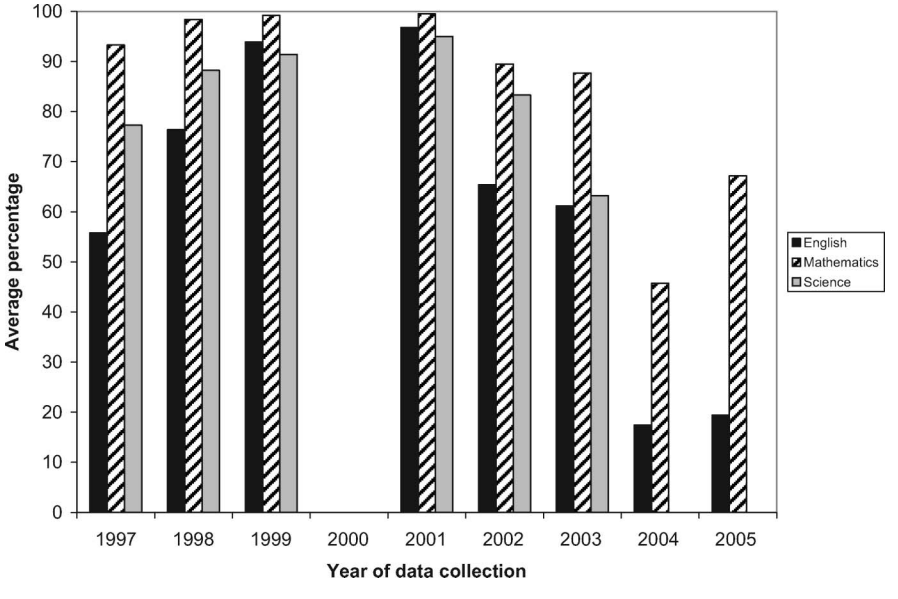

Figure 1. Percentage of time core subjects are taught separately in Year 6 (1997–2005).

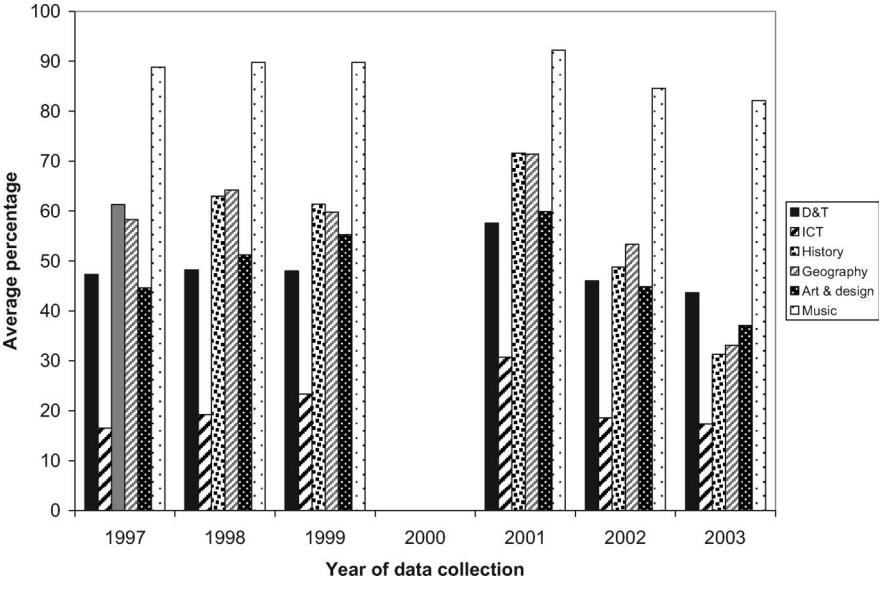

Figure 2. Percentage of time that foundation subjects are taught separately in Year 6 (1997–2003).

shows that all the core subjects (English 93.9%, mathematics 99.2% and science 91.4%) largely became 'separate subjects' by 1999 and were almost entirely separate by 2001 (English 96.8%, mathematics 99.5%, science 95.0%).

The foundation subjects also followed a trend towards increased separate subject teaching which peaked in 2001 (Figure 2). With the introduction of the revised National Curriculum in September 2000 there was no curriculum data collection funded by QCA in 2000, so data are missing for one year when key implementation changes of a revised curriculum were happening. Subjects such as history and geography, which are well suited to a combined topic-based teaching approach, reported increases of respectively 11% and 13% in separate subject teaching from 1997 to 2001. The political message crudely interpreted as 'single subject teaching good, combined subjects bad' had now reached its peak, for all the foundation subjects were now following the model based on their reported increased percentages (D&T 48% 1999–58% 2001) history 61% 1999–72% 2001) geography 60% 1999–71% 2001). ICT, which had traditionally been regarded as either a cross-curricular subject or as a facilitating agent of other subjects, increased from 23% in 1999 to 31% in 2001.

Providing a 'balanced' curriculum

In the 2001 survey, over two-thirds (69%) of the sample schools reported having made changes to the balance of their curriculum, while a further 21% indicated that they were currently implementing changes. Just over a quarter (26%) stated that they were not able to maintain a balanced curriculum; of those, 93% offered reasons for this, their main comments referring to the fact that time had been reduced for the foundation subjects (40%), and that this reduction was due to the national emphasis on core subjects as school performance indicators (37%). Thirty per cent of respondents mentioned time constraints

and 14% stated that they would have to combine the teaching of certain subjects in order to cover more subject content:

> We try to make it as balanced as possible but often feel non-core subjects are squeezed out.
>
> Same argument as in the past – too much content not enough time, pressure on school to continue to improve reading, writing and maths.
>
> Priority given to raising standards in order to meet targets, non-core subjects are not given a great deal of emphasis.

Of the 74% of schools who indicated that they could still maintain a balanced curriculum, 7% stated that this was 'with difficulty' while others offered explanations of the strategies they had adopted in order to maintain balance.

> We have extended the school day to fit everything in.
>
> Time restraints – subject areas are blocked together to enable us to cover more.
>
> Overwhelming pressure from LA [local authority] on behalf of government to improve SATS [Standard Assessment Tests] results in core subjects, can only maintain balanced curriculum because our SATS are good and therefore able to resist pressure.
>
> It is difficult, as demands increase something has to give, usually a reduction in time allocated to non-core subjects.
>
> Curriculum was more balanced five years ago, strong emphasis on literacy/numeracy has created imbalance between practical/academic subjects. We try to give pupils as many practical skills as possible but this has reduced with revised curriculum.

In 1998 the detailed statutory requirements in the programmes of study at Key Stages 1 and 2 in the six foundation subjects had been lifted in order to enable schools to concentrate more on targets for literacy and numeracy. Primary schools were told that they could reduce time spent on subjects such as art, PE and music (Brehony 2005, 35). A trend in increased teaching time allocation in the core subjects and subsequent decreases in teaching time for foundation subjects is clearly evident from other longitudinal data collected as part of this survey (Boyle and Bragg 2006). Teaching time allocated to English (+4%) and mathematics (+2%) increased at Key Stage 2 between 1997 and 1999 resulting in these two subjects accounting for over half (51%) of the timetable. One of the sample schools interviewed by the authors reported that the National Strategies 'squeezed the time for everything else. When the numeracy hour came in it was very discrete and everybody was getting used to the structure of it and nothing (i.e. no subjects) did cross over then.'

There is evidence from the comments to suggest that some schools planned to return to a more integrated approach or to create more cross-curricular opportunities in order to accommodate the required emphasis on literacy and numeracy and still provide a balanced curriculum.

> Still over-emphasis on NLS/NNS [National Literacy Strategy/National Numeracy Strategy] requirements in timed format; integrated approach to day would better suit the majority of the classes but having the courage to buck the requirements is too high.
>
> Some subjects have limited time available due to priority of core subjects; imbalance will be addressed next academic year as improvement in effectiveness of policies creates more cross-curricular opportunities and releases time for these subjects.

> Pressure on time squeezes out humanities to an extent, although we are working at organising topics so that they overlap, especially into literacy and art.
>
> Determined to maintain balanced curriculum; to do this need to regain autonomy over school day, reject structure of literacy/numeracy framework. Want pupils to follow line of enquiry in depth using curriculum as analytical/planning tool not strait jacket.
>
> Literacy and numeracy account for majority of time, but this year have also prioritised foundation subjects – planning and delivery – much of which we try to deliver cross-curricular, but staff still nervous of diverting from the NLS and NNS.

It seems that necessity encouraged schools to return to the combined teaching approaches that were common practice prior to the NLS and NNS. The longitudinal data (see Figure 2) show a trend of a return to combination subject teaching from 2002. It is unclear whether this change happened spontaneously in schools, i.e. prompted by an overcrowded curriculum and government-imposed strategies to focus on the core subjects and the conflicting natural desire to provide a broad and balanced experience in the best interests of the pupils. The 2001 Ofsted annual report highlighted the pressure on the primary curriculum that some schools said was emanating from the demands of the National Strategies for Literacy and Numeracy. In 2002 Her Majesty's Inspectorate carried out a survey of the effect of the national strategies on the primary school curriculum and published the news that

> while a majority of head teachers report a continuing squeeze on the curriculum, just one in three feel that the pressure is beginning to ease ... they take a more flexible approach to the timetabling of subjects and they establish productive links between English and mathematics and other subjects. Head teachers reported that this flexibility provides further opportunities for their teachers to strengthen links between subjects. (Ofsted 2002a, 11)

In 2002 Galton and MacBeath reported that the concentration on literacy and numeracy was reducing teaching time for other areas of the curriculum: 'Art, drama, music and ICT are being squeezed and are only partially covered by lunchtime and after-school clubs.' The disparity between the current emphasis on literacy and numeracy and the broad and balanced curriculum outlined in the original National Curriculum was raised in the annual report of the Chief Inspector of Schools (David Bell) for 2002: 'The strong focus on raising standards in English and mathematics and on meeting targets exerts considerable pressure on the time devoted to the teaching of other subjects' (Ofsted 2002a, 3). This report reinforced the link between the strategies and the beneficial effects on the teaching of English and mathematics – 'English and mathematics, strongly influenced by the two national strategies, remain the best-taught subjects' – but lamented that 'the strongest features of this teaching too seldom carry over into other subjects' (Ofsted 2002a, 3). Bell then reinforced the point even more strongly: 'The gulf between what pupils achieve in the core subjects and in the rest of the curriculum remains a concern' (Ofsted 2002a, 5). This statement was not lost on other commentators:

> In what was a departure from Ofsted's previous commitment to the standards agenda, the report referred to the amount of time taken up by the drive to raise standards in English and mathematics and by the national tests. (Brehony 2005, 36)

As Alexander phrased it:

> Ofsted discovered a link between breadth, balance and standards. ... Ofsted found that of the 3508 primary schools inspected in 2000–1 under 6% achieved both high test marks in English

> and mathematics and consistently excellent teaching and learning across the full range of the National Curriculum. (Alexander 2004, 25)

Ofsted posited that it was the breadth and richness of the wider curriculum which gave teachers and pupils a meaningful context in which to apply, reinforce and extend the basics (Ofsted 2002b). However, it is interesting to note that in 2007 Christine Gilbert, Her Majesty's Chief Inspector, lamented the worrying existence of the 'two-tier curriculum' in her annual report (Ofsted 2007).

One of our survey sample summarised this need:

> We are still in the mind-set of each subject having an allocated time, feel numeracy and literacy are fantastic, but we need to adapt a different approach to afternoons or the other 50% of the timetable. I think it should be holistic, a more topic-based approach, skills based rather than fact based, D&T [design and technology] as such is not a serious contender for time in primary but 'making' – art and craft should be. Blocking things like arts (literacy, music, art) is really rewarding. I feel we need more artists, writers, etc. in school in the primary phase while focusing on maths/English. Vital that some knock-on effect be realised at Key Stage 3 or why bust our collective guts?

Alexander contests that New Labour took the opposite view, that 'the rest of the curriculum was a distraction to the (annual performance) targets' (2004, 25) and transmitted to schools the unspoken threat that 'reducing the time spent on literacy and numeracy in order to free time for the rest of the curriculum, knowing as they do how much hangs on the next round of literacy and numeracy targets' (2004, 15) could have serious implications. One of our case-study schools, situated in challenging circumstances, explained how using a skills-based rather than subject-focused approach to teaching, in which subject content was covered in the form of blocked two-week topics, had resulted in a marked improvement to their Key Stage 2 test results.

Adapting, combining and embedding: modelling a flexible curriculum

In 2002 QCA published *Designing and timetabling the primary curriculum* which advocated a return to broad and balanced planning and exemplified to schools models of a more flexible form of subject timetabling, introducing the notions of adapting, combining and embedding aspects of subjects within other subjects. In 2003, 75% and in 2004 68% of the schools surveyed reported that they found this guidance booklet useful. In 2004 data illustrating further integration of both core subjects followed the publication of the DfES's *Excellence and enjoyment* (2003), 72% of the sample in this year indicating that the document would have implications for their school. An open-response question requested schools to detail those implications. Almost a third (31%) of the respondents stated that it would enable greater flexibility in curriculum design, 29% reported that it would lead to reorganisation of the curriculum and 17% said that it would mean a return to a cross-curricular/topic-based approach to teaching. One of the sample schools responded: 'We were thinking in that way prior to the document because we had done all the creativity work already.' All subject areas (see Figure 2) recorded a return towards more combination teaching in 2002, indicating that the restrictions on breadth imposed by the strategies were beginning to be challenged at school planning level – prior to the publication of the Primary Strategy in the following year which legitimised the change.

More integrated core subject teaching, particularly evident in English, and a desire to move in this direction, exemplified by the qualitative comments, corresponds with QCA's encouragement to embed literacy and numeracy (QCA 2002). In 2002, over four out of five

schools (84%) stated that their schemes of work in the foundation subjects identified opportunities for pupils to apply their literacy skills and three-quarters of schools (75%) identified opportunities for numeracy skills. In 2005, QCA's new website *Customise your curriculum* (http://www.qca.org.uk/qca_5198.aspx) supplied support materials for 'adapting and combining the original schemes' and 'embedding English and mathematics across the curriculum'. One of the interviewed schools offered the following description of how staff training is provided:

> to highlight speaking and listening in the classroom and teaching the skills that children need for speaking and listening, and actually teaching those skills through other subjects. We did them, initially, as discrete activities where we had to work with each other and make eye contact and ask a question, then waiting for a question to be asked before responding. Now we build that into our lessons [in order to embed literacy across the curriculum].

Our 2005 survey data illustrate further changes that were happening to the school curriculum. Most schools (over 90% for science, design and technology, ICT, history and geography) were using the QCA/DfES schemes of work and, of those, almost two-thirds were adapting the units to suit their school (61% KS2) while around a quarter of schools were selecting activities from units to 'fit' their own scheme (23% KS2). At Key Stage 2, nearly half (45%) of the sample schools were combining units from different subjects. Figure 3 shows that those subjects perhaps most often associated with the traditional topic-based model, i.e. design and technology, history, geography, and art and design are most often combined.

Patterns of subject combinations over time

We analysed survey data in order to gain insight into how schools construct their topics and how this may have changed over time. There were methodological issues (outside our

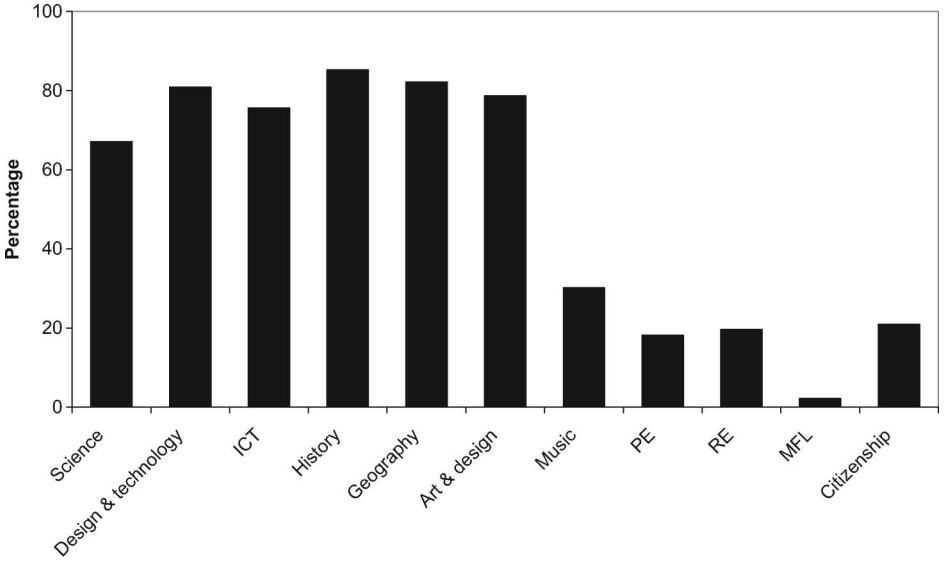

Figure 3. If you combine units from different subject schemes, in which subjects are units combined? (CFAS/MCA 2005).

control) about the way that the data were collected and the fact that in some years schools were asked to list 'the subject combinations that you usually teach together' (1997) and in other years 'which subjects are most often linked in topics? Please give three typical examples' (2005). Due to the many permutations of subject combinations and generic topic titles it was difficult to draw any firm conclusions. However, the data do illustrate issues which have emerged in the earlier discussion.

Table 3 looks at subject combinations at Key Stage 2 from 1997 to 2003 because, for these years, the question stem remained consistent. In 1997 English was taught in a cross-curricular context by 11% of the sample and taught with at least one other subject by 16% of surveyed schools. With the introduction of the NLS these percentages fell to 4% in 1998 and to 2% in 2002 and 2003 for the cross-curricular model and to 12% in 1998 and to 9% in 2002 for English taught with at least one other subject. However in 2003, after the introduction of the Primary Strategy (DfES 2003), there was an increase to 30% for English taught with at least one other subject. It is interesting that in 2003 cross-curricular English did not report an increase, but English combined with one other subject substantially increased. This perhaps illustrates the complexity of fully integrating English while still meeting the requirements of the NLS. No longer can the writing of an essay in history be defined as integrated English, i.e. the aspects of literacy must be more precisely accounted for. Mathematics was reported as seldom taught in a cross-curricular way at Key Stage 2 (1% 1997 and 1% 2002) and in the range 5% (1997) to 9% (2003) taught with at least one other subject.

At Key Stage 2 ICT was the subject reported with the highest percentage for being taught in a cross-curricular context (25% 1997 to 14% 2003), a model largely sustained throughout the course of the survey to date. Art was minimally evidenced as a cross-

Table 3. Single subject most frequently combined at Key Stage 2.

	1997		1998		2002		2003	
	N = 242	%	N = 286	%	N = 314	%	N = 200	%
English cross-curricular	27	*11.2*	10	*3.5*	7	*2.2*	8	*1.7*
ICT cross-curricular	60	*24.8*	56	*19.6*	22	*7.0*	66	*14.3*
D&T cross-curricular	1	*0.4*	3	*1.0*	–	–	10	*2.2*
PSHE cross-curricular	2	*0.8*	2	*0.7*	5	*1.6*	33	*7.1*
Art cross-curricular	–	–	4	*1.4*	–	–	5	*1.1*
Maths cross-curricular	3	*1.2*	–	–	3	*1.0*	–	–
History and geography	–	–	43	*15.0*	41	*13.1*	39	*8.4*
English and at least one other subject*	39	*16.1*	35	*12.2*	28	*8.9*	59	*29.5*
Maths and at least one other subject*	13	*5.4*	19	*6.6*	15	*4.8*	19	*9.5*
Science and at least one other subject*	36	*14.9*	42	*14.7*	89	*28.3*	67	*33.5*
History and geography and at least one other subject*	2	*0.8*	12	*4.2*	7	*2.2*	30	*15.0*
PSHE and at least one other subject*	6	*2.5*	7	*2.4*	71	*22.6*	78	*39.0*

*Note some overlap between these categories as the subjects identified can occur in the same topic group.

curricular subject at Key Stage 2, with 1% of schools reporting that model in both 1998 and 2003.

Conclusion

The longitudinal data supplied by the sample schools have proved important in chronicling and supplying a detailed primary phase subject-level picture of changes in curriculum planning for the period 1997 to 2007. However, while reflecting on the reported data, it is important to keep in mind the political nature of the 'curriculum reforms' of the last 19 years. The original political concept of a National Curriculum circa 1988 was very much a discrete subject-based model. The unchanging nature of this model was confirmed by the Dearing revisions (SCAA 1993). When the authors' curriculum survey started to collect national sample data in 1997 the evidence profile from the schools which supplied data was one of teaching discrete subjects but with a medium to high level of cross-subject teaching, especially in Key Stage 1 and throughout both key stages in certain subjects (e.g. geography and history), with the exception of mathematics, which retained its 100% exclusivity even at Key Stage 1.

The introduction of the National Literacy and National Numeracy Strategies, and the high level of external auditing and accountability of the implementation of those strategies, resulted in a pronounced reduction in cross-subject planning, linkage and teaching alongside an increased concentration of teaching time on English and mathematics which reduced time allocated to the foundation subjects (Boyle and Bragg 2006). The introduction of the revised curriculum 2000 did not initially (despite suggesting that opportunities for connections could be planned between subjects: see DEE 1999) redress the balance. The survey data for 2001 provided evidence that the emphasis on single separate subject teaching was as strong as it had been prior to the revised curriculum. Gradually, supported by QCA's *Designing and timetabling the primary curriculum* booklet (2002) and the Primary Strategy (DfES 2003), plus a more supportive attitude from Ofsted (2002b) towards planning for subject teaching, schools began to demonstrate flexibility in their timetabling of subjects.

There is still some way to go because, while English is now reported by schools as being taught through a blend of separate subject and in combination with other subjects, mathematics is still firmly located in a separate subject teaching model. The political imperative still prevails. 'The literacy and numeracy strategies worked' (Blair 2005) – to some level, but at what cost? (See Fullan 2003; Alexander 2004; Boyle and Bragg 2006.)

> With that recent history in mind, with the Literacy and Numeracy Strategies firmly in place, and with a continuing commitment to targets, who can possibly believe the Primary Strategy's avowed commitment to a broad and balanced set of learning experiences. (Alexander 2004, 25)

To conclude on a note of optimism, in curriculum design terms QCA's recent pronouncements are heartening:

> [that] the national curriculum subjects are only part of the curriculum . . . the real curriculum is the entire planned learning experience . . . this is about looking at how the curriculum can meet the needs of children now and in the future. (Waters 2006)

This conceptualisation seems to sit well with existing initiatives such as Opening Minds (RSA 2005), the International Primary Curriculum (http://www.

internationalprimarycurriculum.com/) and Building Learning Power (http://www.buildinglearningpower.co.uk/blp/Home.html), among others. It also links to the idea of school clusters and networks exploring, practically, issues such as how an effective curriculum can be negotiated with learners, how learning can be created by learners and not simply 'mandated' to them and how teachers can feel liberated from a curriculum which is presented as a high-pressure chase to 'cover content' within prescribed time limits. That has to be the way forward.

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Appendix: Sample questions from the longitudinal curriculum survey

Figure A1. Example of response from 1998

(1) Please indicate how frequently each of the following subjects are taught as a separate subject (i.e. not as part of a topic/theme):

Code 1: If **nearly always** taught as a separate subject (e.g. three-quarters of the time or more)

Code 2: If taught as a separate subject **approximately half of the time**

Code 3: If **hardly ever/never** taught as a separate subject.

	Y1	Y2	Y3	Y4	Y5	Y6
English	1	1	1	1	1	1
Mathematics	1	1	1	1	1	1
Science	1	1	1	1	1	1
Design & Technology	2	2	2	2	2	2
ICT	3	3	3	3	3	3
History	2	2	2	2	2	2
Geography	2	2	2	2	2	2
Art & design	1	1	1	1	1	1
Music	1	1	1	1	1	1
PE	1	1	1	1	1	1
RE	1	1	1	1	1	1
Other 1 (specify) *Italian language*	1	1	1	1	1	1
Other 2 (specify)						

Figure A2. Example of question with subject groupings

(ii) If your school organises subjects into topics, how many subjects are usually included?

	KS1	KS2
None – all subjects taught separately		
2–3 subjects included		
4–5 subjects included		
6–7 subjects included		
All subjects included		

Figure A3. Example of question on linked subjects

(iii) Which subjects are most often linked in topics? Please give three typical examples for each key stage.

Key Stage 1 Title of topic	Subjects included	Key Stage 2 Title of topic	Subjects included
e.g. Ourselves	Art and design, PE and science		